

Catalog of Type Specimens
of Recent Fishes in the
National Museum of Natural History,
Smithsonian Institution, 6:
Anguilliformes, Saccopharyngiformes,
and Notacanthiformes
(Teleostei: Elopomorpha)

DAVID G. SMITH

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ABSTRACT

Smith, David G. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 6: Anguilliformes, Saccopharyngiformes, and Notacanthiformes (Teleostei: Elopomorpha). *Smithsonian Contributions to Zoology*, number 566, 50 pages, 1994.—The known type specimens are listed of anguilliform, saccopharyngiform, and notacanthiform fishes in the collections of the Division of Fishes of the National Museum of Natural History, Smithsonian Institution, published through 1993. These include 980 specimens in 590 lots including 223 holotypes, 15 lectotypes, one neotype, 33 lots and 39 specimens of syntypes, 292 lots and 644 specimens of paratypes, and 29 lots and 61 specimens of paralectotypes of 317 nominal species. Lectotypes are designated for *Muraenesox coniceps* Jordan and Gilbert, *Gymnothorax ocellatus saxicola* Jordan and Davis, *Muraena pinta* Jordan and Gilbert, and *Sidera castanea* Jordan and Gilbert.

The listing is arranged alphabetically by family, and within families by genus and species. Information, as applicable, for each species includes genus, species, and subspecies names; author(s) and date of publication; page of original description and accompanying figures and plates; type status; USNM catalog number; number of specimens and range of total lengths; and collection data. The number of predorsal, preanal, and total vertebrae are provided for all name-bearing types (holotypes, syntypes, lectotypes, and neotypes) of anguilliforms. The current status of each name is given (valid, valid but in a different genus, or a synonym). A field headed "Remarks" contains relevant information that does not fit elsewhere. An index arranged alphabetically by species follows the list.

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Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 6: Anguilliformes, Saccopharyngiformes, and Notacanthiformes (Teleostei: Elopomorpha)

David G. Smith

Introduction

This report continues a numbered series of catalogs of the type specimens in the collections of the Division of Fishes, National Museum of Natural History, Smithsonian Institution, Washington, D.C. Catalogs published previously cover the Characiformes (Vari and Howe, 1991); Blenniidae (Springer et al., 1991); Beloniformes (Collette et al., 1992); Gonorhynchiformes, Gymnotiformes, and Siluriformes (Ferraris and Vari, 1992); and Selachii (Howe and Springer, 1993). Other catalogs are in preparation and will be published as they are completed. The present report covers the orders Anguilliformes, Saccopharyngiformes, and Notacanthiformes, comprising respectively the true eels, the deep-sea gulpers, and the deep-sea spiny eels. Fourteen families of Anguilliformes are represented: Anguillidae, Chlopsidae, Colocongridae, Congridae, Derichthyidae, Heterenchelyidae, Moringuidae, Muraenesocidae, Muraenidae, Nemichthyidae, Nettastomatidae, Ophichthidae, Serrivomeridae, Synphobranchidae, and one

unidentified leptocephalus. Two of the four currently recognized families of Saccopharyngiformes are represented, the Eurypharyngidae and Saccopharyngidae. All three notacanthiform families are represented, the Halosauridae, Lipogenyidae, and Notacanthidae. Together with the Albulidae, Elopidae, and Megalopidae, these orders comprise the superorder Elopomorpha, fishes characterized by the possession of a leptocephalus larva. There are no albulids, elopids, or megalopids in the Smithsonian Institution type collection.

The Anguilliformes is a large and imperfectly known group of fishes. Eels are largely marine, although several regularly penetrate fresh waters, and one family, the Anguillidae, is wholly catadromous. Eels are found in nearly every marine habitat, from the abyssal plain to coral reefs. It is hoped that the present catalog will encourage and facilitate research on the taxonomy of these fishes.

MATERIAL.—The anguilliform type material comes from a wide variety of sources. As the national museum, the Smithsonian Institution was the primary place of deposit for material collected by United States Fish Commission and its various successor agencies. Among the most important collections, both scientifically and historically, were those made by the steamer *Albatross*. In a career that lasted nearly 40 years (1882–1921), this vessel collected widely in both the Atlantic and the Pacific and amassed a wealth of material. Although largely forgotten today, the *Albatross* played an influential role in the development of American marine science. In many ways equal to the *Albatross* was the *Oregon*, which

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made extensive collections in the tropical western Atlantic during the 1950s and 1960s. Many of the types reported on here were collected by the *Oregon* and her companion vessel, the *Silver Bay*. Her successor, the *Oregon II*, is still working. David Starr Jordan and his colleagues contributed many types to the Division of Fishes collection. Particularly well represented are specimens from Hawaii, Samoa, and the west coast of Mexico. Over the years, types often were exchanged between the Smithsonian and other major museums, particularly Stanford University, the Field Museum in Chicago, and Harvard's Museum of Comparative Zoology, further enriching the type collection. Authors often have made a special effort to send paratypes to the Smithsonian even when the holotypes are deposited in their own or other museums.

METHODS.—Entries are presented alphabetically by order, family, genus, and species in the original form and spelling. The holotype or lectotype is listed first, followed by paratypes or paralectotypes, in ascending order by catalog number. Syntypes are listed in the same manner as paratypes. The holotype for every species is given, even when it is not a USNM specimen (the acronym USNM is derived from the United States National Museum, the organization that formerly encompassed the Division of Fishes collection; see Vari and Howe, 1991:2, for an explanation); in the latter case, the museum acronym and catalog number are listed in parentheses. The length is given for each specimen in millimeters; for syntypes, paratypes, and paralectotypes, the number of specimens and the range of lengths is given. The measurements presented are those given in the original description; specimens were not routinely remeasured, but if the length originally was given in non-metric units or was not given at all, the specimen was remeasured. For anguilliforms and saccopharyngiforms, remeasured lengths are total lengths for adults, standard lengths for larvae. Measurements taken from the literature are assumed to be total lengths. Notacanthiforms were handled somewhat differently. Because the extremely attenuate tails of all notacanthiform fishes are subject to damage, and because the tip of the snout in halosaurids is delicate and easily broken, total and standard lengths are less useful. I follow McDowell (1973a:47) in using a gnathoproctal length (tip of lower jaw to anal opening); as gnathoproctal lengths are rarely given in the literature, all notacanthiform types were remeasured. All leptocephali were remeasured as well, because these larvae tend to shrink after long periods in alcohol; the remeasured lengths are given separately for each specimen. Because the number of vertebrae is an important diagnostic character in eels, the vertebral counts for all anguilliform and saccopharyngiform primary types (holotypes, syntypes, lectotypes, and neotypes) are given immediately following the lengths. Vertebral counts follow the method of Böhlke (1982) and are given as predorsal/preanal/total. Where the specimen is incomplete, a "+" is added after the total count. Vertebral counts were taken from the literature when possible (many were given by Böhlke, 1982); otherwise the specimens were

x-rayed and the vertebrae were counted from the radiograph. For leptocephali, the corresponding myomere counts are given.

Collection data are as complete as possible and are presented in a standard sequence. One or two general localities are given first, most often an ocean and subdivision (for example Atlantic, Bahama Is.); this follows Division of Fishes protocol and aids in searching the computerized database. These are followed by a stated location, where available. This is the location given in the original publication or field notes, with some redundancies removed. Latitude and longitude are given when available, followed by depth (in original units, with metric conversions added when necessary), date, vessel and station, time (assumed to be local time unless otherwise indicated), collector, and field number. The abbreviation "Is." denotes an island group, "Id." a single island, and "Ids." two or more particular islands. Many specimens have metal tags attached or loose in the jar with numbers stamped on them. These tags apparently were attached to the fishes in the field or during processing in the laboratory and presumably were linked to field data. In some cases, for example material from the *Albatross* Philippine expedition in 1908–1910, notes are available to interpret these numbers. In many other cases, however, no reference is available, and the meaning of the numbers has been lost. Metal tag numbers are prefixed by "TT" (tin tag). Some of the *Albatross* Philippine specimens were provided with linen tags with numbers printed on them; these are prefixed by "LT." In addition, the ledger books often contain other numbers in a field headed "Original Number." In some cases these can be deciphered as station or field numbers, in others they are tin tag or linen tag numbers, but often there is no way to know what they mean. These numbers are given here without comment as "original number."

Following the list of specimens under each name, the currently recognized status of the name is given. A name can be either valid as it stands, valid under another genus, or a synonym of another name. Such interpretations are always subject to change, but they do give an indication of where the species stands. I have cited the earliest authority for each synonymization, but the final decision on the status of a name is my own. There are probably as many incorrect synonymizations in the literature as correct ones, and I have judged each one by my own standards. The "Remarks" field contains whatever relevant information that does not fit elsewhere.

Over the years, some types have been exchanged to other museums. These specimens are listed here under their original USNM numbers, with the new museum and catalog number (when available) given. A few specimens designated as types by the describer(s) cannot be found. Some of them probably deteriorated and were discarded; some may have been borrowed and lost. Some Jordan and Gilbert types, especially those described in the 1882a paper, are not in the collection and may have been lost in the fire that destroyed the fish collection at Indiana University in 1884.

It often is difficult, especially in dealing with the older

literature, to determine which specimens constitute the type series. Jordan and his colleagues usually designated a particular specimen as the "type," and this is easily identified as the holotype. They were considerably more haphazard about paratypes. I have tried to be as literal as possible in my interpretation. Specimens specifically mentioned in the description are considered types; specimens collected at the same time and place but not specifically mentioned are excluded, even though they may have been available to the author. Fowler (1934) designated holotypes and then simply stated that there were a certain number of paratypes, without giving any identifying details. Again, I have been completely literal. For example, for *Benthenchelys cartieri*, Fowler reported a "type" and four paratypes. There were originally five specimens on the shelf labeled as paratypes, four from the same station as the holotype and one from a different station. I consider the four specimens collected with the holotype to be Fowler's four paratypes; the fifth specimen in this case is not a paratype. Garman (1899) was particularly exasperating. Nowhere did he use the word "type" or any of its variations. He listed the station number that his specimens came from but did not even give the

number of specimens. Some descriptions clearly are based on more than one specimen (for example, counts were given as ranges). Others seem to be based on counts from one specimen. In some cases, he gave a length, again an indication that a single specimen was described. In other cases, the evidence is contradictory. Except where there was clearly only a single specimen available to him, I have considered all of Garman's types to be syntypes.

Institutional abbreviations given here follow Leviton et al. (1985). ICZN refers to the International Code of Zoological Nomenclature, third edition, 1985.

ACKNOWLEDGEMENTS.—Vari and Howe (1991:2) mentioned the present and past workers in the Division of Fishes who contributed to the development of the type catalog project. I would like to thank in addition Thomas M. Orrell for helping to provide a computerized printout of the relevant type holdings, which formed the framework for this paper. William N. Eschmeyer checked a draft of this paper against his species database at the California Academy of Sciences and provided valuable advice on nomenclatural matters. Karsten E. Hartel (MCZ) assisted in tracking down some Garman types.

Annotated List of Type Specimens

ANGUILLIFORMES

ANGUILLIDAE

Anguilla manabei Jordan, 1913:359, pl. 57.

Holotype: USNM 74118 (407 mm, vertebrae 31/41/116). Japan, Shikoku; from a rapid near Koyadaira, a village at the foot of Mount Tsurugi, Awa, Japan; Manabei, Y.

Status: Synonym of *Anguilla japonica* Temminck and Schlegel, 1846 (Ege, 1939:89).

Anguilla tyrannus Girard, 1858:171.

Holotype: USNM 857 (618 mm, vertebrae 29/38/105). North America, Texas; mouth of the Rio Grande del Norte (Rio Bravo); 1853; Clark, J.H.

Status: Synonym of *Anguilla rostrata* Lesueur, 1817 (Smith, 1989a:34).

Remarks: Girard (1858:171) described this species from a single specimen "collected by John H. Clark, under Major Emory" at the mouth of the Rio Grande. He gave no catalog number but later (1859a:76) listed it as USNM 857. That number was listed as missing when the type collection was inventoried in 1980, and I did not find it during the initial preparation of this catalog. A specimen bearing the identical collection

data was present in the general collection, however, and it bore the number USNM 43108. I consider it most likely that 857 and 43108 represent the same specimen. Girard (1859a:76) listed two more specimens, USNM 858 and 859, from Matamoros, Mexico. These cannot be found today, and, at any rate, they are not types.

Leptocephalus grassii Eigenmann and Kennedy, 1902:84, fig. 1.

Syntypes: USNM 49751 (1, 45 mm, myomeres 66/70/~105). Atlantic; 38°25'N, 72°40'W; 1883–1887; *Albatross*; original length 49 mm.

USNM 49752 (1, 45 mm, myomeres 62/71/~107), Atlantic; Cape Hatteras to Nantucket; 38°47'20"N, 72°37'W; 0–1091 fm (0–1997 m); 5 Nov 1883; *Albatross* 2103; original length 47 mm.

Status: Synonym of *Anguilla rostrata* Lesueur, 1817 (Eigenmann and Kennedy, 1902:84).

CHLOPSIDAE

Boehlkenchelys longidentata Tighe, 1992:20, figs. 1–3.

(Holotype: ROM 46990).

Paratype: USNM 317168 (1, 145 mm). Indian Ocean, Chagos Archipelago; Salomon Id., between Isle

Diabole and Isle Anglaise; 5°20'38"S, 72°12'38"E; 60–80 ft (18–24 m); 18 Mar 1979; Winterbottom, R., Emery, A.R. et al.; 1535–1615 hr; WE 79-079.

Status: Valid.

Chilorhinus brocki Gosline, 1951b:195, fig. 1.

Holotype: USNM 112312 (85 mm, vertebrae 19/43/112). Pacific, Hawaiian Is.; shallow-water poison station in Kewalo Basin, Honolulu; 29 Oct 1948; Brock, V.E., and Welsh, J.P.

Paratypes: USNM 112313 (2, 58–63 mm). Same data as holotype.

Status: Synonym of *Chilorhinus platyrhynchus* (Norman, 1922) (Böhlke, 1956:82).

Kaupichthys atlanticus Böhlke, 1956:66, figs. 1, 2A, 3, pl. 7. (Holotype: ANSP 73687).

Paratype: USNM 92763 (1, 104 mm). Caribbean; southeast of Jamaica (Albatross Bank); 17°43'40"N, 75°38'25"W; 52 fm (95 m); 29 Feb 1884; *Albatross* 2136.

Status: Synonym of *Kaupichthys hyoproroides* (Strömman, 1896) (Böhlke and Smith, 1968:28).

Kaupichthys atronasmus Schultz in Schultz et al., 1953:65, fig. 14.

Holotype: USNM 141260 (93 mm, vertebrae 9/29/114). Pacific, Marshall Is.; Rongelap Atoll, Rongelap Id., north end, lagoon coral head; 18 ft (5 m); 25 Jul 1946; Brock, V.E., Herald, E.S., and Kohler, T.F.; S-46-286.

Paratype: USNM 141696 (1, 54 mm). Pacific, Marshall Is.; Bikini Atoll, Namu Id., lagoon reef; 6 Aug 1947; Schultz, L.P., Brock, V.E., and Hiatt, R.W.; S-46-508.

Status: Valid.

Kaupichthys brachychirus Schultz in Schultz et al., 1953:67, fig. 15.

Holotype: USNM 141261 (128 mm, vertebrae 10/29/108). Pacific, Marshall Is.; Bikini Atoll, 0.25 mi (0.4 km) off Amen Id. in lagoon; 30 ft (9 m); 4 Aug 1946; Herald, E.S., Brock, V.E., and Kohler, T.F.; S-46-307.

Paratypes: USNM 141262 (2, 100–111 mm). Same data as holotype.

USNM 141263 (1, 93 mm). Pacific, Marshall Is.; Bikini Atoll, coral heads at eastern end of lagoon; 20–25 ft (6–8 m); 26 Mar 1946; Schultz, L.P., and Brock, V.E.; S-46-42.

USNM 141264 (1, 86 mm). Pacific, Marshall Is.; Bikini Atoll, Romuk Id., ocean reef; 1 Apr 1946; Schultz, L.P.; S-46-47.

USNM 141265 (7, 78–107 mm). Pacific, Marshall Is.; Eniwetok Atoll, Teiteiripucchi Id., lagoon reef; 1 Jun 1946; Schultz, L.P.; S-46-197.

USNM 141266 (1, 115 mm). Pacific, Marshall Is.; Rongelap Atoll, west side Naen Id., lagoon reef; 30 Jul

1946; Herald, E.S.; S-46-302.

USNM 141267 (4, 86–96 mm). Pacific, Marshall Is.; Rongerik Atoll, Bock Id., non-isolated tidal pool on ocean reef; 24 Apr 1946; Brock, V.E., and Marr, J.C.; S-46-113.

Status: Valid.

Kaupichthys diodontus Schultz, 1943:50, fig. 5i, pl. 6.

Holotype: USNM 115980 (138 mm, vertebrae 9/26/122). Pacific, Samoa Is.; Tau Id., reef at Siulagi Pt.; 27 Jun 1939; Schultz, L.P.; 880-934.

Status: Considered a synonym of *Kaupichthys hyoproroides* (Strömman, 1896) by Böhlke and Smith (1968:28), but studies in progress by K.A. Tighe (pers. comm.) suggest that the Indo-Pacific *diodontus* may be specifically distinct from the Atlantic *hyoproroides*.

Remarks: One paratype, formerly USNM 115981, 92 mm TL, exchanged to MCZ, now MCZ 37284.

Kaupichthys nuchalis Böhlke, 1967:95, fig. 2.

(Holotype: ANSP 106376).

Paratypes: USNM 198669 (1, 68 mm). Caribbean, Martinique; 14°53'N, 61°04'W; 40 fm (73 m); 10 Sep 1964; *Oregon* 5002.

USNM 198683 (1, 100 mm). Caribbean, Grenada; 11°54'30"N, 61°49'W; 21 fm (38 m); 26 Sep 1964; *Oregon* 5042.

USNM 199284 (2, 69–135 mm). Caribbean, Dominica; Soufriere Bay at Scotts Head, 200 ft (61 m) from shore; 30–45 ft (9–14 m); 15 Nov 1964; Springer, V.G., Reckeweg, R.H., and Blatcher, R.B.; 1400–1600 hr; VGS 64-29.

Status: Valid.

COLOCONGRIDAE

Coloconger cadenati Kanazawa, 1961c:111.

(Holotype: MNHN 1961-302, formerly IFAN 59-339).

Paratype: USNM 177890 (1, 490 mm). Atlantic, Sénégal; French West Africa, Sénégal, Sub fosse Kayar; 450–500 m; 6–12 Feb 1959; *G. Treca*; original no. IFAN 59-379.

Status: Valid.

Coloconger meadi Kanazawa, 1957:234, fig. 1.

Holotype: USNM 157926 (282 mm, vertebrae 14/76/~149). Gulf of Mexico, Dry Tortugas; 24°16'N, 83°22'W; 375 fm (686 m); 16 Apr 1954; *Oregon* 1019.

Paratype: USNM 157927 (1, 145 mm). Same data as holotype.

Status: Valid.

Coloconger scholesi Chan, 1967:99, figs. 1–11.

(Holotype: BMNH 1966-8-2-1).

Paratype: USNM 200650 (1, 410 mm). Pacific; South China

Sea, about 270 mi (435 km) north of Kuching, Sarawak, Malaysia; 6°01'48"N, 109°57'24"E; 456–450 fm (834–824 m); 5 Nov 1964; *Cape Mary* cr. 7-64, sta 32; Agassiz trawl.

Status: Valid.

CONGRIDAE

Acromycter atlanticus Smith, 1989c:557, figs. 587–588.

Holotype: USNM 158882 (285 mm TL; vertebrae 14/38/171). Caribbean, Nicaragua; 13°34'N, 81°53'W; 275 fm (503 m); 13 Sep 1957; *Oregon* 1922.

Paratypes: USNM 93460 (2, 200–227 mm). Atlantic, Puerto Rico; off Fungy Bowl, N of Culebra Id.; 18°32'30"N, 65°18'30"W; 350 fm (640 m); 26 Feb 1933; *Caroline* 84; TT-447, TT-448.

USNM 158877 (1, 260 mm). Caribbean, Nicaragua; NE of Tyra Cays; 13°22'N, 82°04'W; 300 fm (549 m); 13 Sep 1957; *Oregon* 1929.

USNM 197131 (1, 295 mm). Straits of Florida, off Florida Keys; 24°13'N, 81°24'W; 325 fm (595 m); 28 Oct 1960; *Silver Bay* 2421.

Status: Valid.

Ariosoma coquettei Smith and Kanazawa, 1977:533, fig. 4.

(Holotype: ANSP 134203).

Paratype: USNM 158917 (1, 185 mm). Atlantic, Suriname; 6°50'N, 55°24'W; 29 fm (53 m); 20 Jul 1957; *Coquette* 332.

Status: Valid.

Ariosoma selenops Reid, 1934:4, fig. 1.

Holotype: USNM 93310 (female, 475 mm, vertebrae 11/58/169). Caribbean, Virgin Is.; due north of Tobago Id.; 18°45'40"N, 64°48'00"W; 190–300 fm (348–549 m); 4 Mar 1933; *Caroline* 101; Bartsch, P.; TT-653.

Paratypes: USNM 93311 (male, 414 mm). Caribbean, Virgin Is.; due north of Tobago Id.; 18°38'45"N, 64°52'45"W to 18°40'15"N, 64°50'15"W; 100–300 fm (183–549 m); 4 Mar 1933; *Caroline* 100; Bartsch, P.; TT-639.

USNM 93312 (1, 343 mm). Same data as USNM 93311; TT-638.

Status: Valid.

Arisoma [sic] *brachyrhynchus* Fowler, 1934:269, fig. 30.

Holotype: USNM 92357 (330 mm, vertebrae 19/55/166). Pacific, Philippine Is.; southern Mindanao, eastern Illana Bay, Utara Pt., Bongo Id., N 76° W, 2.80 mi (4.5 km); 7°21'45"N, 124°07'15"E; 158 fm (289 m); 22 May 1908; *Albatross* 5256; 0954 hr; TT-5879.

Paratype: USNM 135121 (1, 268 mm). Pacific, Philippine Is.; Gulf of Davao, Dumalag Id. (S.), S 78° W, 3.8 mi (6.1 km); 7°02'00"N, 125°38'45"E; 135 fm (247 m); 18 May 1908; *Albatross* 5247; 0908 hr; LT-1884.

Status: Valid as *Parabathymyrus brachyrhynchus* (Fowler, 1934). See Smith and Kanazawa (1977:532).

Bathycongrus bleekeri Fowler, 1934:272.

Holotype: USNM 92353 (80 mm, vertebrae 7/28/105+). Pacific, Philippine Is.; southern Mindanao, eastern Illana Bay, Utara Pt., Bongo Id., N 88° W, 7.70 mi (12.4 km); 7°22'12"N, 124°12'15"E; 28 fm (40 m); 22 May 1908; *Albatross* 5257; 1011 hr.

Status: Uncertain.

Remarks: A tag in the jar reads "d.5557 May 22–08," but *Albatross* station 5557 was made on 18 Sep 1909; station 5257 was made on 22 May 1908, and the depth and gear are slightly more realistic than for 5557; 5257 is accepted here, although with some doubt.

Bathycongrus megalops Fowler, 1934:270, fig. 31.

Holotype: USNM 92345 (320 mm, vertebrae 10/35/144+). Pacific, Philippine Is.; between Siquijor and Bohol Ids.: Balicasag Id. (C), N 14° W, 8.2 mi (13.2 km); 9°22'30"N, 123°42'40"E; 392 fm (717 m); 11 Aug 1909; *Albatross* 5527; 1338 hr.

Paratype: USNM 93295 (1, 96 mm). Pacific, Philippine Is.; Apo Id. (C), S 46° W, 8.7 mi (14.0 km); 9°11'00"N, 123°23'00"E; 254 fm (465 m); 19 Aug 1909; *Albatross* 5537; 1539 hr; LT-4148.

Status: Uncertain.

Bathycongrus stimpsoni Fowler, 1934:270, fig. 32.

Holotype: USNM 92344 (670 mm, vertebrae 9/35/160). Pacific, Philippine Is.; between Leyte and Mindanao, Diuata Pt. (N), N 74° W, 4.2 mi (6.8 km); 9°06'30"N, 125°18'40"E; 678 fm (1241 m); 02 Aug 1909; *Albatross* 5494; 0917 hr; TT-9191.

Status: Uncertain.

Conger caudicula Bean in Goode and Bean, 1882:435.

Holotype: USNM 30709 (325 mm, vertebrae 10/40/120). Gulf of Mexico, Florida; Pensacola; 1882; Stearns, S.

Status: A species of *Paraconger*, but the synonymy is uncertain. Smith (1989c:507) showed that two species of *Paraconger* may be present in the Gulf of Mexico, one of which is probably identical to the Caribbean *Paraconger caudilimbatus* (Poey, 1867). Further study is needed to determine whether *caudicula* is a valid species or a synonym of *caudilimbatus*.

Conger jordani Kanazawa, 1958:250, fig. 4, pl. 1G.

Holotype: USNM 71844 (606 mm, vertebrae 14/39/144). Pacific, Japan; Misaki, Japan; 1906; *Albatross*; Jordan, D.S., Snyder, J.O., and Sindo, M.; TT-0537.

Paratypes: USNM 26250 (1, 592 mm). Pacific, Japan; Japan; Morse, E.S.; antorbitals removed and dried.

USNM 49866 (1, 383 mm). Pacific, Japan; Misaki, Sagami, Japan; 1900; Jordan, D.S., and Snyder, J.O.

Originally a paratype of *Leptocephalus erebennus* Jordan and Snyder, 1901, later reidentified and made a paratype of *Conger jordani*.

USNM 71715 (1, 496 mm). Same data as holotype; TT-0538.

USNM 71716 (1, 450 mm). Same data as holotype; TT-0100.

USNM 71819 (1, 634 mm). Pacific, Ryukyu Is.; Okinawa, Japan; 1906; *Albatross*; Snyder, J.O., and Sindo, M.; TT-0265.

USNM 71843 (1, 480 mm). Same data as holotype; TT-0536.

USNM 71845 (1, 579 mm). Same data as holotype; TT-0541.

USNM 71963 (1, 563 mm). Same data as holotype; TT-0547.

USNM 72003 (1, 633 mm). Same data as holotype; TT-0264.

USNM 163467 (1, 505 mm). Pacific, Japan; Japan, Kagoshima; 19 Aug 1906; *Albatross*; TT-3849.

Status: Uncertain. Asano (1962:86) differed with some of Kanazawa's (1958) conclusions regarding the species composition of *Conger* and suggested that "some of the specimens of *C. jordani* ... at least to be identical with *C. japonicus*."

Remarks: One paratype, formerly USNM 71818 (596 mm), exchanged to FMNH, Jan 1959.

Conger macrocephalus Kanazawa, 1958:254, pl. 1M.

Holotype: USNM 164334 (803 mm, vertebrae 15/36/136). Pacific, Philippine Is.; Luzon, Verde Id. Passage, Malabrigo Lt., N 81° E, 8 mi (12.9 km); 13°34'37"N, 121°07'30"E; ~180 fm (329 m); 22 Feb 1909; *Albatross* 5367; 1710 hr; TT-7991; antorbital removed and dried.

Status: Uncertain.

Conger oligoporus Kanazawa, 1958:251, pls. 1B, 3B.

Holotype: USNM 162512 (237 mm, vertebrae 15/36/139). Pacific, Hawaiian Is.; Oahu, Honolulu, 200 yds (183 m) W of Diamond Head lighthouse, edge of cut in reef, poison stn.; 5–20 ft (1.5–6.1 m); 22 Dec 1951; Gosline, W.A., and class; originally four specimens, three removed to USNM 163567 as paratypes; original no. UH 1506.

Paratypes: USNM 163567 (3, 194–245 mm). Same data as holotype; removed from USNM 162512.

Status: Valid.

Conger philippinus Kanazawa, 1958:255, pl. 1K.

Holotype: USNM 134969 (234 mm, vertebrae 17/38/132). Pacific, Philippine Is.; Philippines, Cebu market; 22 Mar 1909; *Albatross*; LT-22984; antorbitals removed, stained, and dried.

Status: Uncertain.

Congermuraena aequorea Gilbert and Cramer, 1897:405, pl. 37.

Holotype: USNM 47696 (455 mm, vertebrae 10/45/177). Pacific, Hawaiian Is.; Kaiwi Channel, Hawaiian Is.; 21°12'00"N, 157°38'30"W; 375 fm (686 m); 6 Dec 1891; *Albatross* 3474; 1 *Acromycter alcocki* removed to USNM 317228.

Status: Valid as *Bathycongrus aequoreus* (Gilbert and Cramer, 1897). Jordan and Hubbs (1925) made this the type species of their new genus *Congrina*. *Congrina* subsequently was shown to be a synonym of *Rhechias* Jordan, 1921 (Smith, 1970:366; Smith and Kanazawa, 1977:538), which in turn is a junior synonym of *Bathycongrus* Ogilby, 1898 (Castle, in press).

Congermuraena caudalis Garman, 1899:305.

Syntypes: USNM 57898 (1, 258+ mm). Pacific, Panama; 7°09'45"N, 80°50'00"W; 322 fm (589 m); 23 Feb 1891; *Albatross* 3354.

USNM 153600 (1, 286+ mm). Same data as USNM 57898; removed from MCZ 28460.

Status: Synonym of "*Ophisoma*" *prorigerum* Gilbert, 1891 (pers. obs.).

Remarks: A handwritten note in the jar with USNM 153600 refers to a holotype, but Garman's specimens are considered here to be syntypes. A note in the jar with USNM 57898 gives the station number with the wrong position and date.

Congermuraena flava Goode and Bean, 1896:138, fig. 159.

Lectotype: USNM 44612 (239 mm TL, 82 mm preanal, vertebrae 7/33/123+). Caribbean, Trinidad and Tobago; 10°37'40"N, 61°42'40"W to 10°37'00"N, 61°44'22"W; 31–34 fm (57–62 m); 3 Feb 1884; *Albatross* 2121 and 2122; 1 paralectotype removed to USNM 152573.

Paralectotypes: USNM 44617 (1, 202 mm). Now holotype of *Congrina gracilior* Ginsburg, 1951.

USNM 152573 (1, 210+ mm). Same data as lectotype; removed from USNM 44612.

Status: Valid as *Rhynchoconger flavus* (Goode and Bean, 1896). See Smith (1989c:529).

Remarks: Lectotype designated by Jordan and Evermann (1900:3244). Unaware of Jordan and Evermann's action, Ginsburg (1951:445) selected the same specimen as lectotype. See remarks under *Congrina gracilior*.

Congrellus howersi Jenkins, 1903:422, fig. 1.

Holotype: USNM 50689 (276 mm, vertebrae 8/55/145). Pacific, Hawaiian Is.; Honolulu; 1889; Jenkins, O.P.; TT-254.

Paratypes: USNM 126007 (2, 205–243 mm). Same data as

holotype; USBF no. 1174; original nos. 2046, 2049.

Status: Synonym of *Ariosoma marginatum* (Vaillant and Sauvage, 1875) (Castle, 1980:159).

Congrellus gilberti Ogilby, 1898:288.

Lectotype: USNM 44293 (138 mm, vertebrae 8/54/136). Pacific, Panama; 8°06'30"N, 78°51'00"W; 33 fm (60 m); 5 Mar 1888; *Albatross* 2797.

Paralectotypes: USNM 30930 (1, 180 mm). Pacific, Mexico; nr. Cape St. Lucas; Belding, L.; received 16 May 1882.

USNM 125091 (2, 112–128 mm). Same data as lectotype; USBF no. 332.

Status: Valid as *Ariosoma gilberti* (Ogilby, 1898). See Rosenblatt (1958).

Remarks: This species is based on four specimens reported by Gilbert (1891a:349) as "*Ophisoma balearicum?*" Only three are accounted for at the Smithsonian, and none were mentioned in Böhlke's (1953) type catalog of the Stanford collection. The lectotype was designated by Rosenblatt (1958:52).

Congrellus meeki Jordan and Snyder, 1900:347, pl. 11.

Holotype: USNM 49397 (530 mm, vertebrae 10/60/151). Pacific, Japan; Bay of Tokio [Tokyo], Japan; 1896; *Albatross*; TT-1971.

Status: Valid as *Ariosoma meeki* (Jordan and Snyder, 1900). See Smith (1989c:495).

Congrhynchus talabonoides Fowler, 1934:272, fig. 33.

Holotype: USNM 92350 (292 mm, vertebrae 8/37/134+?). Pacific, Philippine Is.; northern Mindanao and vicinity, Macabalan Pt. Lt. (Mindanao), S 35° E, 8.2 mi (13.2 km); 8°37'37"N, 124°35'E; ~214 fm (392 m); 4 Aug 1909; *Albatross* 5502; 1528 hr; LT-2634.

Paratypes: USNM 93347 (1, 300 mm). Pacific, Philippine Is.; between Burias and Luzon, Anima Sola Id., N 44° W, 29.50 mi (47.5 km); 12°52'00"N, 123°23'30"E; 215 fm (393 m); 22 Apr 1908; *Albatross* 5216; 0836 hr; TT-5597.

USNM 93348 (1, 118 mm). Pacific, Philippine Is.; Gulf of Davao, Dumalag Id. (S.), S 78° W, 3.8 mi (6.2 km); 7°02'00"N, 125°38'45"E; 135 fm (247 m); 18 May 1908; *Albatross* 5247.

Status: Valid.

Congrina gracilior Ginsburg, 1951:445, fig. 3.

Holotype: USNM 44617 (202 mm, vertebrae 7/29/166+). Gulf of Mexico, Florida; off Cape San Blas, Florida; 28°36'N, 85°33'30"W; 111 fm (203 m); 14 Mar 1885; *Albatross* 2402; also a paralectotype of *Conger muraena flava* Goode and Bean, 1896.

Status: Valid as *Rhynchoconger gracilior* (Ginsburg, 1951). See Smith (1989c:526).

Remarks: The original type series of *Conger muraena flava* Goode and Bean contained two species, divided as follows (see Goode and Bean, 1896:139): (1) *Albatross* stations 2121 and 2122, USNM 44612 and USNM 152573; (2) *Blake* 36, Agassiz no. CCLXIV, MCZ 28080 and MCZ 37165; (3) *Albatross* 2402, USNM 44617. USNM 44612 and 152573 are now lectotype and paralectotype, respectively, of *Conger muraena flava*. The remaining specimens, although still paralectotypes of *C. flava*, are all *gracilior*. MCZ 28080, which is listed by Ginsburg (1951:445) as *flava* but in fact is *gracilior*, is not a paratype. MCZ 37165 is a paratype of *gracilior*, but it is lost. USNM 44617 was selected by Ginsburg (1951:445) as the holotype of *gracilior*.

Congrina thysanochila Reid, 1934:7, fig. 2.

Holotype: USNM 93434 (250 mm, vertebrae 8/34/142+?). Atlantic, Puerto Rico; off Punta Cerro Gordo, north coast of Puerto Rico; 18°32'15"N, 66°17'45"W to 18°32'00"N, 66°21'15"W; 260–360 fm (476–659 m); 4 Feb 1933; *Caroline* 23.

Paratype: USNM 93466 (1, 225 mm). Caribbean, Virgin Is.; due north of Tobago Id.; 18°38'45"N, 64°52'45"W to 18°40'15"N, 64°50'15"W; 100–300 fm (183–549 m); 4 Mar 1933; *Caroline* 100; TT-640.

Status: Valid as *Bathycongrus thysanochilus* (Reid, 1934). See Castle (in press).

Remarks: *Congrina* Jordan and Hubbs, 1925, was shown to be a junior synonym of *Rhechias* Jordan, 1921 (Smith, 1970:366; Smith and Kanazawa, 1977:538). Castle (in press) now shows that *Rhechias* is a junior synonym of *Bathycongrus* Ogilby, 1898.

Gnathophis bathytopos Smith and Kanazawa, 1977:535, fig. 6.

Holotype: USNM 190597 (female, 340 mm, vertebrae 9/34/132). Gulf of Mexico, Florida; NW of Dry Tortugas; 25°13'N, 84°15'W; 100 fm (183 m); 9–10 Jun 1959; *Silver Bay* 1200; two paratypes removed to USNM 213558.

Paratypes: USNM 197113 (2, 218–240 mm). Caribbean, Florida; 25°29'N, 79°19'W; 200 fm (366 m); 9 Nov 1960; *Silver Bay* 2479.

USNM 213557 (1, 339 mm). Caribbean, Mexico; 21°54'N, 86°28'W; 130 fm (238 m); 22 Jan 1967; *Oregon* 6400.

USNM 213558 (2, 314–330 mm). Same data as holotype; removed from USNM 190597.

Status: Valid.

Gnathophis bracheatopos Smith and Kanazawa, 1977:534, fig. 5.

Holotype: USNM 163523 (male, 345 mm, vertebrae 7/31/126). Gulf of Mexico, Florida; 28°50'N, 85°06'W; 35

- fm (64 m); 7 Mar 1954; *Oregon* 896.
 Paratypes: USNM 163485 (2, 198–318 mm). Gulf of Mexico, Dry Tortugas; 25°35'N, 83°42'W; 60 fm (110 m); 26 Jun 1950; *Oregon* 35.
 USNM 197128 (1, 269 mm). Caribbean, Florida; 25°04'N, 80°17'W; 30–35 fm (55–64 m); 25 Oct 1960; *Silver Bay* 2357.
 Status: Valid.
- Gorgasia barnesi* Robison and Lancraft, 1984:404, figs. 1–2. (Holotype: LACM 37338-1).
 Paratypes: USNM 257771 (4, 711–885 mm). Pacific, Indonesia; Banda Is.; 4°30'S, 129°52'E; 6 m; 25 May 1975; *Alpha helix*; Robison, B.H., and Barnes, A.T.
 Status: Valid.
- Gorgasia hawaiiensis* Randall and Chess, 1979:19, figs. 1–3. (Holotype: BPBM 21074).
 Paratype: USNM 218333 (1, 548 mm). Pacific, Hawaiian Is.; Kona Coast of Hawaii, 100 m north of Waawaa Point (south of Puako); 18 m; 10 Aug 1969; Randall, J.E., and Chess, J.R.
 Status: Valid.
- Gorgasia japonica* Abe, Miki, and Asai, 1977:2. (Holotype: ZIUT 53977).
 Paratype: USNM 218468 (1, 877 mm). Pacific, Japan; off Utsugi, Kojima, near Hachijo Id.; 10 Jul 1976; Miki, M., and Asai, M.
 Status: Valid.
- Gorgasia preclara* Böhlke and Randall, 1981:379, figs. 1E, 4C, 5 lower left, 8. (Holotype: BPBM 21012).
 Paratype: USNM 221381 (1, 328.5 mm). Pacific, Philippine Is.; Sumilon Id. (E of S end of Cebu Id.); 24–29 m; 26 Aug 1977; Randall, J.E.; from BPBM 21013.
 Status: Valid.
- Gorgasia punctata* Meek and Hildebrand, 1923:133, pl. 6. Holotype: USNM 82222 (500 mm, vertebrae 9/52/155). Pacific, Panama; Chame Point; 26 Jul 1913; Tweedlie, R.
 Status: Valid.
- Heteroconger cobra* Böhlke and Randall, 1981:368, figs. 1A,B, 2, 3, 4A. (Holotype: ANSP 142707).
 Paratypes: USNM 216167 (2, 323–331 mm). Pacific, Solomon Is.; Guadalcanal, near wreck of Japanese transport ship 7 mi (11.3 km) west of Honiara; 100–120 ft (30.5–36.7 m); 7 Jul 1973; Randall, J.E., Allen, G.R., and McCoy, M.
 Status: Valid.
- Heteroconger lentiginosus* Böhlke and Randall, 1981:373, figs. 1C, 5 upper, 6. (Holotype: BPBM 12591).
 Paratype: USNM 221379 (1, 185 mm). Pacific, Marquesas Is.; Tahuata, off point at south end of Vaitahu Bay; 115–135 ft (35.1–41.2 m); 23 Apr 1971; Randall, J.E. et al.; formerly BPBM 11921.
 Status: Valid.
- Heteroconger perissodon* Böhlke and Randall, 1981:377, figs. 1B, 4D, 5 right, 7. (Holotype: BPBM 21017).
 Paratype: USNM 221380 (1, 321.5 mm). Pacific, Indonesia; Molucca Is., Ambon, Poka, NW side of Ambon Bay (NE side of point at oil company recreation site); 1 m; 8 Feb 1975; Randall, J.E. et al.; from BPBM 18543.
 Status: Valid.
- Japonoconger caribbeus* Smith and Kanazawa, 1977:541, fig. 11. Holotype: USNM 198685 (female, 500 mm, vertebrae 8/39/164). Caribbean, Colombia; 11°09'N, 74°26'30"W; 180–190 fm (329–348 m); 19 May 1964; *Oregon* 4859.
 Paratypes: USNM 198666 (1, 455 mm). Caribbean, Venezuela; 11°10'N, 68°08'W; 220 fm (403 m); 10 Nov 1963; *Oregon* 4451.
 USNM 198667 (1, 425 mm). Caribbean, Colombia; off Cape Lavela; 12°28'N, 72°26'W; 300 fm (549 m); 2 Jun 1964; *Oregon* 4925.
 USNM 198671 (1, 406 mm). Caribbean, Venezuela; 11°46'N, 69°17'W; 240 fm (439 m); 5 Oct 1963; *Oregon* 4425.
 USNM 198677 (3, 430–502 mm). Caribbean, Colombia; 12°16'N, 72°40'W; 200 fm (366 m); 2 Jun 1964; *Oregon* 4922.
 Status: Valid.
- Leptocephalus amphioxus* Eigenmann and Kennedy, 1902:86, fig. 4. Holotype: USNM 49763 (58 mm, myomeres –/108/127). Atlantic; 38°25'N, 72°40'W; 1883–1887; *Albatross*; original length 65 mm SL; head separated from body.
 Status: Smith (1989e:735) showed that this is a larva of *Paraconger*. The location and the relatively high myomere count of the holotype indicate that it is probably a synonym of *Paraconger caudilimbatus* (Poey, 1867).
- Leptocephalus discus* Eigenmann and Kennedy, 1902:91, fig. 12. Syntypes: USNM 49761 (2, 65–67 mm, myomeres 23/79/~162, 22/76/~162). Atlantic, Bahama Is.; San Salvador (electric light); surface; Mar–May 1885;

Albatross; original lengths 69–71 mm SL.

Status: This is the larva of the Caribbean garden eel currently known as *Heteroconger halis* (Böhlke) (pers. obs.). As the specific name *discus* (1902) has priority over *halis* (1957), the species must be known as *Heteroconger discus* (Eigenmann and Kennedy, 1902).

Leptocephalus erebennus Jordan and Snyder, 1901:849, fig. 3. (Holotype: CAS-SU 6466).

Paratype: USNM 49866 (1, 383 mm). Pacific, Japan; Misaki, Sagami; Jordan, D.S., and Snyder, J.O.; reidentified and made a paratype of *Conger jordani* Kanazawa, 1958.

Status: Uncertain. Kanazawa (1958) recognized it as valid, but Asano (1962:86) suggested that it might be a synonym of *Conger japonicus* Bleeker, 1879.

Leptocephalus flavirostris Snyder, 1908:93.

Holotype: USNM 62230 (370 mm, vertebrae 7/53/143). Pacific, Japan; Misaki; *Albatross*.

Status: Uncertain. Asano (1962:76) treated this as a synonym of *Ariosoma anagoides* (Bleeker, 1864), but without examining the relevant types.

Leptocephalus microphthalmus Beebe and Tee Van, 1928:58, 1 fig.

Holotype: USNM 170906 (74 mm, myomeres 22/70/~127). Caribbean, Hispaniola; Haiti, surface at night; 19 Mar 1927; Beebe, W., and Tee Van, J.; specimen no. 7080, collected on surface at night light; present length 54 mm SL.

Status: Castle (1969:17, 47) considered this the larva of *Ariosoma balearicum*, but it is not. The total myomere count and the pigment on the myosepta just below the midlateral line are similar to those of *A. balearicum*, but other characters differ. The specimen is in early metamorphosis; even if the original length of 74 mm is correct, this is much smaller than the size at which *A. balearicum* metamorphoses (well over 100 mm). The caudal fin is relatively long and well developed; in *A. balearicum* at a similar stage the caudal fin would be undergoing reduction. The specimen most resembles the leptocephalus described by Smith (1989e:741) as "Genus A species A." Smith suggested that the latter might be a heterocongrine, but the well-developed caudal fin on the present specimen indicates clearly that it is not a heterocongrine. Its identity remains unknown.

Leptocephalus retrotinctus Jordan and Snyder, 1901:853, fig. 6.

(Holotype: CAS-SU 6470).

Paratype: USNM 49974 (1, 247 mm). Pacific, Japan; Tokyo

market; Jordan, D.S., and Snyder, J.O.

Status: Valid as *Bathycongrus retrotinctus* (Jordan and Snyder, 1901). See Castle (in press).

Remarks: This species was assigned by Jordan and Hubbs (1925:197) to their new genus *Congrina*. *Congrina* subsequently was synonymized with *Rechias* Jordan, 1921 (Smith, 1970:366; Smith and Kanazawa, 1977:538), and *Rechias* in turn has been synonymized with *Bathycongrus* Ogilby, 1898 (Castle, in press).

Leptocephalus rex Eigenmann and Kennedy, 1902:86, fig. 3.

Holotype: USNM 49765 (1, 98 mm). Atlantic, Bahama Is.; New Providence; Mar–May 1886; *Albatross*; surface, electric light; # 1, bot. # 7; metamorphic, damaged; original length 105 mm SL.

Status: Metamorphic larva of *Ariosoma balearicum* (De-laroche, 1809). See Smith (1989c:496).

Remarks: Eigenmann and Kennedy listed two specimens for this species, one of 87 mm from San Salvador and one of 105 mm from New Providence. They then stated, however, that "the first specimen may represent a later phase of the species called *amphioxus*." By casting doubt on the identity of this specimen, they removed it from the type series (ICZN, Article 72, b,i).

Macrocephenchelys brachialis Fowler, 1934:277, fig. 36.

Holotype: USNM 92347 (489 mm, vertebrae 9/36/179). Pacific, Indonesia; Onkona Pt., S 5° W, 11 mi (17.7 km); 2°56'00"S, 118°47'30"E; 367 fm (672 m); 29 Dec 1909; *Albatross* 5667; LT-3808.

Paratype: USNM 93294 (1, 440 mm; cleared and stained). Pacific, Indonesia; Sibuko Bay, Borneo and vicinity, Sipadan Id. (M) west, 9.4 mi (15.1 km); 4°06'50"N, 118°47'20"E; 347 fm (635 m); 28 Sep 1909; *Albatross* 5586; specimen dissected, pieces in vials of glycerin; original length 440 mm; original no. P.2993.

Status: Valid.

Macrocephenchelys soela Castle, 1990:123, figs. 3–4.

(Holotype: CSIRO H1668-07).

Paratype: USNM 307832 (female, 298 mm). Pacific, Australia; south of Saumarez Reef, Saumarez Plateau area, Queensland, Australia; 22°35'03"S, 153°46'07"E to 22°36'03"S, 153°50'01"E; 345–350 m; 17 Nov 1985; *Soela* SO6/85/04; 0220 hr; specimen first designated as CSIRO H1668-01-03 in the CSIRO Hobart catalog but now is referred to as CSIRO H1668-06.

Status: Apparently a synonym of "*Rhynchoconger*" *brevirostris* Chen and Weng, 1967 (Castle, pers. comm., 1994).

Ophisoma macrurum Gilbert, 1891a:351.

Holotype: USNM 44294 (238 mm, vertebrae 10/34/122+).

Pacific, Mexico; Gulf of California; 29°19'N, 112°50'W; 145 fm (265 m); 24 Mar 1889; *Albatross* 3015.

Status: Valid as *Bathycongrus macrurus* (Gilbert, 1891). See Ogilby (1898:292).

Ophisoma nitens Jordan and Bollman, 1890:153.

Holotype: USNM 44395 (202 mm, vertebrae 7/32/152+). Pacific, Panama; 8°47'00"N, 79°29'30"W; 14 fm (26 m); 30 Mar 1888; *Albatross* 2801.

Status: Valid as *Rhynchoconger nitens* (Jordan and Bollman, 1890). See Smith (1989c:526).

Ophisoma prorigerum Gilbert, 1891a:350.

Holotype: USNM 44295 (255 mm, vertebrae 9/38/147+). Pacific, Ecuador; 0°37'00"S, 81°00'00"W; 401 fm (734 m); 2 Mar 1888; *Albatross* 2792.

Status: The species is valid, but further studies are needed to assign it to a genus. *Ophisoma* is a synonym of *Ariosoma*, and the present species does not belong to *Ariosoma*.

Parabathymyrus oregoni Smith and Kanazawa, 1977:532, fig. 2.

Holotype: USNM 158900 (female, 322 mm, vertebrae 11/51/149). Atlantic, French Guiana; 7°15'N, 53°25'W; 115 fm (210 m); 9 Nov 1957; *Oregon* 2022.

Paratypes: USNM 158883 (4, 290–307 mm). Same data as holotype; 1 specimen skeletonized.

USNM 158898 (4, 274–330 mm). Atlantic, French Guiana; 7°18'N, 53°32'W; 100 fm (183 m); 8 Nov 1957; *Oregon* 2021.

USNM 158899 (1, 261 mm). Atlantic, Venezuela; 9°36'N, 59°44'W; 80 fm (146 m); 4 Nov 1957; *Oregon* 1987.

USNM 190466 (1, 280 mm). Caribbean, Puerto Rico; 18°26'30"N, 67°12'W; 200 fm (366 m); 6 Oct 1959; *Oregon* 2656.

Status: Valid.

Paraconger californiensis Kanazawa, 1961a:10, figs. 2–3, pl. 2A.

Holotype: USNM 177696 (505 mm, vertebrae 12/43/137). Pacific, Mexico; Sinaloa, Gulf of California, 25 mi (40 km) SE of Bahia Topolobampo; 22–27 fm (40–49 m); 7–13 Jun 1956; Baldwin, W.; W56-118.

Paratypes: USNM 177697 (2, 460–520 mm). Same data as holotype; moved from isopropyl to ethyl alcohol 8 Aug 1991.

USNM 195854 (1, 88 mm). Pacific, Mexico; Sonora, Gulf of California, about 100 yds (92 m) SE of Estero Soldado; 28 Jan 1952; Walker, B.W., and party; W52-14.

Status: Valid.

Paraconger guianensis Kanazawa, 1961a:8, pl. 2B,C.

Holotype: USNM 158902 (470 mm, vertebrae 15/41/132). Atlantic, French Guiana; 5°52'N, 52°03'W; 40 fm (73 m); 12 Nov 1957; *Oregon* 2044.

Paratypes: USNM 158901 (3, 286–418 mm). Atlantic, French Guiana; 5°39'N, 51°56'W; 37 fm (68 m); 12 Nov 1957; *Oregon* 2046.

Status: Valid.

Paraconger notialis Kanazawa, 1961a:9, pl. 2D.

(Holotype: MNHN 1961-301, formerly IFAN 839).

Paratype: USNM 177891 (1, 475 mm). Atlantic, Senegal; French West Africa, Senegal, Cap de Naze; 35–45 m; 30 Nov 1955; *G. Treca* 55-1532.

Status: Valid.

Paramyrus kellersi Fowler, 1932:1, fig. 1.

Holotype: USNM 91870 (60 mm, vertebrae 8?-/142+). Pacific, Tonga Is.; Niuafoou Id.; 17 Sep 1930; Kellers, H.C.

Status: A synonym of *Conger cinereus* Rüppell, 1828 (Kanazawa, 1961b:115).

Paraxenomystax bidentatus Reid, 1940:2, fig. 1.

Holotype: USNM 108444 (458 mm TL, vertebrae 7/35/~178). Caribbean, Virgin Is.; 18°36'00"N, 65°05'30"W to 18°37'15"N, 65°03'00"W; 270–330 fm (494–604 m); 3 Mar 1933; *Caroline* 96; TT-545.

Paratype: USNM 108445 (1, 354 mm). Atlantic, Puerto Rico; about 5 mi (8 km) off Punta Boca Juana; 18°33'45"N, 66°15'00"W; 360–600 fm (659–1098 m); 30 Jan 1933; *Caroline* 1; otter trawl; TT-15.

Status: Valid as *Xenomystax bidentatus* (Reid, 1940). See Smith (1989c:559).

Promyllantor alcocki Gilbert and Cramer, 1897:405, pl. 36, fig. 1.

Holotype: USNM 47724 (253 mm, vertebrae 13/41/~168). Pacific, Hawaiian Is.; 21°12'00"N, 157°49'00"W; 295 fm (540 m); 4 Dec 1891; *Albatross* 3472; four paratypes removed to USNM 195915.

Paratypes: USNM 195915 (3, 211–233 mm). Same data as holotype; originally four specimens, note in jar says "paratypes loaned to A.E. Parr"; one of these apparently was retained by Parr, and it now is cataloged as YPM 5569 (Moore and Boardman, 1991:10).

Status: Valid as *Acromycter alcocki* (Gilbert and Cramer, 1897). See Smith and Kanazawa (1977:542).

Remarks: Gilbert and Cramer gave the following specimen data: "Nine specimens, 7½ to 10¼ inches long, from station 3472; 295 fathoms. Type.—No. 47724, U.S.N.M." They further stated that the type was 10¼

inches long (260 mm). Of the five specimens originally contained in USNM 47724, the largest now measures 253 mm and clearly is the holotype. The remaining four specimens now are cataloged as USNM 195515 and YPM 5569. Böhlke (1953:49) listed three paratypes at Stanford University. All of these add up to eight specimens. The whereabouts of the ninth specimen is unknown.

Promyllantor schmitti Hildebrand in Longley and Hildebrand, 1940:226, fig. 1.

Holotype: USNM 107323 (280 mm, vertebrae 13/39/132). Gulf of Mexico; south of Tortugas, Florida; 300–350 fm (549–641 m); 23 Aug 1932; Schmitt, W.L.; 70–32.

Paratypes: USNM 116774 (5, 173–286 mm). Same data as holotype.

Status: Synonym of *Pseudoplichthys splendens* (Lea, 1913) (Smith, 1971:79).

Remarks: Hildebrand stated that there were five specimens in Longley's collection, but there are five in the paratype lot and one holotype, adding up to six in all. Hildebrand (1940:228) also mentioned USNM 73270, "which undoubtedly belongs to this species." That specimen is not considered a paratype here.

Rhechias armiger Jordan, 1921:644, fig. 1.

Holotype: USNM 84097 (~130 mm, vertebrae --/176). Pacific, Hawaiian Is.; ~3–4 mi (4.8–6.4 km) offshore from Alika lava flow, Dist. of Kona, west coast of island of Hawaii; 6 Oct 1919; Reinhardt, T.; dried.

Status: Synonym of *Bathycongrus aequoreus* (Gilbert and Cramer, 1897). See Smith (1970:366); see also "Remarks" under *Congermuraena aequorea*.

Rhechias bullisi Smith and Kanazawa, 1977:538, fig. 9.

Holotype: USNM 198768 (male, 493 mm, vertebrae 11/47/181). Caribbean, Colombia; off Cape Lavela; 12°16'N, 72°40'W; 200 fm (366 m); 2 Jun 1964; *Oregon* 4922.

Paratypes: USNM 158172 (1, 452 mm). Gulf of Mexico, Mexico; 19°14'N, 93°00'W; 225 fm (412 m); 15 May 1954; *Oregon* 1055.

USNM 158905 (2, 302–378 mm). Atlantic, Brazil; 2°04'N, 47°00'W; 125 fm (229 m); 17 Nov 1957; *Oregon* 2080.

USNM 158908 (1, 346 mm). Atlantic, French Guiana; 7°18'N, 53°32'W; 100 fm (183 m); 8 Nov 1957; *Oregon* 2021.

USNM 158911 (1, 418 mm). Atlantic, Suriname; 7°34'N, 54°50'W; 200 fm (366 m); 6 Nov 1957; *Oregon* 2005.

USNM 178994 (1, 522 mm). Gulf of Mexico, Florida; 27°54'N, 85°09'W; 200 fm (366 m); 4 Dec 1962; *Oregon* 4082.

USNM 179071 (2, 391–395 mm). Atlantic, Suriname;

7°34'N, 54°13'W; 200 fm (366 m); 24 Mar 1963; *Oregon* 4301.

USNM 185653 (1, 303 mm). Caribbean, Venezuela; 11°31'N, 62°24'W; 185–200 fm (339–366 m); 23 Sep 1958; *Oregon* 2351.

USNM 185654 (2, 464–507 mm). Atlantic, Suriname; 7°27'N, 54°32'W; 110 fm (201 m); 8–9 Sep 1958; *Oregon* 2290.

USNM 193594 (1, 495 mm). Caribbean, Panama; 9°03'N, 81°22'W; 200–220 fm (366–403 m); 31 May 1962; *Oregon* 3598.

USNM 193596 (2, 148–453 mm). Caribbean, Panama; 9°03'N, 81°18'W; 300 fm (549 m); 31 May 1962; *Oregon* 3600.

USNM 193612 (1, 446 mm). Caribbean, Panama; 09°18'N, 80°22'W; 125 fm (229 m); 29 May 1962; *Oregon* 3590.

USNM 198674 (1, 510 mm). Caribbean, Colombia; 11°09'30"N, 74°24'30"W; 170–180 fm (311–329 m); 16 May 1964; *Oregon* 4838.

USNM 198679 (1, 510 mm). Gulf of Mexico, Texas (note: station list gives longitude as 16°5", but this almost certainly is meant to read 16.5'); 26°30'N, 96°16'30"W; 250 fm (458 m); 24 Jan 1964; *Oregon* 4638.

USNM 198767 (1, 438 mm). Caribbean, Colombia; 10°24'N, 75°50'W; 190–195 fm (348–357 m); 24 May 1964; *Oregon* 4880.

USNM 198769 (1, 580 mm). Caribbean, Colombia; 11°50'N, 73°05'W; 175–190 fm (320–348 m); 31 May 1964; *Oregon* 4911.

USNM 198770 (1, 511 mm). Caribbean, Colombia; 11°09'N, 74°26'30"W; 180–195 fm (329–357 m); 19 May 1964; *Oregon* 4859.

Status: Valid as *Bathycongrus bullisi* (Smith and Kanazawa, 1977). See Castle (in press).

Remarks: See "Remarks" under *Congrina thysanochila*.

Rhechias polypora Smith and Kanazawa, 1977:540, fig. 10.

Holotype: USNM 197143 (male, 430 mm, vertebrae 14/51/191). Atlantic, Bahama Is.; 26°25'N, 79°01'W; 300 fm (549 m); 9 Nov 1960; *Silver Bay* 2483.

Paratype: USNM 157889 (1, 402 mm). Caribbean, Cuba; 22°55'N, 79°27'W; 240 fm (439 m); 15 Jul 1955; *Oregon* 1340.

Status: Valid as *Bathycongrus polyporus* (Smith and Kanazawa, 1977). See Castle (in press).

Remarks: Smith and Kanazawa (1977:540) stated that all three type specimens had regenerated tails. The holotype, however, appears intact and yielded a vertebral count of 191. See "Remarks" under *Congrina thysanochila*.

Silvesterina parvibranchialis Fowler, 1934:275, fig. 35.

Holotype: USNM 92346 (635 mm, vertebrae 9/48/189).

- Pacific, Indonesia; Buton Strait: North Id. (S) N 87° E, 10.2 mi (16.4 km); 5°35'00"S, 122°20'00"E; 559 fm (1023 m); 16 Dec 1909; *Albatross* 5648; 1629 hr; LT 10242.
- Paratypes: USNM 93370 (1, 520 mm). Pacific, Indonesia; Gulf of Boni: Olang Pt., N 61°W, 15.5 mi (25 km); 3°19'40"S, 120°36'30"E; 492 fm (900 m); 19 Dec 1909; *Albatross* 5657; 1108 hr; LT-10218.
- USNM 93371 (1, 585 mm). Pacific, Philippine Is.; Sogod Bay, southern Leyte Id., Limasaua Id. (E), S 2°E, 16.70 mi (26.9 km); 10°12'00"N, 125°04'10"E; 502 fm (919 m); 10 Apr 1908; *Albatross* 5202; 1107 hr; TT-5469.
- USNM 93372 (1, 495 mm). Pacific, Indonesia; Makyan Id. (S), N 67°W, 8.9 mi (14.3 km); 0°12'15"N, 127°29'30"E; 288 fm (527 m); 29 Nov 1909; *Albatross* 5624; 1058 hr; LT-10296.
- USNM 93373 (1, 610 mm). Pacific, Philippine Is.; between Siquijor and Bohol Ids., Balicasag Id. (C), N 14°W, 8.2 mi (13.2 km); 9°22'30"N, 123°42'40"E; 392 fm (717 m); 11 Aug 1909; *Albatross* 5527; 1338 hr; LT-10143.
- USNM 93374 (1, 598 mm). Pacific, Philippine Is.; northern Mindanao and vicinity, Camp Overton Lt., S 67°E; 10.3 mi (16.6 km); 8°16'45"N, 124°02'48"E; 505 fm (924 m); 7 Aug 1909; *Albatross* 5513; 1553 hr; LT-10171.
- USNM 93375 (1, 512 mm). Pacific, Philippine Is.; northern Mindanao and vicinity: Camp Overton Lt., S 80°E, 15.3 mi (24.6 km); 8°15'20"N, 123°57'E; 410 fm (750 m); 7 Aug 1909; *Albatross* 5511; 1218 hr; LT-10160.
- USNM 93376 (3, 145–298 mm). Pacific, Philippine Is.; off northern Luzon, Hermanos Id. (N), N 69°E, 8 mi (12.9 km); 18°32'30"N, 122°01'00"E; 230 fm (421 m); 12 Nov 1908; *Albatross* 5326; 1328 hr; LT-1491, 17821, 17822.
- USNM 93377 (1, 275+ mm). Pacific, Philippine Is.; off northern Luzon, Font Id. (W), N 28°E, 24.25 mi (39.0 km); 18°33'N, 121°37'30"E; 212 fm (388 m); 19 Nov 1908; *Albatross* 5329; 1125 hr; LT-2185.
- USNM 93378 (1, 290 mm). Pacific, Philippine Is.; China Sea off southern Luzon, Sombrero Id., S 41°E, 4.50 mi (7.2 km); 13°45'15"N, 120°46'30"E; 236 fm (432 m); 16 Jan 1908; *Albatross* 5111; 1508 hr; TT-4702.
- USNM 93379 (3, 135–186 mm). Pacific, Philippine Is.; off northern Luzon, Hermanos Id. (N), N 86°E, 16.75 mi (27.0 km); 18°34'15"N, 121°51'15"E; 224 fm (410 m); 12 Nov 1908; *Albatross* 5325; 1113 hr; LT-10548, 10549, 10550.
- Status: Valid, although *Silvesterina* probably should be synonymized with *Bathyroconger*.
- Remarks: Fowler stated that there were 10 paratypes, but he apparently meant 10 lots of paratypes, not 10 specimens.
- Taenioconger camelopardalis* Lubbock, 1980:285, fig. 1.
(Holotype: BMNH 1979.1.5.17).
Paratype: USNM 219406 (1, 408 mm). Atlantic, Ascension Id.; Hummock Point; 10 Jan 1978; Lubbock, R., and Royal, C.
Status: Valid as *Heteroconger camelopardalis* (Lubbock, 1980). See Smith (1989c:485).
- Uranoconger odontostomus* Fowler, 1934:274, fig. 34.
Holotype: USNM 92351 (307 mm, vertebrae 10/36/123+). Pacific, Indonesia; Gulf of Boni, Olang Pt., N 67°W, 14.5 mi (23.3 km); 3°17'40"S, 120°36'45"E; 484 fm (886 m); 19 Dec 1909; *Albatross* 5656; 0837 hr; no tin tag or linen tag with specimen, but ledger gives "original no. 4097," which corresponds to the linen-tag series.
Status: Uncertain.
- Uroconger syringinus* Ginsburg, 1954:256, figs. 1–2.
Holotype: USNM 157781 (279 mm, vertebrae 11/48/160+). Gulf of Mexico, Louisiana; 28°45'N, 89°43'W; 50 fm (92 m); 28 May 1950; *Oregon* 10.
Paratype: USNM 157789 (1, 333 mm). Gulf of Mexico, Texas; 27°58'N, 93°43'W; 55 fm (101 m); 27 May 1950; *Oregon* 9.
Status: Valid.
- Uroconger vicinalis* Garman, 1899:304.
Holotype: USNM 84568 (90 mm, vertebrae 15?/40/170). Caribbean, Cuba; 23°10'36"N, 82°20'28"W; 146 fm (267 m); 30 Apr 1884; *Albatross* 2161; in two pieces, tip of tail separated from rest of specimen.
Status: Valid as *Bathycongrus vicinalis* (Garman, 1899). See Smith and Kanazawa (1977:530).
Remarks: See "Remarks" under *Congrina thysanochila*.
- Veternio verrens* Snyder, 1904:516, pl. 2.
Holotype: USNM 50862 (270+ mm, vertebrae 8/38/88+). Pacific, Hawaiian Is.; Hawaii, Honolulu market; 1902; *Albatross*; posterior part of body missing.
Status: Synonym of *Conger cinereus* Rüppell, 1828 (Smith, 1970:366).
- Xenomystax atrarius* Gilbert, 1891a:348.
Holotype: USNM 44369 (470 mm, vertebrae 8/42/174). Pacific, Ecuador; 0°37'00"S, 81°00'00"W; 401 fm (734 m); 2 Mar 1888; *Albatross* 2792.
Status: Valid.
- Xenomystax austrinus* Smith and Kanazawa in Smith, 1989c:560, figs. 589–592.
Holotype: USNM 198746 (male, 802 mm, vertebrae 8/41/196). Caribbean, Panama; 9°02'24"N, 76°31'30"W; 400 fm (732 m); 28 May 1964; *Oregon* 4902.
Paratypes: USNM 193559 (1, 326 mm). Caribbean, Pan-

ama; 9°03'N, 81°18'W; 300 fm (549 m); 31 May 1962; *Oregon* 3600.

USNM 198680 (1, 742 mm). Caribbean, Colombia; 10°16'12"N, 75°54'24"W; 300 fm (549 m); 25 May 1964; *Oregon* 4882.

USNM 198771 (1, 1000 mm). Caribbean, Colombia; 12°28'N, 72°26'W; 300 fm (549 m); 2 Jun 1964; *Oregon* 4925.

USNM 200319 (1, 463 mm). Caribbean, Belize; 16°58'N, 87°53'W; 250–400 fm (458–732 m); 10 Jun 1962; *Oregon* 3635; removed from USNM 193592.

USNM 201239 (3, 487–765 mm). Caribbean, Colombia; 12°29'N, 72°19'W; 265 fm (485 m); 9 Oct 1965; *Oregon* 5689.

Status: Valid.

Xenomystax congroides Smith and Kanazawa in Smith, 1989c:563, figs. 596–599.

Holotype: USNM 217386 (male, 492 mm, vertebrae 6/40/215). Atlantic, Suriname; 7°34'N, 54°50'W; 200 fm (366 m); 6 Nov 1957; *Oregon* 2005; removed from USNM 158930.

Paratypes: USNM 217387 (1, 526 mm). Gulf of Mexico, Louisiana; 27°58'N, 90°41'W; 150–175 fm (275–320 m); 21 Sep 1955; *Oregon* 1412; removed from USNM 157891.

USNM 217388 (1, 478 mm). Atlantic, Puerto Rico; 18°31'30"N, 66°47'00"W; 160 fm (293 m); 8 Oct 1959; *Oregon* 2666; removed from USNM 190540.

USNM 217441 (3, 369–413 mm). Caribbean, Belize; 17°28'30"N, 87°57'30"W; 180–150 fm (329–275 m); 23 Jan 1967; *Oregon* 6404.

USNM 217442 (2, 188–222 mm). Caribbean, Venezuela; 10°42'N, 67°56'W; 115 fm (210 m); 28 Sep 1965; *Oregon* 5628.

Status: Valid.

Xenomystax rictus Garman, 1899:315, pl. N.

Syntypes: USNM 57896 (1, 520 mm, vertebrae 9/42/175). Pacific, Panama; 7°21'00"N, 79°35'00"W; 511 fm (935 m); 10 Mar 1891; *Albatross* 3394.

USNM 153605 (1, 365 mm, vertebrae 8/41/177). Pacific, Mexico; 16°32'N, 99°48'W; 493 fm (902 m); 11 Apr 1891; *Albatross* 3417; formerly MCZ 28446.

Status: Synonym of *Xenomystax atrarius* Gilbert, 1891 (Peden, 1972:11).

DERICHTHYIDAE

Derichthys serpentinus Gill, 1884:433.

Holotype: USNM 33523 (8 inches original TL = 203 mm). Atlantic, Cape Hatteras to Nantucket; 39°44'30"N, 71°04'00"W; 1022 fm (1870 m); 21 Sep 1883; *Albatross* 2094; skeletonized, #26930 in USNM bone catalog.

Status: Valid.

Remarks: The brief original description did not give a type specimen or a locality. This information was provided by Gill in Goode and Bean (1896:161–162, fig. 169). The specimen was skeletonized and entered in the USNM bone catalog on 25 May 1906; only the skull remains.

HETERENCHELYIDAE

Pythonichthys asodes Rosenblatt and Rubinoff, 1972:356, 3 figs.

Holotype: USNM 206183 (472 mm TL, vertebrae 5/31/131). Pacific, Panama; Panama Bay, entrance to Panama Canal, effluent of dredge, working along Fort Amador causeway, 1/4 mile (0.4 km) N of yacht club; 17 m; 15 Mar 1967; Wright, H.

Paratype: USNM 207028 (1, 472 mm). Same data as holotype; original no. SIO 67-25.

Status: Valid.

MORINGUIDAE

Aphthalmichthys caribeus Gill and Smith, 1900:974.

Holotype: USNM 49726 (270 mm, vertebrae 81/81/117). Atlantic, Puerto Rico; San Geronimo, near San Juan, on the north shore of the island of Porto Rico; Feb 1900; Gray, G.M.

Status: Synonym of *Moringua edwardsi* (Jordan and Bollman, 1889) (Castle and Böhlke, 1976:617).

Leptocephalus diptychus Eigenmann and Kennedy, 1901:830, unnumbered figure.

Holotype: USNM 49753 (46 mm, myomeres -/73/116). Atlantic, Bahama Is.; New Providence (electric light at surface); Mar–May 1886; *Albatross*; metamorphic; original length 51 mm.

Paratype: USNM 49754 (1, 33 mm). Atlantic; east of Cape May; 37°23'N, 68°08'W; 0–2620 fm (0–4795 m); 29 Aug 1885; *Albatross* 2566; collected at surface, evening; original length 38 mm.

Status: Synonym of *Moringua edwardsi* (Jordan and Bollman, 1889) (Eldred, 1968a:1).

Moringua hawaiiensis Snyder, 1904:517, pl. 3, fig. 6.

Holotype: USNM 50865 (320 mm, vertebrae 89/89/128). Pacific, Hawaiian Is.; Honolulu reef; 1902; *Albatross*. Status: Probably valid.

Moringua latebrosa Schultz in Schultz et al., 1953:95, fig. 20a.

Holotype: USNM 76772 (200 mm, vertebrae 88/88/106). Pacific, Indonesia; Celebes [Sulawesi], Kwandang; Oct 1914; Raven, H.C.

Status: Uncertain.

Moringua penni Schultz in Schultz et al., 1953:96, fig. 20b.

Holotype: USNM 130660 (515 mm, vertebrae 72/66/112).

Pacific, New Guinea, Papua New Guinea; Milne Bay, cool freshwater streams; Nov 1943–Feb 1944; Penn, G.H.; Series G.

Paratype: USNM 52040 (1, 284 mm). Pacific, Philippine Is.; southern Negros; 1901; Dean, B.

Status: Uncertain.

Neoconger mucronatus Girard, 1858:171.

Lectotype: USNM 861 (female, 302 mm, vertebrae 45?/47?/99). Gulf of Mexico, Texas; St. Joseph's Id.; 1853; Wurdemann, G.; three paralectotypes removed to USNM 204928.

Paralectotypes: USNM 204928 (3 females, 263–267 mm); removed from USNM 861.

Status: Valid.

Remarks: In the original description, Girard said only that the "specimens [were] collected by G. Wurdemann." He later (Girard, 1859:77) gave a catalog number, USNM 861, and listed five specimens. Although the ledger entry says five specimens, only four can be found. The lectotype was selected by Smith and Castle (1972:200).

Neoconger vermiformis Gilbert, 1890:57.

Lectotype: USNM 44292 (female, 146 mm, vertebrae 37/43/–95). Pacific, Mexico; Gulf of California; 30°21'00"N, 114°25'15"W; 30 fm (55 m); 27 Mar 1889; *Albatross* 3035; one paralectotype removed to USNM 125074.

Paralectotypes: USNM 125074 (8, 61–125 mm). Same data as lectotype; originally seven specimens, one added from USNM 44292; USBF no. 333.

Status: Valid.

Remarks: Gilbert did not give catalog numbers in his description but simply said that it was based on "several specimens taken at station 3035." The nine specimens in the USNM collection were cataloged under two different numbers. USNM 44292 was entered in 1892 and contained two specimens; USNM 125074 was cataloged much later, in 1942, and it contained seven specimens. The lectotype was selected by Smith and Castle (1972:202) from USNM 44292, and the second specimen from that lot was transferred to USNM 125074.

Rataboura oculata Fowler, 1934:278, fig. 39.

Holotype: USNM 92352 (male, 219 mm, vertebrae 84/77/119). Pacific, Indonesia; Bouro Id. (south) and vicinity, Tifu Bay (Bouro Id.); 10 Dec 1909; *Albatross*; electric light.

Status: Uncertain.

Stilbiscus edwardsi Jordan and Bollman, 1889:549.

Holotype: USNM 41735 (female, 343 mm, vertebrae 80/80/

117). Atlantic, Bahama Is.; Green Turtle Cay; 1888; Edwards, C.L.; TT-678.

Status: Valid as *Moringua edwardsi* (Jordan and Bollman, 1889). See Gill and Smith (1900:973).

MURAENOSOCIDAE

Muraenesox coniceps Jordan and Gilbert, 1882a:348.

Lectotype: USNM 29212 (830 mm). Pacific, Mexico; Mazatlan; 1880–1881; Gilbert, C.H. Jordan and Gilbert listed USNM 28212 as one of the type lots, but that number belongs to a haemulid, *Diabasis flaviguttata*; USNM 29212 is a *Muraenesox coniceps* collected by Gilbert at Mazatlan, and presumably this is the lot they actually were referring to. The lot originally contained two specimens; the smaller, damaged specimen was removed to USNM 329626.

Paralectotypes: USNM 28136 (1, ~600 mm, lost). Same data as lectotype; length stated to be about two feet.

USNM 28141 (1, lost). Same data as lectotype; size not indicated.

USNM 329626 (1, 640+ mm). Removed from USNM 29212; specimen damaged, missing anterior part of head; TT-365.

Status: Valid as *Cynoponticus coniceps* (Jordan and Gilbert, 1882). See Castle and Williamson (1975:3).

Remarks: The authors listed three catalog numbers at the beginning of their description but later referred to "the specimen here described (No. 28136 U.S. Nat. Mus.)." Elsewhere in their paper, in some of the other species descriptions, they referred to the listed catalog numbers as the types. Although they were not consistent in their treatment, I infer that they intended all the listed specimens to be types, and that the "specimen here described" was not intended to be a holotype. I therefore consider these specimens to be syntypes. Only two specimens are still extant, and one of these is badly damaged. Consequently, I select the intact specimen, 830 mm TL, from USNM 29212 as the lectotype of *Muraenesox coniceps* Jordan and Gilbert. The missing paralectotypes may have been lost in the fire at Indiana University in 1884. They were not found during the inventory of the type collection in 1980.

MURAENIDAE

Aemasia lichenosa Jordan and Snyder, 1901:883, fig. 20.

(Holotype: CAS-SU 6480).

Paratype: USNM 49976 (1, 635 mm). Pacific, Japan; Misaki, Sagami; 1900; Jordan, D.S., and Snyder, J.O.

Status: Valid as *Enchelycore lichenosa* (Jordan and Snyder, 1901). See Randall and McCosker (1975:15).

Anarchias allardicei Jordan and Starks in Jordan and Seale, 1906:204, fig. 9.

Holotype: USNM 51715 (160 mm, vertebrae 85/87/97). Pacific, Samoa Is.; Pago Pago; 1902; Jordan, D.S. et al.; U.S. Bureau of Fisheries; originally two specimens, one removed to USNM 144296, paratype.

Paratype: USNM 144296 (1, 114 mm). Same data as holotype; removed from USNM 51715.

Status: Valid.

Remarks: Jordan and Starks stated that there were "four specimens, two from Apia, two from Pago Pago." The holotype was given as USNM 51715, 160 mm, from Pago Pago. This lot originally contained two specimens, which currently measure 114 and 131 mm. The smaller specimen was recataloged as USNM 144296; the larger is presumably the now-shrunken holotype (or else the original measurement was wrong). Böhlke (1953:46) listed two paratypes of *Anarchias allardicei* from Apia, SU 8726. The locality in the ledger entry for USNM 51715 originally was listed as Apia, but this was crossed out later and replaced by Pago Pago. The entry for USNM 144296 remained Apia. As there were only four specimens in the type series, two each from Apia and Pago Pago, and as both Apia specimens are at CAS-SU, and as the holotype was stated as being from Pago Pago, both USNM 51715 and 144296 must be from Pago Pago.

Anarchias knighti Jordan and Starks in Jordan and Seale, 1906:205, fig. 10.

Holotype: USNM 51716 (115 mm, vertebrae 91/93/103). Pacific, Samoa Is.; Apia; 1902; Allardice, R., and Jordan, K.S.; paratype removed to USNM 147772.

Paratype: USNM 147772 (1, 145 mm). Same data as holotype; removed from USNM 51716.

Status: Synonym of *Uropterygius macrocephalus* (Bleeker, 1865) (McCosker et al., 1984:263).

Remarks: The type series contained two species. The paratype is *Uropterygius micropterus* (Bleeker, 1852). The illustration in Jordan and Starks looks more like the paratype than the holotype.

Anarchias yoshiae Kanazawa, 1952:75, fig. 10.

(Holotype: FMNH 48729).

Paratypes: USNM 77748 (1, 74 mm). Gulf of Mexico, Florida; Western Dry Rocks, near Key West, Florida; 25 fm (46 m); 1916; Bartsch, P., and Henderson, J.B.; in two pieces.

USNM 153163 (1, 45.5 mm). Atlantic, Florida; off Palm Beach; 20–30 fm (37–55 m); Apr 1950; Thompson and McGinty.

USNM 157364 (1, 116 mm). Atlantic, Bermuda; Castle Harbor; Aug 1927; Mowbray, L.L.; formerly FMNH 48955.

Status: Synonym of *Anarchias similis* (Lea, 1913) (Eldred, 1968b:1).

Echidna leihala Jenkins, 1903:428, fig. 9.

Holotype: USNM 50844 (424 mm, vertebrae 6/52/120+). Pacific, Hawaiian Is.; reef in front of Honolulu; 1889; Jenkins, O.P.; original no. 283; drawn.

Status: Synonym of *Echidna polyzona* (Richardson, 1845) (Fowler, 1928:49).

Remarks: Of the three specimens in the type series, there are two paratypes at CAS-SU, although Böhlke (1953:46) gave a different catalog number (SU 23316) for both than did Jenkins (SU 7783 for one and U.S.F.C. number 2752 for the other).

Echidna leucotaenia Schultz, 1943:22, pl. 3.

Holotype: USNM 115949 (229 mm, vertebrae 7/52/127). Pacific, Phoenix Is.; Enderbury Id. reef; 3°08'30"S, 171°05'34"W; 15–19 May 1939; Schultz, L.P.; U-39-253-392.

Paratypes: USNM 115950 (21, 54–223 mm). Same data as holotype.

USNM 115951 (1, 200 mm). Pacific, Phoenix Is.; Hull Id. channel; 4°29'16"S, 172°10'15"W; 8–12 Jul 1939; Schultz, L.P.

USNM 115952 (2, 73–96 mm). Pacific, Phoenix Is.; Canton Id. reef at ocean; 25–28 Apr 1939; Schultz, L.P.

USNM 115953 (3, 44–49 mm). Pacific, Samoa Is.; Rose Atoll lagoon; 14°32'52"S, 168°08'34"W; 12–20 Jun 1939; Schultz, L.P.

USNM 115955 (3, 90–172 mm). Pacific, Phoenix Is.; Hull Id. channel; 4°29'16"S, 172°10'15"W; 7–17 Jul 1939; Schultz, L.P.

USNM 115956 (2, 77–94 mm). Pacific, Phoenix Is.; Swains Id. reef; 11°03'35"S, 171°04'24"W; 3–9 May 1939; Schultz, L.P.; U-39-105-183.

USNM 115957 (2, 39–42 mm). Pacific, Samoa Is.; Tutuila Id., Fagasa Bay, rock pools; 5 Jun 1939; Schultz, L.P.

Status: Valid.

Remarks: One lot of paratypes, formerly USNM 115954 (2, 81–110 mm), exchanged to MCZ, now MCZ 37302.

Echidna obscura Jenkins, 1903:430, fig. 11.

Holotype: USNM 50686 (312 mm, vertebrae 6/53/124). Pacific, Hawaiian Is.; Honolulu; 1889; Jenkins, O.P.; original no. 2352.

Paratypes: USNM 126011 (2, 238–407 mm). Same data as holotype; U.S.B.F. no. 1175, original nos. 2351, 2353. According to Jenkins, the larger specimen (2351) was formerly SU 7725, and the smaller (2353) U.S.F.C. 2752. Apparently both specimens were returned to the Smithsonian and were cataloged.

Status: Synonym of *Echidna polyzona* (Richardson, 1845) (Fowler, 1928:49).

Echidna psalion Jenkins, 1903:431, fig. 12.

Holotype: USNM 50685 (265 mm, vertebrae 6/53/126). Pacific, Hawaiian Is.; Honolulu; 1896; *Albatross*; drawn.

Status: Synonym of *Echidna polyzona* (Richardson, 1845) (Fowler, 1928:49).

Echidna trossula Jordan and Starks in Jordan and Seale, 1906:203, fig. 8.

Holotype: USNM 51714 (133 mm, vertebrae 7/47/106). Pacific, Samoa Is.; Apia; 1902; Jordan, D.S., and Kellogg, V.L.; Bureau of Fisheries; two paratypes removed to USNM 320270; TT-02381 (loose in jar).

Paratypes: USNM 126605 (6, 105–165 mm). Pacific, Samoa Is.; Pago Pago; 1902; Jordan, D.S., and Kellogg, V.L.; Bureau of Fisheries; TT-06333; USBF 1260.

USNM 320270 (2, 135–138 mm). Same data as holotype; removed from USNM 51714; TT-02381 (loose in jar with USNM 52714).

Status: Synonym of *Echidna delicatula* (Kaup, 1856) (Fowler, 1928:50).

Remarks: The description says "type no. 51714, U.S. National Museum, a specimen 6.5 inches long." There were originally three specimens in USNM 51714, measuring 133, 135, and 138 mm. All of these are less than 6.5 inches (165 mm). Assuming that shrinkage is responsible for the discrepancy, there is no way to tell intrinsically which one is the holotype. One specimen has a metal tag with the catalog number tied to it, and it is presumed that this is the holotype. The other two specimens were recataloged as USNM 320270. Eleven other paratypes are at CAS-SU (Böhlke, 1953:46), all from Apia. This makes a total of 20, considerably more than the dozen specimens mentioned by Jordan and Starks. Furthermore, it is unclear how the authors distinguished *E. trossula* from *E. delicatula*, reported in the same paper. The USNM specimens of *delicatula* from that collection do not appear to differ from the specimens of *trossula*.

Echidna unicolor Schultz in Schultz et al., 1953:106, figs. 21D, 22.

Holotype: USNM 141627 (227 mm, vertebrae 6/51/122). Pacific, Marshall Is.; Rongelap Atoll, north end of Eniaetok Id., lagoon reef; 17 Jun 1946; Schultz, L.P.; S-46-215.

Paratypes: USNM 141625 (1, 135 mm). Pacific, Marshall Is.; Bikini Atoll, large, shallow tidal pool between Eman and Reer Ids.; 18 Jul 1947; Brock, V.E., Hiatt, R.W., Schultz, L.P., and Myers, G.S.; S-46-422;

originally two specimens, one exchanged to FMNH 15 Jan 1959.

USNM 141626 (1, 176 mm). Pacific, Marshall Is.; Rongelap Atoll, north end of Eniaetok Id., lagoon reef; 17 Jun 1946; Schultz, L.P.; S-46-215.

Status: Valid.

Echidna vincta Jenkins, 1903:429, fig. 10.

Holotype: USNM 50687 (337 mm, vertebrae 5/54/124). Pacific, Hawaiian Is.; Honolulu; *Albatross*; TT-231; drawn.

Status: Synonym of *Echidna polyzona* (Richardson, 1845) (Fowler, 1928:49).

Echidna zonophaea Jordan and Evermann, 1903:167.

Holotype: USNM 50621 (534 mm, vertebrae 6/52/126). Pacific, Hawaiian Is.; Honolulu; 1901; Jordan, D.S., and Evermann, B.W.; TT-04899.

Paratype: USNM 125491 (1, 405 mm). Same data as holotype; TT-03361; USBF no. 1222.

Status: Synonym of *Echidna polyzona* (Richardson, 1845) (Fowler, 1928:49).

Enchelycore carychroa Böhlke and Böhlke, 1976:138, figs. 1–3.

(Holotype: ANSP 100000).

Paratypes: USNM 214784 (2, 89–225 mm). Caribbean, Haiti; Gulf of Gonave, St. Marc Channel, off Mount Rouis, 2 mi (3.2 km) SE of Mount Rouis town proper on Port-au-Prince—St. Marc road; 120–135 ft (37–41 m); 16 Sep 1967; Tyler, J.C., Feddern, H.A., Devany, T., and Durocher, J.; TFD-11; formerly ANSP 111360.

USNM 214785 (9, 100–246 mm). Caribbean, Colombia; Isla Grande, tiny coral islet; 10°11'24"N, 75°44'54"W; 0–4 ft (0–1.2 m); 29 Sep 1969; Knapp, L.W.; LK 69-37; formerly ANSP 117590.

Status: Valid.

Enchelycore kamara Böhlke and Böhlke, 1980a:173, figs. 1–3.

Holotype: USNM 221161 (282 mm, vertebrae 15/62/140). Pacific, Line Is.; Tongareva Atoll, NW side of atoll and N of the W pass, on lagoon side of some small islets S of Molokai Id.; 3–5 ft (1–1.5 m); 13 Jun 1965.

Status: Valid.

Gymnomuraena nectura Jordan and Gilbert, 1882c:356.

Holotype: USNM 15442 (156 mm, vertebrae 89/90/110). Pacific, Mexico; Cape St. Lucas; Xantus, J.; original no. 5378.

Status: Considered by McCosker et al. (1984:265) to be a synonym of the wide-ranging Indo-Pacific species *Uropterygius macrocephalus* (Bleeker, 1865).

- Gymnothorax bayeri* Schultz in Schultz et al., 1953:124, figs. 23f, 26.
 Holotype: USNM 141608 (398 mm, vertebrae 8/49/148). Pacific, Marshall Is.; Rongelap Atoll, Kieschiechi Id., north end, lagoon coral head; 20 ft (6 m); 24 Jul 1946; Brock, V.E., and Herald, E.S.; S-46-285.
 Paratypes: USNM 116053 (1, 212 mm). Pacific, Samoa Is.; Rose Id. lagoon; 12–20 Jun 1939; Schultz, L.P.
 USNM 141605 (1, 284 mm). Pacific, Marshall Is.; Bikini Atoll, 0.25 mi (0.4 km) off Amen Id. in lagoon; 30 ft (9 m); 4 Aug 1946; Herald, E.S., Brock, V.E., and Kohler, T.F.; S-46-307.
 USNM 141606 (1, 310 mm). Pacific, Marshall Is.; Bikini Atoll, Enyu Id., lagoon reef at channel entrance; 0–20 ft (0–6 m); 16 Mar 1946; Schultz, L.P., Brock, V.E., and Marr, J.C.; S-46-8.
 USNM 141607 (1, 552 mm). Pacific, Marshall Is.; Rongelap Atoll, Kieschiechi Id., north end, lagoon coral head; 20 ft (6 m); 24 Jul 1946; Brock, V.E., and Herald, E.S.; S-46-285.
 USNM 141609 (1, 159 mm). Pacific, Marshall Is.; Bikini Atoll, Boby Id., north end, ocean reef; 17 Aug 1946; Herald, E.S.; S-46-383.
 USNM 152976 (1, 340 mm). Pacific, Marshall Is.; Bikini Atoll, Bikini Id.; 29 Jun 1946; received from Univ. of Washington.
 USNM 152977 (1, 106 mm). Pacific, Marshall Is.; Bikini Atoll, Eman Id.; 18 Aug 1947; received from Univ. of Washington.
 USNM 202542 (1, 352 mm). Same data as USNM 152976; received from Univ. of Washington, formerly UW 8742.
 Status: Valid as *Enchelycore bayeri* (Schultz in Schultz et al., 1953). See Rosenblatt (1967:592).
 Remarks: One paratype, formerly USNM 141604 (225 mm), exchanged to FMNH, Jan 1959.
- Gymnothorax berndti* Snyder, 1904:518, pl. 4, fig. 8.
 Holotype: USNM 50867 (930 mm, vertebrae 5/54/139). Pacific, Hawaiian Is.; Honolulu market; 1902; *Albatross*.
 Status: Valid.
 Remarks: Snyder mentioned two specimens in addition to the holotype that were “of about the same size.” One, called the “cotype,” 78 cm, was given as CAS-SU 12791. The other was not given a catalog number or any kind of type designation. USNM 52618 was collected in the Hawaiian Islands in 1901 or 1902 and is 800 mm in TL, within the 78–93 cm range of the other types. Article 72(b)(vi) of the ICZN seems to expressly exclude USNM 52618 from the type series, even if it could be proved that it is the specimen mentioned by Snyder. I therefore do not consider it a paratype.
- Gymnothorax bikiniensis* Schultz in Schultz et al., 1953:116, figs. 23e, 24.
 Holotype: USNM 141575 (555 mm, vertebrae 9/61/150). Pacific, Marshall Is.; Cherry Id., ocean reef, not in surf; 18 Apr 1946; Schultz, L.P.; S-46-98.
 Paratypes: USNM 116054 (1, 115 mm). Pacific, Samoa Is.; Rose Id. reef.; 11–14 Jun 1939; Schultz, L.P.; U.39.637-846.
 USNM 141571 (1, 113 mm). Pacific, Marshall Is.; Rongerik Atoll, Bock Id., non-isolated tidal pool on ocean reef; 24 Apr 1946; Brock, V.E., and Marr, J.C.; S-46-113.
 USNM 141572 (2, 215–303 mm). Pacific, Marshall Is.; Bikini Atoll, Enyu Id., lagoon reef at channel entrance; 0–20 ft (0–6 m); 16 Mar 1946; Schultz, L.P., Brock, V.E., and Marr, J.C.; S-46-8.
 USNM 141573 (1, 318 mm). Pacific, Marshall Is.; Boro Id., reef next to Boro Channel; 6 Apr 1946; Schultz, L.P., and Brock, V.E.; S-46-52; originally two specimens, one (570 mm) exchanged to FMNH, 15 Jan 1959.
 USNM 141574 (1, 600 mm). Pacific, Marshall Is.; Bikini Atoll, ocean reef at western end of Erik Id.; 19 Mar 1946; Schultz, L.P., and Brock, V.E.; S-46-9.
 USNM 141576 (1, 303 mm). Pacific, Marshall Is.; Eniwetok Atoll, Mui Id., ocean reef in surf; 28 May 1946; Schultz, L.P.; S-46-186.
 Status: Valid as *Enchelycore bikiniensis* (Schultz in Schultz et al., 1953). See Rosenblatt (1967:592).
- Gymnothorax breedeni* McCosker and Randall, 1977:162, figs. 1, 2, 3A.
 (Holotype: CAS 35250).
 Paratype: USNM 215283 (1, 645 mm). Pacific, Line Is.; Washington Id., 1/4 mi (0.4 km) west of west end; 43 ft (13 m); 3 Nov 1968; Randall, J.E.
 Status: Valid.
- Gymnothorax chlamydatus* Snyder, 1908:94.
 Holotype: USNM 62232 (630 mm, vertebrae 4/62/149). Pacific, Ryukyu Is.; Naha, Okinawa; *Albatross*; TT-0138; drawn.
 Status: Probably valid.
- Gymnothorax dorsalis* Seale, 1917:92.
 (Holotype: MCZ 31060).
 Paratype: USNM 153610 (1, 743 mm). Pacific, China; Hong Kong; formerly MCZ 31061.
 Status: Valid.
- Gymnothorax ercodes* Jenkins, 1903:428, fig. 8.
 Holotype: USNM 50843 (211 mm, vertebrae 4/48/119). Pacific, Hawaiian Is.; Honolulu; 1891; *Albatross*; drawn.

- Status: Synonym of *Gymnothorax eurostus* (Abbott, 1861) (Gosline and Brock, 1960:315).
- Gymnothorax goldsbroughi* Jordan and Evermann, 1903:167.
Holotype: USNM 50617 (527 mm, vertebrae 5/52/143). Pacific, Hawaiian Is.; Honolulu; 1901; Jordan, D.S., and Evermann, B.W.; TT-03392.
Status: Synonym of *Gymnothorax elegans* Bliss, 1883 (Randall et al., 1993:227).
- Gymnothorax gracilicauda* Jenkins, 1903:426, fig. 6.
Holotype: USNM 50679 (210 mm, vertebrae 5/51/133). Pacific, Hawaiian Is.; reef in front of Honolulu; 1889; Jenkins, O.P.; TT-367; drawn.
Status: Valid.
- Gymnothorax hilonis* Jordan and Evermann, 1903:167.
Holotype: USNM 50618 (241 mm, vertebrae 10/57/134). Pacific, Hawaiian Is.; Hilo, Hawaii; 1901; Jordan, D.S., and Evermann, B.W.; TT-04902.
Status: Resembles *Gymnothorax pictus* (Ahl, 1789) but probably valid.
- Gymnothorax hubbsi* Böhlke and Böhlke, 1977:238, figs. 1–3.
Holotype: USNM 214833 (male, 273 mm, vertebrae 6/59/136). Atlantic, Florida; off Cape Canaveral; 28°33'N, 80°03'W; 38 fm (70 m); 1 Feb 1961; *Silver Bay 2727*; formerly ANSP 115230.
Status: Valid.
- Gymnothorax kolpos* Böhlke and Böhlke, 1980b:223, fig. 3.
(Holotype: ANSP 107093).
Paratypes: USNM 154982 (1, 400 mm). Gulf of Mexico, Louisiana; off Point Au Fer; 28°25'N, 91°18'W; 26 fm (48 m); 13 Jul 1938; *Pelican 86-2*.
USNM 158729 (1, 556 mm). Gulf of Mexico, Mexico; 22°14'N, 91°26'W; 50 fm (92 m); 16 Aug 1951; *Oregon 406*.
USNM 158739 (1, 567+ mm). Gulf of Mexico, Louisiana; 28°48'42"N, 89°40'36"W; 40 fm (73 m); 8 Apr 1952; *Oregon 523*.
USNM 158741 (1, ~630 mm). Gulf of Mexico, Louisiana; 28°48'N, 89°43'30"W; 40 fm (73 m); 7 Dec 1950; *Oregon 175*.
USNM 215279 (1, 652 mm). Gulf of Mexico, Louisiana; 29°20'N, 88°42'W; 30 fm (55 m) 26 Feb 1951; *Oregon 286*; removed from USNM 158740.
Status: Valid.
- Gymnothorax leucacme* Jenkins, 1903:427, fig. 7.
Holotype: USNM 50682 (497 mm, vertebrae 4/52/133). Pacific, Hawaiian Is.; coral rocks at Honolulu; 1889; Jenkins, O.P.; original no. 280; drawn.
- Status: Synonym of *Gymnothorax rueppelliae* (McClelland, 1844). Jordan and Evermann (1905:101) synonymized this species with *Gymnothorax petelli* (Bleeker, 1856). Randall (1973:174) and McCosker and Randall (1982:20) showed that the correct name is *G. rueppelliae*.
- Gymnothorax leucostictus* Jenkins, 1903:425, fig. 5.
Holotype: USNM 50681 (153 mm, vertebrae 5/53/130). Pacific, Hawaiian Is.; coral reef at Honolulu; 1889; Jenkins, O.P.; original no. 281; drawn.
Status: Synonym of *Gymnothorax meleagris* (Shaw and Nodder, 1785) (Fowler, 1928:53).
- Gymnothorax marquesensis* Seale, 1906:10, fig. 1.
(Holotype: BPBM 2384).
Paratype: USNM 109375 (1, 244 mm). Pacific, Marquesas Is.; Nuku Hiva; 9 Nov 1900 to 21 Sep 1903; Seale, A.; from BPBM 2385.
Status: Synonym of *Gymnothorax buroensis* (Bleeker, 1857) (pers. obs.).
Remarks: Both the holotype and the USNM paratype are *Gymnothorax buroensis*, but at least one other paratype, BPBM 2385, seems to be different, based on its vertebral count (129 vs. 114) (Böhlke, 1982:42).
- Gymnothorax melatremus* Schultz in Schultz et al., 1953:120, figs. 23d, 25.
Holotype: USNM 141610 (176 mm, vertebrae 4/52/137). Pacific, Marshall Is.; Bikini Atoll, Boby Id., north end, ocean reef; 17 Aug 1946; Herald, E.S.; S-46-383.
Status: Valid.
- Gymnothorax mucifer* Snyder, 1904:519, pl. 5, fig. 9.
Holotype: USNM 50868 (657+ mm, vertebrae 5/54/123+). Pacific, Hawaiian Is.; Honolulu market; 1902; *Albatross*; TT-2693; small piece of tail missing.
Status: Valid.
- Gymnothorax nuttingi* Snyder, 1904:518, pl. 4, fig. 7.
Holotype: USNM 50866 (754 mm, vertebrae 7/70/156+). Pacific, Hawaiian Is.; Honolulu market; 1902; *Albatross*; TT-2685.
Status: Valid.
- Gymnothorax ocellatus saxicola* Jordan and Davis, 1891:606.
Lectotype: USNM 34280 (430 mm, vertebrae 5/54/141). Gulf of Mexico, Florida; Cedar Keys; Hemphill, H.; received 5 Jan 1884. Four specimens originally were listed in the ledger; two were removed to USNM 152255; the whereabouts of the fourth specimen is unknown.
Paralectotypes: USNM 5997 (3, 290–434 mm). Gulf of Mexico, Florida; Cedar Key.
USNM 30779 (1, 195+ mm). Gulf of Mexico, Florida;

Pensacola; Mar 1882; Stearns, S.; from stomach of red snapper.

USNM 32802 (1, 360 mm). Same data as USNM 30779.

USNM 152255 (2, 303–428 mm). Removed from USNM 34280.

Status: Currently recognized as a valid species, *Gymnothorax saxicola*.

Remarks: Jordan and Davis described *Gymnothorax ocellatus* var. *saxicola* without designating type material in any way. This was the first attempt by anyone to unravel the *G. ocellatus* complex, and it is unclear exactly what status they intended for *saxicola* and the other three “varieties” they listed. In fact, they said that the differences between them involved only color and “are probably due to differences in surroundings (Jordan and Davis, 1891:607).” Nevertheless, this must be considered the original description of *Gymnothorax saxicola*. The nebulous description consists mainly of a synonymy of seven prior literature references and a very brief description of the coloration of the four varieties. The only reference to specimens is the statement that “the numerous specimens before us are from Havana and the Snapper Banks, Cedar Keys, and Pensacola” (Jordan and Davis, 1891:607). These “numerous specimens” plus the specimens referred to in the cited references must all be considered syntypes of *Gymnothorax saxicola*.

Ginsburg (1951:461) designated a neotype (USNM 34280) for *saxicola* with the following explanation. “As no type appears to have been set aside by Jordan and Davis, the above specimen is hereby designated as the neotype. The authors mention Cedar Keys in their account and the specimen designated is possibly one of those examined by them; but there is no way now of definitely identifying their specimens.” If, however, the specimen is indeed one of those examined by Jordan and Davis, then it is a syntype and cannot be a neotype of the same species. A neotype can be designated only if no holotype or syntypes exist. In fact, Article 75(d)(3) of the ICZN requires that a valid neotype designation must include “the author’s reasons for believing the holotype, lectotype, all syntypes, or previous valid neotype to be lost or destroyed, and the steps that had been taken to trace it or them.” Ginsburg did none of this, and his neotype designation is consequently invalid. It is unnecessary to refer the issue to the Commission, as assumed by Böhlke et al. (1989:167).

Böhlke (1953:47) listed a specimen of *G. saxicola* in the Stanford collection (SU 1658) as the holotype, apparently because the catalog, in Jordan’s handwriting, said it was the type (Böhlke et al., 1989:167). Except in cases of monotypy, however, the “holotype of a new nominal species-group taxon can only be

designated in the original publication...” (ICZN, Article 73[a][iii]). Because Jordan and Davis did not do this, the specimen cannot be a holotype. It might be argued that Böhlke’s action constituted a lectotype designation by inference of a holotype (ICZN, Article 74b). That article, however, pertains only to those cases in which the original number of specimens was not known to be more than one. Although Böhlke (1953:47) stated explicitly that “there is no way of knowing at present ... if more than one specimen was used in the original description, ...” the description clearly was based on multiple specimens. Article 74(b) thus seems to indicate that Böhlke’s action was not a lectotype designation. Based on this interpretation of the code, therefore, all the USNM specimens of *saxicola* would be syntypes. The *Gymnothorax saxicola* group (*saxicola*, *nigromarginatus*, and *ocellatus*) has had a long and confusing taxonomic history. Ginsburg (1951) dealt with the problem in some detail, carefully comparing the three forms and pointing out the distinguishing characters. He selected a specimen as his “neotype” that had the characters of *saxicola* and that came from an area in which *nigromarginatus* and *ocellatus* do not occur. For this reason, I am here selecting that specimen, USNM 34280, 430 mm TL, as the lectotype of *Gymnothorax ocellatus saxicola*.

Gymnothorax octavianus Myers and Wade, 1941:89, pl. 16.

Holotype: USNM 101801 (187 mm, vertebrae 10/57/143). Pacific, Colombia; Octavia Bay; 28 Jan 1935; Hancock Expedition, 435-35; Schmitt, W.L.

Status: Valid as *Enchelycore octavianus* (Myers and Wade, 1941). See Rosenblatt (1967:592).

Gymnothorax odiosus Snyder, 1908:94.

Holotype: USNM 62231 (581 mm, vertebrae 4/56/130). Pacific, Japan; Kagoshima; *Albatross*; TT-0303.

Status: Apparently valid.

Gymnothorax parini Collette, Smith, and Böhlke, 1991:344, figs. 1–3.

Holotype: USNM 307751 (female, 538 mm, vertebrae 4/58/151). Indian Ocean, Walters Shoals; 33°11′54″S, 43°51′42″E; 18 m; 22 Dec 1988; *Vityaz* 2751; 0020–1600 hr; BBC 1923.

Paratypes: USNM 307749 (2, 480–590 mm). Indian Ocean, Walters Shoals; 33°12′36″S, 43°51′12″E; 18 m; 13 Dec 1988; *Vityaz* 2695A; 0920–1450 hr; BBC 1906.

USNM 307750 (1, 575 mm). Indian Ocean, Walters Shoals; 33°13′24″S, 43°51′42″E; 20 m; 16 Dec 1988; *Vityaz* 2715; 0848–1135 hr; BBC 1914.

USNM 307752 (4, 588–650 mm). Indian Ocean, Walters Shoals; 33°15′30″S, 43°53′18″E; 35–40 m; 11 Dec

1988; *Vityaz* 2683B; 1045–1500 hr; BBC 1901.

Status: Valid.

Gymnothorax polygonius Poey, 1876:68, pl. 10.

Holotype: USNM 9825 (693 mm, vertebrae 4/52/138).
Caribbean, Cuba; Poey, F.; original no. 23.

Status: Valid.

Gymnothorax steindachneri Jordan and Evermann, 1903:166.

Holotype: USNM 50616 (600 mm, vertebrae 5/49/131).
Pacific, Hawaiian Is.; Honolulu; 1901; Jordan, D.S.,
and Evermann, B.W.; original no. 03775.

Paratype: USNM 126528 (1, 201 mm). Same data as
holotype; original nos. 04905 (field tag), 2697
(U.S.F.C.), 1068 (U.S.B.F.).

Status: Valid.

Gymnothorax talofa Jordan and Starks in Jordan and Seale,
1906:201, fig. 7.

Holotype: USNM 51713 (249 mm, vertebrae 5/48/~130).
Pacific, Samoa Is.; Apia; 1902; Jordan, D.S., and
Kellogg, V.L.

Status: Synonym of *Gymnothorax margaritophorus* Bleeker,
1864 (Schultz, 1943:43).

Gymnothorax thalassopterus Jenkins, 1903:427, pl. 2.

Holotype: USNM 50619 (585 mm, vertebrae 5/56/136).
Pacific, Hawaiian Is.; Honolulu; 1901; Jordan, D.S.,
and Evermann, B.W.; TT-03772. This specimen
originally was entered into the ledger with the tin-tag
number 3722 instead of 3772. Possibly because of the
discrepancy in tin-tag numbers, the same specimen
was recataloged a few days later as USNM 51703.

Paratypes: USNM 50683 (1, 347 mm). Pacific, Hawaiian
Is.; Honolulu; 1889; Jenkins, O.P.; TT-305.

USNM 51102 (1, ~555 mm). Pacific, Hawaiian Is.; 1901;
U.S. Fish Commission; TT-03548.

USNM 52615 (1, 897 mm). Pacific, Hawaiian Is.;
1901–1902; U.S. Bureau of Fisheries; TT-03375.

USNM 52630 (1, 950 mm). Pacific, Hawaiian Is.; Puako
Bay, Hawaii; 1901–1902; U.S. Bureau of Fisheries;
TT-03722.

USNM 126529 (1, 215 mm). Same data as holotype;
TT-4911; USBF no. 1064.

USNM 312444 (1, ~292 mm). Same data as holotype;
formerly University of Iowa no. 19133; TT-4910.

Status: Synonym of *Gymnothorax flavimarginatus* (Rüppell,
1828) (Jordan and Evermann, 1905:99).

Remarks: In addition to the holotype (“type”), Jenkins
mentioned several other specimens. Four of these
were listed by tin-tag numbers (305, 03375, 03548,
and 03722). These are in the USNM collection and are
represented by USNM 50683, 52615, 51102, and
52630, respectively. He also stated that “numerous
examples were taken by Jordan and Evermann” at

Honolulu and “one example was obtained by them at
Cocoanut Island, Hilo” (Jenkins, 1903:427). The
Coconut Island specimen cannot be found, but two
other specimens collected by Jordan and Evermann at
Honolulu are present (USNM 126529 and 312444),
and they also must be considered paratypes. Böhlke
(1953:47) listed four paratypes then at Stanford (SU
7449, 12770, 12771, and 12773), all were collected by
Jordan and Evermann at Honolulu. Four additional
specimens in the USNM collection (USNM 51103,
51128, 55023, and 55058) were taken in the Hawaiian
Islands at approximately the same time as the other
types, and three bear tin-tag numbers in the same
range (03767, 003770, and 03771). Because these
specimens were not specifically mentioned by Jen-
kins, either by tin-tag number or by collector and
locality, I do not consider them to be part of the type
series.

Gymnothorax umbrosus Poey, 1876:67, pl. 9.

Holotype: USNM 13062 (female, 660 mm, vertebrae 7/67/
143). Caribbean, Cuba; Poey, F.; original no. 162;
Poey no. 403.

Status: Synonym of *Enchelycore nigricans* (Bonnaterre,
1788) (Böhlke et al., 1989:143).

Gymnothorax vinolentus Jordan and Evermann, 1903:165.

Holotype: USNM 50615 (715 mm, vertebrae 6/63/142).
Pacific, Hawaiian Is.; Kailua, Hawaii; 1901;
Goldsborough, E.L., and Sindo, M.; TT-03726.

Status: Synonym of *Enchelynassa canina* (Quoy and Gai-
nard, 1824) (Fowler, 1928:59).

Gymnothorax waiialuae Snyder, 1904:520, pl. 6, fig. 11.

Holotype: USNM 50870 (107 mm, vertebrae 5/53/134).
Pacific, Hawaiian Is.; Waiialua Bay, Oahu; 1902;
Albatross.

Status: Synonym of *Gymnothorax rueppelliae* (McClelland,
1844). Fowler (1928:54) synonymized this species
with *Gymnothorax petelli* (Bleeker, 1856). Randall
(1973:174) and McCosker and Randall (1982:20)
showed that the correct name is *G. rueppelliae*.

Gymnothorax xanthostomus Snyder, 1904:519, pl. 5, fig. 10.

Holotype: USNM 50869 (821 mm, vertebrae 4/52/136).
Pacific, Hawaiian Is.; Honolulu market; 1902; *Alba-*
tross; TT-2639.

Status: Synonym of *Gymnothorax nudivomer* (Günther,
1866) (Randall et al., 1981:179).

Leptocephalus gilli Eigenmann and Kennedy, 1902:88, fig. 7.

Holotype: USNM 49748 (50 mm, myomeres 24/94/~138).
Atlantic; 38°25'N, 72°40'W; 1883–1887; *Albatross*;
present SL 44 mm.

Status: Larva of one of the *Gymnothorax ocellatus* complex

(Eldred, 1969), based on locality probably *G. saxicola* Jordan and Davis, 1891.

Leptocephalus latus Eigenmann and Kennedy, 1902:87, fig. 6.
Holotype: USNM 49760 (70 mm, myomeres 26/98/133).
Atlantic, North Carolina; SSE Cape Lookout; 34°15'00"N, 76°11'30"W; 0–31 fm (0–57 m); 19 Oct 1885; *Albatross* 2611; present SL 59 mm.
Status: Larva of one of the *Gymnothorax ocellatus* complex (Eldred, 1969), based on locality probably *G. saxicola* Jordan and Davis, 1891.

Leptocephalus strommani Eigenmann and Kennedy, 1902:89, fig. 8.
Holotype: USNM 49762 (61 mm, myomeres –/71/–137).
Atlantic, North Carolina; Cape Hatteras; 35°08'30"N, 75°10'00"W; 0–49 fm (0–90 m); 17 Oct 1885; *Albatross* 2596; bottle # 9, # 2; present SL 56 mm.
Status: Larva of *Gymnothorax moringa* (Cuvier, 1829) (Eldred, 1970:1).

Remarks: The specific name originally was published as “*strömmani*.” The ICZN (Article 32[d][i][2]) requires that “when in a name published before 1985 and based upon a German word, the umlaut sign is deleted from a vowel, the letter ‘e’ is to be inserted after that vowel (if there is any doubt that the name is based upon a German word, it is to be so treated).” Pehr Hugo Strömman, however, was Swedish, not German. As the code is silent on how to treat Swedish words, I have simply deleted the diacritical mark, as the first part of Article 32(d)(i)(2) requires.

Lycodontis albimentis Evermann and Marsh, 1902:78, fig. 9.
Holotype: USNM 49527 (50 mm, vertebrae 6?/55?/135).
Caribbean, Puerto Rico; off Culebra Id., Culebritas light-house, NE 5¼ mi (8.5 km); 15 fm (27 m); 8 Feb 1899; *Fish Hawk* 6093.
Status: Synonym of *Gymnothorax moringa* (Cuvier, 1829) (Böhlke et al., 1989:180).

Lycodontis jordani Evermann and Marsh, 1900:352.
Holotype: USNM 49358 (387 mm, vertebrae 6/51/137+).
Caribbean, Puerto Rico; Mayagüez; 20 Jan 1899; *Fish Hawk*; TT-0577.
Status: Synonym of *Gymnothorax ocellatus* Agassiz, 1831 (Böhlke et al., 1989:174).

Muraena albigutta Hildebrand, 1946:132, fig. 30.
Holotype: USNM 127840 (575 mm, vertebrae 5/55/131).
Pacific, Peru; Lobos de Afuera Is., east side; 6°56'S, 80°43'W; 20 Jul 1941; Lobell, M.J.; U-02023; drawn.
Paratype: USNM 127841 (1, 325 mm). Pacific, Peru; Lobos de Afuera Bay; 6°56'S, 80°51'W; 18 May 1941; Lobell, M.J.; U-02285.

Status: Synonym of *Muraena argus* (Steindachner, 1870) (McCosker and Rosenblatt, 1975:426).

Muraena clepsydra Gilbert in Jordan and Evermann, 1898: 2805.
(Holotype: CAS-SU 6807).
Paratype: USNM 50423 (1, 458 mm). Pacific, Panama; 10 Jan–24 Feb 1896; Gilbert, C.H. et al.; probably the 473 mm specimen listed by Gilbert in the description.
Status: Valid.
Remarks: Gilbert did not give catalog numbers for his type series, but he did say that “[t]he type is 397 millimeters long ... and has the spots on body less numerous than in larger specimens.” Gilbert and Starks (1904:5) listed the type as SU 6807. Böhlke (1953:47) was thus in error when he stated that “no type was selected in the original description.” CAS-SU 6807 is the holotype, not the “lecto-holotype” as stated by Böhlke (1953:47).

Muraena elaborata Poey, 1860:323.
(See *Muraena multiocellata*).

Muraena infernalis Poey, 1861:347.
Holotype: USNM 4808 (1430 mm, lost). Cuba; Poey, F.; original no. 398.
Status: Synonym of *Gymnothorax funebris* Ranzani, 1839 (Böhlke et al., 1989:176).
Remarks: This specimen cannot be located and is presumed lost. Böhlke (1982:42) erroneously listed USNM 12547 as a syntype of *Muraena infernalis*. That specimen is ~690 mm, however, which is much too small to be the holotype, and as Poey described *Muraena infernalis* from a single specimen, there are no syntypes.

Muraena insularum Jordan and Davis, 1891:609.
Holotype: USNM 38300 (517 mm, vertebrae 5/48/116).
Pacific, Galapagos Is.; Chatham Id.; 1884; Jones, W.H.
Status: Synonym of *Muraena lentiginosa* Jenyns, 1842 (McCosker and Rosenblatt, 1975:425).
Remarks: Böhlke (1982:42) gave a total vertebral count of 120 for this specimen, but my own examination showed 116.

Muraena kailuae Jordan and Evermann, 1903:165.
Holotype: USNM 50614 (463 mm, vertebrae 6/49/125).
Pacific, Hawaiian Is.; Kailua, Hawaii; 9 Aug 1901; Goldsborough, E.L., and Sindo, M.; TT-03709.
Status: Synonym of *Enchelycore pardalis* (Schlegel, 1847) (Fowler, 1928:51).

Muraena kauila Jenkins, 1903:424, fig. 4.
Holotype: USNM 50684 (300 mm, vertebrae 6/51/116+).

Pacific, Hawaiian Is.; Honolulu; 1889; Jenkins, O.P.; TT-304; drawn.

Status: Synonym of *Enchelycore pardalis* (Schlegel, 1847) (Fowler, 1928:51).

Muraena lampra Jenkins, 1903:423, fig. 3.

Holotype: USNM 50680 (190 mm, vertebrae 5/48/123). Pacific, Hawaiian Is.; Honolulu; 1889; Jenkins, O.P.; TT-269.

Status: Synonym of *Enchelycore pardalis* (Schlegel, 1847) (Fowler, 1928:51).

Muraena multiocellata Poey, 1860:324.

Holotype (?): USNM 24961 (424 mm, vertebrae 4/48/117). Caribbean, Cuba; 1878; Poey, F.; original no. 188.

Status: Synonym of *Gymnothorax miliaris* (Kaup, 1856) (Böhlke et al., 1989:155).

Remarks: The type status of this specimen is doubtful, although it was treated as the holotype of *Muraena elaborata* by Böhlke (1982:41) and Böhlke et al. (1989:155). The original ledger entry, cataloged 2 March 1880, said *Gymnothorax elaboratus*, but *multiocellatus* was written directly above in the same handwriting. It is unclear whether *elaboratus* was crossed out and *multiocellatus* substituted or whether both were written together, one above the other. The word "type?" was written in the same hand in the "Locality" field. Later both names and the word "type?" were crossed out with a heavy line (obscuring any possible previous line) and "*miliaris*" was added in a different hand. A small linen tag with "188" is tied to the specimen; the significance of this is unknown, but it does not match the numbers given by Poey for either species. Poey gave a length of 510 mm for his specimen of *elaborata* and 450 mm for *multiocellata*. The TL of USNM 24961 is 424 mm; this is closer to the length of *multiocellata* than *elaborata*, but the match is not particularly good. The color pattern of the specimen matches the description of *multiocellata* better than that of *elaborata* (both are clearly synonyms of *miliaris*). The vertebral count of the specimen (118) matches that given by Poey for *elaborata*, but that for *multiocellata* was given as 119, and it is uncertain how significant a reported difference of one vertebra is. Moreover, it is difficult to imagine how Poey could have counted vertebrae without slitting the specimens, and USNM 24961 shows no sign of being cut. Finally, the date of collection given in the ledger is 1878, obviously much too late to have served as a type for either of Poey's species. It must be noted, however, that the "When Collected" field in some of the old ledger entries actually referred to the date received. The specimen is included in this type catalog because it has been cited

previously in the literature, but its type status is in considerable doubt.

Muraena pinta Jordan and Gilbert, 1882a:345.

Lectotype: USNM 28177 (505 mm, vertebrae 3/44/113). Pacific, Mexico; Mazatlan; 1880-1881; Gilbert, C.H. Paralectotypes: USNM 28197 (1, 511 mm). Same data as lectotype.

USNM 28238 (1, 18 inches; lost). Same data as lectotype. This specimen could not be found. The name was crossed out in the ledger and replaced by *Lutjanus aratus*, but there is no such specimen in the collection. The "Remarks" field in the ledger contains the following handwritten note: "Muraena pinta ret. same no. Gilbert Col." The meaning of this is unclear. The specimen may have been lost in the 1884 fire at Indiana University.

USNM 28388 (1, lost). Same data as lectotype; possibly lost in fire at Indiana University.

USNM 29608 (1, 413 mm). Same data as lectotype.

USNM 29359 (1, lost). Pacific, Mexico; San Josef (sic) Id.; Lieut. Nichols; possibly lost in fire at Indiana University.

Status: Synonym of *Muraena lentiginosa* Jenyns, 1842 (Jordan and Evermann, 1896:402).

Remarks: Lectotype designated here.

Muraena pintita Jordan and Gilbert, 1882a:346.

Holotype: USNM 28311 (19 inches; lost). Pacific, Mexico; Mazatlan, among rocks; 1880-1881; Gilbert, C.H.; possibly lost in fire at Indiana University.

Status: Treated as a synonym of *Gymnothorax dovii* (Günther, 1870) by Jordan and Evermann (1896:397). The description of the color pattern, i.e., chestnut brown with numerous small yellow dots on the upper body and tail, suggests that their interpretation was correct. *Gymnothorax castaneus* (Jordan and Gilbert, 1883), however, sometimes has small light spots, and the specimen conceivably could have been one of those. Without the type, it is impossible to know for certain.

Muraena retifera Goode and Bean, 1882:435.

Holotype: USNM 31393 (527 mm, vertebrae 4/56/134). Atlantic, South Carolina; Charleston; Leslie, C.C.; original no. 12.

Status: Valid.

Neomuraena nigromarginata Girard, 1858:171.

Holotype: USNM 860 (387 mm, vertebrae 7/48/142). Gulf of Mexico, Texas; St. Joseph's Id.; Wurdemann, G.; apparently recataloged as USNM 7004.

Status: Valid as *Gymnothorax nigromarginatus* (Girard, 1858). See Ginsburg (1951:461).

Remarks: Girard (1858:171) stated that his specimen was

collected at St. Joseph's Island, Texas by G. Wurde-
mann. He later (1859a:77) gave a catalog number for
it, USNM 860. This number could not be found, but
USNM 7004 was present, and it bore the same
collection data as USNM 860. It seems likely that
USNM 7004 is the same specimen as USNM 860,
which, for some reason, was later recataloged.
Ginsburg (1951:462) came to the same conclusion,
but erroneously designated 7004 as a neotype. The
specimen is a holotype.

Poecilophis pikei Steindachner in Bliss, 1883:61.

Syntype: USNM 153564 (391 mm, vertebrae 5/51/121).
Indian Ocean, Mascarene Is.; Mauritius; 1871–1873;
Pike, N.; formerly MCZ 6149.

Status: Synonym of *Echidna polyzona* (Richardson, 1845)
(pers. obs.).

Priodonophis angusticeps Hildebrand and Barton, 1949:5, fig.
2.

Holotype: USNM 144254 (510 mm, vertebrae 5/73/170).
Pacific, Peru; Talara; Jan–Apr 1946; Barton, O.;
drawn.

Status: Valid as *Gymnothorax angusticeps* (Hildebrand and
Barton, 1949).

Remarks: Böhlke et al. (1989:145) provisionally treated
Priodonophis and several other genera as synonyms
of *Gymnothorax*, pending a phylogenetic analysis of
the group. The present species therefore is treated as
Gymnothorax angusticeps.

Priodonophis equatorialis Hildebrand, 1946:134, fig. 31.

Holotype: USNM 127842 (795 mm, vertebrae 6/52/148).
Pacific, Peru; Gulf of Guayaquil off Mt. Organos, near
Cabo Blanco; 4°13'S, 80°13'W; 12 fm (22 m); 15 Aug
1941; Lobell, M.J.; U-02761; drawn.

Paratype: USNM 127843 (1, 625 mm). Same data as
holotype.

Status: Valid as *Gymnothorax equatorialis* (Hildebrand,
1946).

Remarks: See "Remarks" under *Priodonophis angusticeps*.

Priodonophis serratidens Hildebrand and Barton, 1949:3, fig.
1.

Holotype: USNM 144253 (510 mm, vertebrae 8/68/156).
Pacific, Peru; Talara; Jan–Apr 1946; Barton, O.;
drawn.

Status: Valid as *Gymnothorax serratidens* (Hildebrand and
Barton, 1949).

Remarks: See "Remarks" under *Priodonophis angusticeps*.

Rabula davisii Fowler, 1912:21.

Holotype: USNM 6673 (352 mm, vertebrae 5/64/146).

Pacific, California; San Diego; Cooper, J.G.

Status: Synonym of *Gymnothorax mordax* (Ayres, 1859)
(McCosker and Rosenblatt, 1975:422).

Rabula fuscomaculata Schultz in Schultz et al., 1953:147, fig.
30.

Holotype: USNM 141639 (173 mm, vertebrae 34/48/118).
Pacific, Marshall Is.; Rongerik Atoll, Latoback Id.,
lagoon reef; 14 Aug 1947; Brock, V.E., Schultz, L.P.,
and Donaldson, L.R.; S-1041.

Paratypes: USNM 141638 (16, 81–159 mm). Pacific,
Johnston Id.; northern ocean reef; 28–29 Aug 1947;
Schultz, L.P.; S-42-569.

USNM 141640 (9, 92–148 mm). Pacific, Marshall Is.;
Bikini Atoll, large, shallow tidal pool between Eman
and Reer Ids.; 18 Jul 1947; Brock, V.E., Hiatt, R.W.,
Schultz, L.P., and Myers, G.S.; S-46-422.

USNM 141641 (1, 84 mm). Pacific, Marshall Is.; Bikini
Atoll, Eman Id., channel reef at western end; 17 Jul
1947; Schultz, L.P., Brock, V.E., Hiatt, R.W., and
Myers, G.S.; S-46-405.

USNM 141642 (3, 93–132 mm). Pacific, Marshall Is.;
Bikini Atoll, Namu Id., lagoon reef; 6 Aug 1947;
Schultz, L.P., Brock, V.E., and Hiatt, R.W.

USNM 141643 (2, 146–150 mm). Pacific, Marshall Is.;
Cherry Id., ocean reef—not in surf; 18 Apr 1946;
Schultz, L.P.

USNM 141645 (1, 61 mm). Pacific, Marshall Is.; Boro Id.,
reef next to Boro Channel; 6 Apr 1946; Schultz, L.P.,
and Brock, V.E.; S-46-52.

USNM 141646 (1, 164 mm). Pacific, Marshall Is.; Bikini
Atoll, coral heads at eastern end of lagoon; 20–25 ft
(6–8 m); 26 Mar 1946; Schultz, L.P., and Brock, V.E.;
S-46-42.

USNM 141648 (2, 143–147 mm). Pacific, Marshall Is.;
Bikini Atoll, Arji Id., 100 yds (92 m) off shore, lagoon
coral area; 0–40 ft (0–12 m); 7 Aug 1946; Brock,
V.E., and Herald, E.S.; S-46-308.

USNM 141649 (18, 72–165 mm). Pacific, Marshall Is.;
Rongelap Atoll, Yugui Id., ocean reef next to small
boat passage, W side; 31 Jul 1946; Herald, E.S.;
S-46-304.

USNM 141650 (9, 93–148 mm). Pacific, Marshall Is.;
Rongelap Atoll, Mellu Id., lagoon reef; 19 Jun 1946;
Schultz, L.P., and Herald, E.S.; S-46-220.

USNM 141651 (2, 112–142 mm). Pacific, Marshall Is.;
Kwajalein Atoll, lagoon reef near southern end of
Ennylabegan Id.; 1 Sep 1946; Herald, E.S.; S-46-397.

USNM 141652 (5, 145–181 mm). Pacific, Marshall Is.;
Rongerik Atoll, lagoon reef, Latoback Id.; 28 Jun
1946; Schultz, L.P., and Herald, E.S.; S-46-238.

USNM 141653 (6, 118–169 mm). Pacific, Marshall Is.;
Eniwetok Atoll, Teiteiripucchi Id., lagoon reef; 1 Jun
1946; Schultz, L.P.; S-46-197.

- Status: Valid as *Gymnothorax fuscomaculatus* (Schultz in Schultz et al., 1953).
- Remarks: This species and *marshallensis* were placed in *Rabula* by Schultz because of their posteriorly placed dorsal fin, the character that supposedly distinguished the genus *Rabula*. McCosker and Rosenblatt (1975:422) showed that the type species of *Rabula* was based on an aberrant specimen that actually had an anterior dorsal-fin origin. They found no characters in *fuscomaculata* and *marshallensis*, apart from the posterior dorsal fin, that would separate them from *Gymnothorax*. In light of this, and in light of Böhlke et al.'s (1989:145) broad interpretation of *Gymnothorax*, the present species is treated as *Gymnothorax fuscomaculatus*.
- Two paratypes, formerly USNM 141644 (125 mm) and 141647 (177 mm), exchanged to FMNH, Jan 1959.
- Rabula marshallensis* Schultz in Schultz et al., 1953:149, fig. 31.
- Holotype: USNM 141687 (179 mm, vertebrae 34/52/133). Pacific, Marshall Is.; Kwajalein Atoll, lagoon reef near southern end of Ennylabegan Id.; 1 Sep 1946; Herald, E.S.; S-46-397.
- Paratypes: USNM 141688 (3, 125–141 mm). Same data as holotype; originally four specimens (128–160 mm), one (apparently the largest) exchanged to FMNH, 15 Jan 1959.
- USNM 141689 (2, 137–178 mm). Pacific, Marshall Is.; Jieroru Id., southeast corner, lagoon reef; 21 May 1946; Schultz, L.P.
- USNM 141690 (3, 136–161 mm). Pacific, Marshall Is.; Boro Id., reef next to Boro Channel; 6 Apr 1946; Schultz, L.P., and Brock, V.E.
- Status: Valid as *Gymnothorax marshallensis* (Schultz in Schultz et al., 1953).
- Remarks: See "Remarks" under *Rabula fuscomaculata*.
- Rhinamurena* [sic] *eritima* Jordan and Seale, 1906:196, fig. 6.
- Holotype: USNM 51717 (585 mm, vertebrae 4/62/140). Pacific, Samoa Is.; Pago Pago; 1902; Jordan, D.S., and Kellogg, V.L.
- Status: Synonym of *Enchelycore schismatorhynchus* (Bleeker, 1853) (Fowler, 1928:53).
- Scuticaria unicolor* Seale, 1917:94.
(Name preoccupied; see *Uropterygius sealei*).
- Sidera castanea* Jordan and Gilbert, 1883a:647.
- Lectotype: USNM 29591 (595 mm, vertebrae 5/58/144). Pacific, Mexico; Mazatlan; 1880–1881; Gilbert, C.H.
- Paralectotypes: USNM 28246 (1, ~600 mm, lost). Same data as lectotype; note in ledger says "not found 1914," possibly lost in fire at Indiana University; stated to be "about 2 feet in length."
- USNM 29535 (1, 1155 mm, vertebrae 7/59/147). Same data as lectotype; gutted.
- Status: Valid as *Gymnothorax castaneus* (Jordan and Gilbert, 1883). *Siderea* Kaup (the correct spelling) currently is treated as a synonym of *Gymnothorax*, pending phylogenetic studies of muraenid genera.
- Remarks: The holotype was not designated in the original description. I here designate one of the two extant specimens, USNM 29591, as the lectotype of *Sidera castanea* Jordan and Gilbert. This specimen is intact and in good condition. The other one has been gutted.
- Sidera chlevastes* Jordan and Gilbert, 1883b:208.
- Holotype: USNM 20385 (~235 mm, vertebrae 4/53/135). Pacific; exact locality unknown; Herendeen, Capt.
- Status: Synonym of *Gymnothorax rueppelliae* (McClelland, 1844) (McCosker and Rosenblatt, 1975:423).
- Remarks: The stated locality for this specimen, the Galapagos Is., is probably wrong (McCosker and Rosenblatt, 1975:423).
- Uropterygius cantonensis* Schultz, 1943:27, fig. 3a, pl. 4.
- Holotype: USNM 115904 (158 mm, vertebrae 91/93/103). Pacific, Phoenix Is.; Canton Id. lagoon among coral heads; 23–25 May 1939; Schultz, L.P.; U.39.396-459.
- Paratypes: USNM 115905 (8, 100–160 mm). Same data as holotype; originally 10 specimens (102–166 mm), two exchanged to MCZ in Jul 1951, now MCZ 37260.
- USNM 115906 (1, 155 mm). Pacific, Phoenix Is.; Canton Id., reef of the widest shallow channel; 13 May 1939; Schultz, L.P.
- USNM 115907 (1, 93 mm). Pacific, Phoenix Is.; Canton Id. lagoon; 23 Apr–12 May 1939; Schultz, L.P.
- Status: Valid as *Anarchias cantonensis* (Schultz, 1943). See Schultz in Schultz et al. (1953:146).
- Uropterygius dentatus* Schultz in Schultz et al., 1953:152, fig. 32.
- Holotype: USNM 141637 (373 mm, vertebrae 116/122/136). Pacific, Johnston Id.; northern ocean reef; 28–29 Aug 1947; Schultz, L.P.; S-42-569.
- Status: Synonym of *Uropterygius supraforatus* (Regan, 1909) (Gosline, 1958:224).
- Uropterygius diopus* Böhlke, 1967:91, fig. 1.
(Holotype: ANSP 106286).
- Paratypes: USNM 107046 (1, 153 mm). Caribbean, Isla de Providencia; 6 Aug 1938; Presidential Cruise 1938; Schmitt, W.L.
- USNM 199285 (1, 282 mm). Caribbean, Dominica; just north of Rav Anse Cola River (stream); a little south of Colihaut, up to 150 ft (46 m) from shore; 20 ft (6 m); 31 Oct 1964; Springer, V.G., and Reckeweg, R.H.; 0830–1045 hr; VGS 64-14.
- USNM 199286 (1, 230 mm). Caribbean, Dominica;

Rodney's Rock, west coast; 25 ft (8 m); 10 Nov 1964; Springer, V.G., and Reckeweg, R.H.; 0800–1300 hr; VGS 64-22.

USNM 199287 (1, 228 mm). Caribbean, Dominica; Rocky area just south of Mahaut (west coast), up to 75 ft (23 m) from shore; 25 ft (8 m); 29 Oct 1964; Springer, V.G., and Reckeweg, R.H.; 0830–1145 hr; VGS 64-10.

USNM 199288 (2, 212–230 mm). Caribbean, Dominica; Soufriere Bay at Scotts Head, 200 ft (61 m) from shore; 30–45 ft (9–14 m); 15 Nov 1964; Springer, V.G., Reckeweg, R.H., and Blatcher, R.B.; 1400–1600 hr; VGS 64-29.

Status: Synonym of *Uropterygius macularius* (Lesueur, 1825) (Böhlke et al., 1989:127).

Uropterygius fijiensis Fowler and Bean, 1923:9.

Holotype: USNM 82774 (582 mm, vertebrae 11/67/145). Pacific, Fiji Is.; Lebukeya; May 1840; U.S. Exploring Exped.; "according to the original color sketch obtained at Lebukeya, Fiji, in May, 1840" (Fowler and Bean, 1923:9).

Status: Synonym of *Gymnothorax polyuranodon* (Bleeker, 1853) (E.B. Böhlke and J.E. McCosker, pers. comm.).

Uropterygius fuscoguttatus Schultz in Schultz et al., 1953: 156–157, fig. 33.

Holotype: USNM 141680 (176 mm, vertebrae 94/100/114). Pacific, Marshall Is.; Bikini Atoll, 0.25 mi (0.4 km) off Amen Id. in lagoon; 30 ft (9 m); 4 Aug 1946; Herald, E.S., Brock, V.E., and Kohler, T.F.; S-46-307.

Paratypes: USNM 141675 (1, 148 mm). Pacific, Johnston Id.; northern ocean reef; 28–29 Aug 1947; Schultz, L.P.; S-42-569.

USNM 141676 (1, 63 mm). Pacific, Marshall Is.; Jieroru Id., southeast corner, lagoon reef; 21 May 1946; Schultz, L.P.; S-46-174; head detached.

USNM 141677 (2, 86–165 mm). Pacific, Marshall Is.; Rongelap Atoll, Mellu Id., lagoon reef; 19 Jun 1946; Schultz, L.P., and Herald, E.S.; S-46-220.

USNM 141679 (1, 185 mm). Pacific, Marshall Is.; Bikini Atoll, Bikini Id., ocean reef; 16 Jul 1946; Herald, E.S.

USNM 141681 (2, 163–189 mm). Pacific, Marshall Is.; Bikini Atoll, Arji Id., 100 yds. (92 m) off shore, lagoon coral area; 40 ft (12 m); 7 Aug 1946; Brock, V.E., and Herald, E.S.; S-46-308.

Status: Valid.

Remarks: One paratype, formerly USNM 141678 (140 mm), exchanged to FMNH, 15 Jan 1959.

Uropterygius goslinei McCosker, and Randall, 1977:167, figs. 3c, 5.

(Holotype: CAS 35253).

Paratype: USNM 215282 (1, 115 mm). Pacific, Caroline Is.;

lagoon edge of barrier reef 8 mi (13 km) NW of Koror Id., Republic of Palau; 7°24'30"N, 134°21'20"E; 7 ft (2 m); 19 Jul 1955; GVF-1955, sta 25; Fehlmann, H.A. et al.; 1330–1630 hr.

Status: Synonym of *Uropterygius fasciolatus* (Regan, 1909) (J.E. McCosker, pers. comm., 1994).

Uropterygius inornatus Gosline, 1958:225, figs. 1e, 2a.

Holotype: USNM 175007 (187 mm, vertebrae 124/126/133). Pacific, Hawaiian Is.; off Waikiki reef, Oahu; 25–35 ft (8–11 m); 31 Dec 1952; Gosline, W.A., Randall, J.E., Brock, V.E. et al.

Status: Valid.

Uropterygius kamar McCosker and Randall, 1977:164, figs. 3b, 4.

(Holotype: CAS 35251).

Paratype: USNM 215281 (1, 219 mm). Pacific, Solomon Is.; south side of Tanavula Point; 18–37 m (5–11 m); 30 Jul 1973; Randall, J., Allen, G.; original no. BPBM 15665.

Status: Valid.

Uropterygius leucurus Snyder, 1904:521, pl. 6, fig. 12.

Holotype: USNM 50871 (112 mm, vertebrae 100/105/112). Pacific, Hawaiian Is.; Auau Channel between Maui and Lanai Ids., Mokuhooniki Islet, N 19°45', E 18.2'; 21–28 fm (38–51 m); 12 Apr 1902; *Albatross* 3874; 1038 hr.

Status: Valid as *Anarchias leucurus* (Snyder, 1904). See Schultz in Schultz et al. (1953:144).

Uropterygius makatei Gosline, 1958:227, figs. 1f, 2b.

Holotype: USNM 175008 (230 mm, vertebrae 95/96/109). Pacific, Tuamotu Arch.; Makatea, just west of phosphate dock; 15 Mar 1956; Randall, J.E.

Status: Possibly valid, but distinction from *U. macrocephalus* needs further clarification (pers. obs.).

Uropterygius reidi Schultz, 1943:32, pl. 5.

Holotype: USNM 116077 (83 mm, vertebrae 93/95/109). Pacific, Samoa Is.; Tau Id. reef at Siulagi Pt.; 27 Jun 1939; Schultz, L.P.

Paratype: USNM 116078 (1, 52 mm). Same data as holotype; originally two specimens, one (59 mm) exchanged to MCZ in Jul 1951, now MCZ 37250.

Status: Synonym of *Uropterygius macrocephalus* (Bleeker, 1865) (McCosker et al., 1984:263).

Uropterygius sealei Whitley, 1932:330.

(Holotype: MCZ 9188).

Paratype: USNM 150552 (1, 552 mm). Pacific, Society Is.; Garrett, A.; formerly MCZ 9188A.

Status: Synonym of *Uropterygius bennettii* (Günther, 1870) (McCosker et al., 1984:262).

Remarks: Substitute name for *Scuticaria unicolor* Seale, 1917, preoccupied.

Uropterygius versutus Bussing, 1991:97, figs. 1-3.

(Holotype: LACM 32517-52).

Paratypes: USNM 308980 (5, 252-334 mm). Pacific, Costa Rica; Isla del Coco, Bahia Wafer, SE peninsula, Presidio; 0.3 m; 21 Apr 1975; formerly UCR 868.

Status: Valid.

NEMICHTHYIDAE

Labichthys carinatus Gill and Ryder, 1883a:261.

Holotype: USNM 33369 (447 mm, vertebrae 6/10/171, 68 precaudal). Atlantic; Nantucket to Cape Sable, Nova Scotia; 41°13'00"N, 66°00'50"W; 0-906 fm (0-1658 m); 4 Sep 1883; *Albatross* 2076.

Status: Valid.

Labichthys elongatus Gill and Ryder, 1883a:262.

Holotype: USNM 33577 (542 mm, vertebrae 6/20/200, 70 precaudal). Atlantic; Cape Hatteras to Nantucket; 39°22'00"N, 68°34'30"W; 0-1628 fm (0-2979 m); 3 Oct 1883; *Albatross* 2100.

Status: Synonym of *Avocettina infans* (Günther, 1878) (Nielsen and Smith, 1978:24).

Labichthys gilli Bean, 1890:45.

Holotype: USNM 44239 (425 mm, vertebrae 7/22/182, 65 precaudal). Pacific, Alaska; Sitka to Columbia River, E. of Prince of Wales Id.; 55°20'N, 136°20'W; 0-1569 fm (0-2871 m); 29 Aug 1888; *Albatross* 2859.

Status: Synonym of *Avocettina infans* (Günther, 1878) (Nielsen and Smith, 1978:24).

Nematoprora polygonifera Gilbert, 1905:587, fig. 234.

Holotype: USNM 51589 (315 mm). Pacific, Hawaiian Is.; vicinity of Madu Manu, or Bird Id., center of Bird Id., S 32°, W 12.8'; 0-800 fm (0-1464 m); 5 Aug 1902; *Albatross* 4151; 1757 hr.

Status: Synonym of *Nemichthys scolopaceus* Richardson, 1848 (Nielsen and Smith, 1978:38).

Nemichthys avocetta Jordan and Gilbert, 1881:409.

Holotype: USNM 27399 (~495 mm, vertebrae 3/11/~305+). Pacific, Washington; harbor at Port Gamble; May 1880; Jordan, D.S.

Status: Synonym of *Nemichthys scolopaceus* Richardson, 1848 (Nielsen and Smith, 1978:38).

Nemichthys fronto Garman, 1899:324, pl. 65, fig. 1.

Lectotype: USNM 153591 (605 mm, vertebrae 3/13/218+, 80 precaudal). Pacific, Panama; 7°31'30"N, 79°14'W; 0-458 fm (0-838 m); 8 Mar 1891; *Albatross* 3384.

Status: Considered a synonym of *Nemichthys scolopaceus* Richardson, 1848, by Nielsen and Smith (1978:38).

Remarks: The lectotype was designated by Nielsen and Smith (1978:69).

Nemichthys larseni Nielsen and Smith, 1978:54, figs. 34-36.

Holotype: USNM 217376 (female, 588 mm, vertebrae 5/10/396, 82 precaudal). Pacific, Mexico; 29°50'30"N, 117°22'W; 0-170 m; 19 May 1966; formerly SIO 66-266.

Paratypes: USNM 219537 (1, 548 mm). Pacific, California; 35°14'N, 123°48'W; 6 Mar 1962; *Black Douglas* 6203b, 70.80; Berry, F.H.; 2300 hr; formerly SIO 63-331.

USNM 219538 (1, 480 mm). Pacific, California; 35°14'00"N, 123°52'00"W; 24 m; 9-10 Aug 1962; *John N. Cobb* 6208, 70.80; 2312-0112 hr; formerly SIO 62-410.

USNM 219539 (1, 605 mm). Pacific, California; 32°55'N, 133°28'W; ~298 m; 31 Mar 1962; *Horizon* 6204, 60.200; 0255-0425 hr; formerly SIO 63-408.

USNM 219542 (male, 554 mm). Pacific, Hawaiian Is.; 21°10'N, 158°10'W; 0-800 m; 11 Sep 1969; Clarke, T.; 69-9-25.

USNM 219543 (1, 607 mm). Pacific, Hawaiian Is.; 21°10'N, 158°10'W; ~0-190 m; 16 Sep 1970; Clarke, T.; 2006-2222 hr; 70-9-11.

Status: Valid.

Paravocettinops trilinearis Kanazawa and Maul, 1967:3, 3 figs., 2 pls.

(Holotype: MMF 21163).

Paratype: USNM 201410 (male, 535 mm). Atlantic, Madeira Is.; ~0-1000 m; 10 Mar 1967; from stomach of *Aphanopus carbo* (Lowe); formerly MMF 22173.

Status: Synonym of *Nemichthys scolopaceus* Richardson, 1848 (Nielsen and Smith, 1978:38).

NETTASTOMATIDAE

Chlopsis equatorialis Gilbert, 1891a:347.

Holotype: USNM 44391 (368 mm, vertebrae 18/57/247). Pacific, Ecuador; 0°37'00"S, 81°00'00"W; 401 fm (734 m); 2 Mar 1888; *Albatross* 2792.

Status: Valid as *Facciolella equatorialis* (Gilbert, 1891). See Smith and Castle (1982:6).

Chlopsis fierasfer Jordan and Snyder, 1901:860, fig. 10.

(Holotype: CAS-SU 6471).

Paratype: USNM 49728 (1, 365+ mm). Pacific, Japan; Wakanoura, Kii; 1900; Jordan, D.S., and Snyder, J.O.; USNM 49728 is thought to have been recataloged by error as USNM 49897; both numbers are on the jar.

Status: The status of the species is uncertain, but the correct genus is *Saurenhelys* Peters (see Smith, 1989d:591).

Hoplunnis diomediana Goode and Bean, 1896:146, fig. 163.

Lectotype: USNM 44240 (male, 418 mm, vertebrae 5/38/239). Gulf of Mexico, Florida; off Cape San Blas; 28°36'N, 85°33'30"W; 111 fm (203 m); 14 Mar 1885; *Albatross* 2402. Of the three specimens originally in this lot, one was sent on exchange to Stanford University (CAS-SU 9570) and one was recataloged as USNM 152574 and made the holotype of *Hoplunnis tenuis* Ginsburg. A handwritten note in the jar says "found dried in broken jar Oct. 1963 RHK." The meaning is unclear; the specimen does not appear to have been dried.

Paralectotype: USNM 152574 (1, 390 mm). Same data as holotype. Removed from USNM 44240; holotype of *Hoplunnis tenuis*.

Status: Valid.

Remarks: The lectotype was designated by Ginsburg (1951:449).

Hoplunnis macrura Ginsburg, 1951:451, fig. 5.

Holotype: USNM 152565 (male, 373 mm, vertebrae 5/36/168+). Gulf of Mexico, Mississippi; 29°14'N, 88°35'W; 40 fm (73 m); 13 Jul 1950; *Oregon* 49.

Paratype: USNM 152566 (female, 411 mm). Gulf of Mexico, Louisiana; 29°11'N, 88°50'30"W; 38 fm (70 m); 12 Sep 1950; *Oregon* 100.

Status: Valid.

Hoplunnis megista Smith and Kanazawa in Smith, 1989d:579, figs. 614–617.

Holotype: USNM 193613 (male, 695 mm, vertebrae 9/56/274). Caribbean, Panama; 9°03'N, 81°22'W; 200–220 fm (366–403 m); 31 May 1962; *Oregon* 3598. Originally three specimens, two exchanged to ANSP as paratypes, now ANSP 138773 (709 mm) and 147544 (770 mm).

Paratypes: USNM 193598 (3, 660–905 mm). Caribbean, Nicaragua; 12°23'N, 82°29'W; 200 fm (366 m); 2 Jun 1962; *Oregon* 3610.

USNM 220039 (2, 910–917 mm). Caribbean, Panama; 9°47'N, 79°25'W; 230 fm (421 m); 19 Oct 1965; *Oregon* 5740.

Status: Valid.

Hoplunnis similis Smith, 1989d:586, figs. 617, 625–627.

(Holotype: ANSP 130814).

Paratypes: USNM 158320 (1, 459 mm). Atlantic, Florida; 27°27'N, 78°58'W; 180 fm (329 m); 2 Feb 1957; *Combat* 235.

USNM 193548 (4, 321–449 mm). Caribbean, Honduras; 16°45'N, 81°27'W; 150 fm (275 m); 7 Jun 1962; *Oregon* 3626.

USNM 217404 (7, 378–493 mm). Caribbean, Nicaragua; 14°10'N, 81°57'30"W; 80 fm (146 m); 12 Feb 1967; *Oregon* 6461.

Status: Valid.

Hoplunnis tenuis Ginsburg, 1951:448, fig. 4.

Holotype: USNM 152574 (female, 390 mm, vertebrae 5/36/236+). Gulf of Mexico, Florida; 28°36'N, 85°33'30"W; 111 fm (203 m); 14 Mar 1885; *Albatross* 2402. Removed from USNM 44240; also a paralectotype of *Hoplunnis diomediana* Goode and Bean.

Status: Valid.

Metopomycter denticulatus Gilbert, 1905:585, fig. 233.

Holotype: USNM 52191 (778 mm, vertebrae 7/52/159+). Pacific, Hawaiian Is.; vicinity of Kauai Id., Hanamaulu warehouse, S 43°, W 8.1'; ~550–409 fm (~1007–748 m); 21 Jun 1902; *Albatross* 4019; 1014 hr; TT-2659.

Status: Considered a synonym of *Nettastoma parviceps* Günther, 1877 by Smith et al. (1981).

Nettastoma procerum Goode and Bean, 1883:224.

Syntype: USNM 153585 (1, ~325 mm, vertebrae 6/–/171+). Atlantic, North Carolina; south of Cape Hatteras; 33°35'20"N, 76°00'00"W; 647 fm (1184 m); 14 Jul 1880; *Blake* 325; in three pieces; formerly MCZ 28035.

Status: Valid as *Venefica procera* (Goode and Bean, 1883). See Jordan and Davis (1891:652).

Remarks: Smith (1989d:611–612) apparently was mistaken in assuming that one of the three specimens described by Goode and Bean (1883:224) was a holotype. Although measurements were given for only one specimen, the authors did not refer to this specimen in any way as the type, and they did refer to "specimens" in their description. I therefore regard the three specimens as syntypes. One is currently MCZ 25902. The whereabouts of the third specimen, from *Blake* station 327 and described as mutilated, is unknown; it may have been lost or discarded.

Nettastoma syntresis Smith and Böhlke in Smith et al., 1981:546, figs. 4, 5B, 6B.

Holotype: USNM: 219849 (male, 442 mm, vertebrae 5/40/201). Caribbean, Cuba; 23°40'N, 79°18'W; 290 fm (531 m); 5 Nov 1960; *Silver Bay* 2458; removed from USNM 197345.

Paratypes: USNM 157939 (1, 445+ mm). Atlantic, Bahama Is.; 22°55'N, 79°16'W; 240 fm (439 m); 16 Jul 1955; *Oregon* 1341.

USNM 158936 (1, 482 mm). Atlantic, Bahama Is.; 23°59'N, 79°43'W; 350 fm (641 m); 24 Jul 1957; *Combat* 450.

USNM 197127 (2, 270–360 mm). Atlantic, Bahama Is.; 23°59'N, 79°17'W; 290–300 fm (531–549 m); 7 Nov 1960; *Silver Bay* 2469.

USNM 197342 (1, 547+ mm). Atlantic, Bahama Is.; 24°48'N, 79°17'W; 300 fm (549 m); 8 Nov 1961;

Silver Bay 2475.

USNM 197345 (6, 251–453 mm). Atlantic, Bahama Is.; 23°40'N, 79°18'W; 290 fm (531 m); 5 Nov 1960; *Silver Bay 2458*. Five of the original 12 specimens were removed to USNM 219869, non-types; one specimen was removed to USNM 219849, the holotype.

USNM 202953 (1, 260 mm). Atlantic, Bahama Is.; 23°30'N, 79°27'W; 300 fm (549 m); 8 Nov 1961; *Silver Bay 3514*.

Status: Valid.

Nettenchelys pygmaeus Smith and Böhlke in Smith et al., 1981:551, figs. 8A, 9, 10.

(Holotype: ANSP 142277).

Paratype: USNM 200779 (1, 151 mm). Caribbean, Venezuela; 10°42'N, 67°56'W; 115 fm (210 m); 28 Sep 1965; *Oregon 5628*.

Status: Valid.

Remarks: As the suffix *-enchelys* is feminine, the specific name should be spelled *pygmaea*.

Saurenychelys cognita Smith, 1989d:593, figs. 632–633.

Holotype: USNM 185621 (360 mm, vertebrae 8/33/201). Gulf of Mexico, Florida; 29°50'N, 86°30'W; 50 fm (92 m); 21 Mar 1954; *Oregon 944*.

Paratype: USNM 157940 (1, 310 mm). Atlantic, South Carolina; 31°54'N, 79°28'W; 40 fm (73 m); 12 Mar 1956; *George M. Bowers B-54*.

Status: Valid.

Venefica tentaculata Garman, 1899:319, pl. M, fig. 2.

Syntypes: USNM 57895 (1, 760 mm, vertebrae 8/63/199+?). Pacific, Cocos Ridge; 5°43'00"N, 85°50'00"W; 978 fm (1790 m); 25 Feb 1891; *Albatross 3363*.

USNM 153604 (1, 535+ mm, vertebrae 8/60/170+). Pacific, Mexico; 16°33'00"N, 99°52'30"W; 660 fm (1208 m); 11 Apr 1891; *Albatross 3418*; formerly MCZ 28441.

Status: Valid.

OPHICHTHIDAE

Apterichthys selachops Jordan and Gilbert, 1882c:356.

Holotype: USNM 4391 (364 mm, vertebrae –/–/140, anus at vertebra 53). Pacific, Mexico; Cape San Lucas; Xantus, J.

Status: Valid as *Ichthyapus selachops* (Jordan and Gilbert, 1882). See McCosker (1977:68).

Bascanichthys bascanoides Osburn and Nichols, 1916:147, fig. 4.

Holotype: USNM 87541 (763 mm, vertebrae 2/93/180). Pacific, Mexico; Lower California, off San Cristobal

Bay; 15 Mar 1911; Townsend Exp.; *Albatross*; formerly AMNH 5201; TT A1689; taken from stomach of *Mycteroperca venadorum*.

Status: Valid.

Bascanichthys cylindricus Meek and Hildebrand, 1923:152, pl. 8, fig. 1.

Holotype: USNM 82210 (785 mm, vertebrae 2/106/210). Pacific, Panama; Chame Point; Tweedlie, R.

Paratypes: USNM 82209 (9, 238–697 mm). Pacific, Panama; Chame Point; Tweedlie, R.; mouth of one drawn. (Note: five specimens were on loan at the time this was written; the lengths given are those of the four remaining specimens.)

Status: Valid.

Bascanichthys panamensis Meek and Hildebrand, 1923:151, pl. 7.

Holotype: USNM 82211 (735 mm, vertebrae 3/99/177). Pacific, Panama; Chame Point; 26 Jul 1913; Tweedlie, R.

Paratypes: USNM 82212 (4, 348–524 mm). Same data as holotype; mouth of one drawn.

USNM 82213 (1, 156 mm). Same data as holotype.

USNM 82225 (112, 168–730 mm). Same data as holotype.

Status: Valid.

Remarks: Meek and Hildebrand stated that "this eel is represented by 115 specimens, ranging in length from 155 to 735 mm in length, all taken at Chame Point by Mr. Robert Tweedlie." There are in fact 118 such specimens in the USNM collection. The 735 mm specimen is the holotype, the 155 mm specimen is presumably USNM 82213. There is no way to sort the four lots to get 115 specimens, hence all are considered types.

Benthenchelys cartieri Fowler, 1934:267, fig. 29.

Holotype: USNM 92356 (115 mm, vertebrae 46/50/167). Pacific, Philippine Is.; between Panay and Negros, Lusaram Lt., N 23° E, 25.50 mi (41 km); 10°05'45"N, 122°18'30"E; 638 fm (1168 m); 30 Mar 1908; *Albatross 5185*; 1726 hr.

Paratypes: USNM 93349 (4, 97–105 mm). Same data as holotype.

Status: Valid.

Remarks: A sixth specimen of this species, USNM 93350, also was collected by the *Albatross* in the Philippines. Fowler stated explicitly, however, that there were four paratypes, and the four specimens of USNM 93349 came from the same station as the holotype. USNM 93350 therefore is not considered a paratype.

Brachysomophis henshawi Jordan and Snyder, 1904:940.

Holotype: USNM 51399 (485 mm, vertebrae 20/67/134).

Pacific, Hawaiian Is.; Honolulu; Berndt, E.L. USNM 51399 is thought to have been recataloged by error as USNM 51654; metal tags bearing both numbers are in the jar with the single specimen.

Status: Valid.

Brachysomophis sauropsis Schultz, 1943:18, fig. 2h, pl. 2.

Holotype: USNM 115946 (female, 572 mm, vertebrae 18/63/122). Pacific, Samoa Is.; Tutuila Id., reef at Alofau, Samoa; 3 Jun 1939; Schultz, L.P.

Paratype: USNM 115948 (1, 178 mm). Pacific, Samoa Is.; Tutuila Id. reef at Pagai; 4 Jun 1939; Schultz, L.P., and Taiga, F.

Status: Valid.

Remarks: One paratype, formerly USNM 115947 (462 mm), exchanged to MCZ in Jul 1951, now MCZ 37226.

Caecula bascanium Jordan, 1884:43.

Neotype: USNM 219832 (560 mm, vertebrae 1/102/189). Gulf of Mexico, Florida; tidal stream near old FSU marine lab., Alligator Harbor; 2 Oct 1971; Yerger, R.W., and class; RWY 856; formerly FSU 21239.

Status: Valid as *Bascanichthys bascanium* (Jordan, 1884). See Jordan and Davis (1891:621).

Remarks: Neotype designated by Leiby and Yerger (1980:402).

Caecula (Sphagebranchus) platyrhyncha Gosline, 1951a:312, figs. 1, 14b, 14d.

Holotype: USNM 152543 (430 mm vertebrae -/122, anus at vertebra 48). Pacific, Hawaiian Is.; Oahu, Hauula Park, between Laie and Kaneohe; 28 Jun 1949; Gosline, W.A. et al.

Paratypes: USNM 152544 (3, 164–355 mm). Pacific, Hawaiian Is.; Oahu, tide pool at Popukea, near mouth of Waianae R.; 22 Nov 1948; Gosline, W.A., Brock, V.E. et al.; G-48-2.

Status: Synonym of *Ichthyapus vulturis* (Weber and de Beaufort, 1916) (McCosker, 1979:63).

Callechelys bilinearis Kanazawa, 1952:72, fig. 9.

(Holotype: FMNH 48973).

Paratype: USNM 157363 (1, 571 mm). Atlantic, Bermuda; taken from stomach of 7 pound porgy; 9 fm (16 m); 17 Dec 1937; Astwood; LLM-175; 571 MM; formerly FMNH 48974.

Status: Valid.

Callechelys eristigmus McCosker and Rosenblatt, 1972:16, figs. 1, 2a, 5.

(Holotype: SIO 65-263).

Paratype: USNM 201124 (1, 494 mm). Pacific, Mexico; Gulf of California, Ceralbo Id.; 24°09'N, 109°51'48"W; 21 Jun 1961; Rosenblatt, R.; RR

61-34; formerly SIO 61-256.

Status: Valid.

Callechelys galapagensis McCosker and Rosenblatt, 1972:18, figs. 2b, 3, 5.

(Holotype: SIO 72-1).

Paratype: USNM 89728 (1, 312 mm). Pacific, Galapagos Is.; Charles Id., Black Beach anchorage; 22 Jun 1929; Fisher, A.K.

Status: Valid.

Callechelys luteus Snyder, 1904:517, pl. 3, fig. 5.

Holotype: USNM 50864 (830 mm, vertebrae H/124/216). Pacific, Hawaiian Is.; south coast of Molokai Id., Lae-o ka Laau Lt., N 69°, W 2.8'; 6 fm (11 m); 31 Mar 1902; *Albatross* 3821; 1910 hr; "caught while swimming about the ship at night, attracted by the lights."

Status: Valid.

Callechelys muraena Jordan and Evermann, 1887:466.

Holotype: USNM 37996 (330 mm, vertebrae H/80/141). Gulf of Mexico, Florida; snapper banks, between Pensacola and Tampa Bay; 1886; Stearns, S.

Status: Valid.

Callechelys peninsulae Gilbert, 1891b:548.

Holotype: USNM 44297 (261 mm, vertebrae 3/57/152). Pacific, Mexico; La Paz Bay, Gulf of California; 1888–1889; *Albatross*.

Status: Synonym of *Myrichthys xysturus* (Jordan and Gilbert, 1882). See Storey (1939:79).

Cirricaecula johnsoni Schultz in Schultz et al., 1953:50, figs. 11h, 12.

Holotype: USNM 141188 (402 mm, vertebrae -/119, anus at vertebra 54). Pacific, Marshall Is.; Rongerik Atoll, Bock Id., ocean reef; 27 Jun 1946; Schultz, L.P., and Herald, E.S.; S-46-237.

Paratypes: USNM 141189 (2, 348–? mm). Same data as holotype. Originally three specimens (324–353 mm) were in this lot; one was exchanged to FNMH on 15 Jan 1959. One of the remaining specimens was cleared and stained, but it cannot be found. The remaining alcohol specimen measures 348 mm.

Status: Valid.

Cryptopterygium holochroma Ginsburg, 1951:482, fig. 15.

Holotype: USNM 154994 (801 mm, vertebrae H/108/167). Atlantic, North Carolina; 33°30'N, 78°13'30"W; 12 fm (22 m); 13 Feb 1940; *Pelican* 183-9.

Status: Synonym of *Callechelys springeri* (Ginsburg, 1951) (McCosker et al., 1989:311).

Dalophis boulengeri Blache and Bauchot, 1972:751, figs. 26–28.

(Holotype: MNHN 1971-135).

- Paratypes: USNM 214143 (2, 275–346 mm). Atlantic, Senegal; Plage de Tiaroye (environs de Dakar, Senegal); 7 Apr 1967; Champagnat, J.; formerly as MNHN 1971-142.
Status: Valid.
- Echidna uniformis* Seale, 1901:62.
(Holotype: BPBM 47).
Paratype: USNM 109383 (1, 126 mm). Pacific, Mariana Is.; Agana, Guam; 2 Jun 1900; Seale, A.; formerly BPBM 46.
Status: Synonym of *Muraenichthys macropterus* Bleeker, 1857 (Schultz in Schultz et al., 1953:73).
- Ethadophis akkistikos* McCosker and J.E. Böhlke, 1984:41, figs. 12–14.
(Holotype: ANSP 149884).
Paratype: USNM 263570 (1, 237 mm). Gulf of Mexico, Alabama; 29°58'N, 87°57'W; 33 m; 27 Jun 1977; Heard, R.; formerly USA 04323.
Status: Valid.
- Gordiichthys ergodes* McCosker, Böhlke, and Böhlke, 1989:344, figs. 344–347.
Holotype: USNM 272462 (339 mm, vertebrae 1/98/186). Gulf of Mexico; continental shelf between Naples, Florida, and Biloxi, Mississippi (exact location not recorded); Reinek box core sample; 10–189 m; 1975–1978; MAFLA program, station unknown.
Status: Valid.
- Gordiichthys irretitus* Jordan and Davis, 1891:644.
Holotype: USNM 44303 (~790 mm, vertebrae 4/103/197). Gulf of Mexico, Florida; snapper banks off Pensacola, Florida; poor condition, partly digested.
Status: Valid.
- Gordiichthys leiby* McCosker and J.E. Böhlke, 1984:36, figs. 7–8.
(Holotype: ANSP 110417).
Paratype: USNM 263571 (1, 424 mm). Atlantic, Florida; 28°50'N, 80°10'W; 49 m; 25 Jun 1982; *Delaware II* 88; formerly CAS 51162.
Status: Valid.
- Gordiichthys randalli* McCosker and J.E. Böhlke, 1984:38, figs. 9–11.
(Holotype: ANSP 151690).
Paratype: USNM 263572 (1, 598 mm). Caribbean, Puerto Rico; Aguadilla, crashboat basin; ~30 m off NW corner of main pier; 10.5 m; 11 Nov 1965; Randall, J.E.
Status: Valid.
- Gordiichthys springeri* Ginsburg, 1951:484, fig. 16.
Holotype: USNM 121604 (372 mm, vertebrae H/108/171). Atlantic, Florida; off Salerno, Florida; 1–3 Jul 1943; Springer, S.; from stomach of *Carcharhinus milberti*.
Status: Valid as *Callechelys springeri* (Ginsburg, 1951).
See Rosenblatt and McCosker (1970:494).
- Leptenchelys pinnaceps* Schultz, 1953:79, fig. 16.
Holotype: USNM 141691 (97 mm, vertebrae 4?-/204). Pacific, Marshall Is.; Bikini Atoll, Romuk Id., ocean reef; 1 Apr 1946; Schultz, L.P.; S-46-47.
Paratype: USNM 202543 (1, 174 mm). Pacific, Marshall Is.; Eniwetok Atoll, Rigili Id.; 10 Aug 1949; Welander, A.D.; formerly UW 8807.
Status: McCosker (1970:506) synonymized this species with *Callechelys melanotaenia* (Bleeker, 1864). Randall and Wheeler (1991:762) showed that the latter is a junior synonym of *Callechelys catostomus* (Forster, 1801).
- Leptenchelys vermiformis* Myers and Wade, 1941:73, pl. 10.
Holotype: USNM 101785 (115 mm, vertebrae -/88/163). Pacific, Costa Rica; Playa Blanca; 40 fm (73 m); 8 Feb 1935; Schmitt, W.L.; 462-35.
Status: Valid.
- Leptocephalus caudomaculatus* Eigenmann and Kennedy, 1902:87, fig. 5.
Syntypes: USNM 49758 (2, 37–48 mm, myomeres ~45/73/~129, ~60/74/~127). Atlantic; Cape Hatteras to Charleston, S.C.; 34°57'N, 75°43'30"W; 0–15 fm (0–27 m); 18 Oct 1885; *Albatross* 2597.
USNM 49759 (2, 46–50 mm, myomeres 57/74/131, 61/76/133). Same data as holotype.
Status: Larva of *Echiophis intertinctus* (Richardson, 1848) (McCosker et al., 1989:359).
Remarks: Although all four specimens came from the same station, they were cataloged in two lots. The original lengths were given as 42, 54, 57, and 59 mm.
- Leptocephalus gilberti* Eigenmann and Kennedy, 1902:92, fig. 14.
Holotype: USNM 49766 (65 mm, myomeres 12/-/105/~182). Atlantic; Cape Hatteras to Charleston, S.C.; 34°57'N, 75°43'30"W; 0–15 fm (0–27 m); 18 Oct 1885; *Albatross* 2597; original length 73 mm.
Status: Larva of *Bascanichthys bascanium* (Jordan, 1884) (McCosker et al., 1989:331).
- Leptocephalus mucronatus* Eigenmann and Kennedy, 1902:90, fig. 11.
Syntypes: USNM 49746 (2, 67–71 mm; myomeres 51/68/~144, 52/72/150). Atlantic; Cape Sable to Cape May; 41°07'00"N, 65°26'30"W; 0–1710 fm (0–3129 m); 3 Sep 1885; *Albatross* 2575.
USNM 49747 (1, 78 mm; myomeres 52/77/~155–160). Atlantic; 38°25'N, 72°40'W; 1883–1887; *Albatross*.

Status: Larva of *Ophichthus cruentifer* (Goode and Bean, 1896) (McCosker et al., 1989:384).

Remarks: The description gives the station information as "Albatross station 2575, lat. 38°25' north, long. 72°40' west," but the position is not that of the station. A label in USNM 49746 bears station number 2575 but gives no position; a label in USNM 49747 gives a position but no station number. The lots apparently came from two different stations. The original lengths were given as 75, 80, and 82 mm.

Letharchus aliculatus McCosker, 1974:626, fig. 6.

(Holotype: MZUSP 9984).

Paratypes: USNM 210600 (3, 121–202 mm). South America, Brazil; Bahia, Salvador, Perto de Tibras, off the S. end of Parque Interlagos; 0–1 m; 1 May 1973; Dawson, C.E., and party; from GCRL 10807.

Status: Valid.

Letharchus pacificus Osburn and Nichols, 1916:146, fig. 3.

Holotype: USNM 87540 (137 mm, vertebrae H/–/167, anus at vertebra 102). Pacific, Mexico; Cape San Lucas; 23 Mar 1911; *Albatross*; formerly AMNH 5200.

Status: Valid as *Paraletarchus pacificus* (Osburn and Nichols, 1916). See McCosker (1974:620).

Letharchus rosenblatti McCosker, 1974:625, figs. 1, 4, 5.

(Holotype: SIO 67-40).

Paratypes: USNM 209339 (2, 172–208 mm). Pacific, Panama; Gulf of Chiriqui, SE end of Bahia Demas and Boca Grande; large sand flat exposed at low tide; 7°23'35"N, 81°38'45"W; 0–0.5 ft (0–0.2 m); 17 Sep 1970; McCosker, J.E., and McCosker, S.; 1100–1300 hr.

Status: Valid.

Letharchus velifer Goode and Bean, 1882:437.

Lectotype: USNM 31458 (453 mm, vertebrae 1/–/139). Gulf of Mexico, Florida; west Florida; Kaiser and Martin; original no. 5762 (from ledger, meaning unknown); three paralectotypes removed to USNM 278182.

Paralectotypes: USNM 278182 (3, 386–480 mm). Same data as lectotype; removed from USNM 31458 (lectotype).

Status: Valid.

Remarks: Goode and Bean described this species from four specimens, USNM 31458, without designating a holotype. Jordan and Evermann (1900:3244), in the caption to figure 160, stated "drawing by H.L. Todd from the type, No. 31458, U.S.N.M." This constitutes a lectotype designation according to Article 74(a) and 74(c) of the ICZN. McCosker (1974:625), for reasons not explained, referred to "USNM 31458, the holotype." McCosker, Böhlke, and Böhlke (1989:317) recognized that the specimen was not a holotype and

designated it as the lectotype. The remaining three specimens were removed to USNM 278182 as paralectotypes. McCosker et al.'s (1989) action was incorrect, however, because Jordan and Evermann (1900:3244) already had designated a lectotype. One of McCosker et al.'s "paralectotypes" bears a metal tag reading "DRN" (i.e., drawn). This specimen is clearly the one illustrated in Jordan and Evermann (1900) and called by them the "type." This specimen now measures 453 mm and is the true lectotype; it now bears the catalog number 31458, and the other, incorrectly designated, specimen (now 386 mm) has been placed in USNM 278182.

The generic name was spelled two different ways in the description (Goode and Bean, 1882:437): with a "ch" in the generic description and with a "c" in the species description and the title. The correct form is with the "ch," which has been used uniformly since the original description.

Machaerenchelys phoenixensis Schultz, 1943:16, fig. 2c, pl. 1.

Holotype: USNM 115940 (335 mm, vertebrae 9/68/166).

Pacific, Phoenix Is.; Canton Id. lagoon among coral heads; 23–25 May 1939; Schultz, L.P.; U.39.396–459.

Status: Synonym of *Leiuranus semicinctus* (Lay and Bennett, 1839) (Schultz in Schultz et al., 1953:60).

Machaerenchelys vanderbilti Fowler, 1938:85, pl. 7, fig. 14.

(Holotype: ANSP 68367).

Paratype: USNM 119702 (1, 260 mm). Pacific, Tuamotu Archipelago; Takaroa; 29 Mar 1937; Geo. Vanderbilt S. Pac. Exped.; formerly ANSP 68368.

Status: Synonym of *Leiuranus semicinctus* (Lay and Bennett, 1839) (Schultz in Schultz et al., 1953:60).

Microdonophis erabo Jordan and Snyder, 1901:870, fig. 17.

(Holotype: CAS-SU 6477).

Paratype: USNM 49924 (1, 567 mm). Pacific, Japan; Misaki, Sagami; 1900; Jordan, D.S., and Snyder, J.O.

Status: Valid as *Ophichthus erabo* (Jordan and Snyder, 1901). See McCosker (1977:81).

Microdonophis fowleri Jordan and Evermann, 1903:164.

Holotype: USNM 50613 (580 mm, vertebrae 10/79/152).

Pacific, Hawaiian Is.; Honolulu market; 21 Jul 1901; Jordan, D.S., and Evermann, B.W.; original no. 3431.

Status: Synonym of *Ophichthus erabo* (Jordan and Snyder, 1901) (McCosker, 1979:65).

Microdonophis macgregori Jenkins, 1903:422, fig. 2.

Holotype: USNM 50721 (266 mm, vertebrae 3/61/179).

Pacific, Hawaiian Is.; Lahaina, Maui; Feb 1900; McGregor, R.C.

Status: Synonym of *Cirrhimuraena playfairii* (Günther, 1870) (McCosker, 1979:64).

- Muraenichthys chilensis* McCosker, 1970:509, figs. 1–5, 6b.
(Holotype: SIO 65-645).
Paratypes: USNM 205477 (5, 167–237 mm). Pacific, Chile; NW side of Isla San Felix; 26°17'30"S, 80°05'40"W; 3–35 m; 6 Dec 1965; Baldwin, W.J., and party; formerly SIO 65-626-26.
Status: Valid.
- Muraenichthys elerae* Fowler, 1934:278, fig. 38.
Holotype: USNM 92348 (156 mm, vertebrae 36/49/143). Pacific, Philippine Is.; Sulu Sea off western Mindanao, island off Panabuton Pt., N 20° E, 0.40 mi (0.64 km); 27 fm (49 m); 6 Feb 1908; *Albatross* 5131; 0927 hr; LT-2369.
Status: Uncertain. Schultz and Woods (1949:172) listed this species as a synonym of *Muraenichthys godeffroyi* Regan (1909), and the holotype keys out to that species in McCosker's (1970:509) key. J.L.B. Smith (1962:462) synonymized *godeffroyi* with *Muraenichthys laticaudata* (Ogilby, 1897) on the basis of variation in dorsal-fin origin. Neither McCosker (1970, 1977) nor Smith (1962) mentioned *M. elerae*.
- Muraenichthys fowleri* Schultz, 1943:51, fig. 5e, pl. 7.
Holotype: USNM 115972 (104 mm, vertebrae -/50/127). Pacific, Samoa Is.; Tau Id. reef at Siulagi Pt.; 27 Jun 1939; Schultz, L.P.
Paratypes: USNM 115973 (2, 78–93 mm). Same data as holotype.
Status: Synonym of *Muraenichthys gymnotus* Bleeker, 1864 (Schultz in Schultz et al., 1953:76).
Remarks: One paratype, formerly USNM 115974 (181 mm), exchanged to MCZ Jul 1951, now MCZ 37247.
- Muraenichthys johnstonensis* Schultz and Woods, 1949:172, fig. 1.
Holotype: USNM 141268 (145 mm, vertebrae 75/51/153). Pacific, Johnston Id.; reef along northern side of atoll; 28–29 Aug 1947; Schultz, L.P.; S-42-569.
Paratypes: USNM 141269 (1, 81 mm). Same data as holotype.
USNM 141692 (1, 122 mm). Pacific, Marshall Is.; Bikini Atoll, Arji Id., 100 yds (915 m) off shore, lagoon coral area; 0–40 ft (12 m); 7 Aug 1946; Brock, V.E., and Herald, E.S.; S-46-308.
Status: Valid as *Schultzidia johnstonensis* (Schultz and Woods, 1949).
Remarks: Gosline (1951a:309) established *Schultzidia* as a subgenus with *M. johnstonensis* as the type species. Schultz in Schultz et al. (1953:82) raised *Schultzidia* to a genus.
- Muraenichthys owstoni* Jordan and Snyder, 1901:862, fig. 11.
(Holotype: CAS-SU 6472).
Paratype: USNM 49865 (1, 205 mm). Pacific, Ryukyu Is.; Yaeyama Id., Ishigaki Group, southern part of Riukiu Archipelago, Japan; Owston, A.
Status: Synonym of *Muraenichthys macropterus* Bleeker, 1857 (Schultz in Schultz et al., 1953:73).
- Muraenichthys philippinensis* Schultz and Woods, 1949:173, fig. 2.
Holotype: USNM 134951 (92 mm, vertebrae 80/60/128). Pacific, Philippine Is.; off western Samar, Badian Id. (N.), N 27° E, 5.75 mi (9.3 km); 11°31'40"N, 124°42'40"E; 32 fm (59 m); 14 Apr 1908; *Albatross* 5206; 1002 hr.
Paratype: USNM 134952 (1, 119 mm). Pacific, Philippine Is.; Balayan Bay, Luzon, Taal anchorage; 20 Feb 1909; *Albatross*; 1930 hr; surface, electric light.
Status: Valid.
- Muraenichthys retropinnis* Fowler, 1934:277, fig. 37.
Holotype: USNM 92355 (114 mm, vertebrae 69/49/139). Pacific, Philippine Is.; off western Samar, Tarataro Id. (N.), S 67°30' E, 4.10 mi (6.6 km); 11°45'53"N, 124°42'50"E; 26 fm (48 m); 14 Apr 1908; *Albatross* 5208; 1259 hr.
Paratypes(?): USNM 134953 (1, 57 mm). Pacific, Philippine Is.; northern Mindanao and vicinity, Camp Overton, Iligan Bay; 5 Aug 1909; *Albatross*.
USNM 134954 (1, 66 mm). Pacific, Philippine Is.; off southern Luzon, Port Binanga; 8 Jan 1908; *Albatross*.
Status: Valid as *Schultzidia retropinnis* (Fowler, 1934). See Schultz in Schultz et al. (1953:81).
Remarks: Fowler stated that there were four paratypes but gave no details. USNM 134953 and 134954 came from the same accession as the holotype, and even though they were cataloged after the description was published, they could have been available to Fowler at the time. There apparently are no paratypes at CAS-SU or ANSP (according to the type catalogs, J. Böhlke, 1953, and E. Böhlke, 1984). If these specimens are not the paratypes, I do not know where those paratypes would be.
- Myrichthys aspetocheiros* McCosker and Rosenblatt, 1993:155, figs. 1, 2.
(Holotype: SIO 65-166).
Paratype: USNM 323889 (1, 279 mm). Pacific; Panama; 8°26'12"N, 79°43'12"W; 15 m; 1 May 1967; *Pillsbury* 485.
Status: Valid.
- Myrichthys rupestris* Snyder, 1912:490.
Holotype: USNM 74048 (415 mm, vertebrae 1/76/191). Pacific, Ryukyu Is.; Okinawa; Owston, A.
Status: Synonym of *Myrichthys maculosus* (Cuvier, 1817) (Schultz in Schultz et al., 1953:51).

Myrichthys tigrinus Girard, 1859b:58

Holotype: USNM 1150 (640 mm, vertebrae 3/60/152). Pacific, Mexico; Adair Bay; Stone, C.P. This specimen apparently was recataloged as USNM 8810. The locality originally was given as Adair Bay, Oregon, but the correct locality is undoubtedly Adair Bay, Mexico, in the Gulf of California (Harry, 1948).

Status: *Myrichthys tigrinus* is in the synonymy of *Myrichthys xysturus* (Jordan and Gilbert, 1882). *Myrichthys tigrinus* Girard, 1859, is a homonym of *Myrichthys tigrinus* (Rüppell, 1828). Rüppell's *Muraena tigrina* is clearly a *Myrichthys* and was listed in the synonymy of *Myrichthys maculosus* (Cuvier, 1817) by Smith (1962:448). Article 53(c) of the ICZN states that two or more species-group names having the same spelling are secondary homonyms if they have been "subsequently published in combination with the same generic name." McCosker and Rosenblatt (1993:166), following the advice of the late W.I. Follett, interpreted this phrase to mean that the name must explicitly have been written that way (i.e., as *Myrichthys tigrinus*), and that merely referring the species to *Myrichthys* without writing it as such is insufficient to establish homonymy. On the other hand, Article 59(a) states that "a species-group name that is a junior secondary homonym [Art. 57c] must be treated as invalid by anyone who considers that the two species-group taxa in question are congeneric." (Article 57c simply restates Article 53c, but uses the phrase "brought together in combination" in place of "published in combination.") It is obvious that McCosker and Rosenblatt's interpretation would create a nomenclatural sword of Damocles hanging over every such case: as soon as someone publishes the lethal combination, the name is instantly homonymized. In fact, McCosker and Rosenblatt did exactly that on page 166 of their paper when they wrote "the binomen *Myrichthys tigrinus* (Rüppell)." No matter how this case is interpreted, the conclusion seems unavoidable that *Myrichthys tigrinus* Girard is a junior secondary homonym and is hence unavailable. The next available name is *Myrichthys xysturus* (Jordan and Gilbert, 1882).

Myrophis egmontis Jordan, 1884:44.

Lectotype: USNM 35086 (406 mm, vertebrae 67/63/159). Gulf of Mexico, Florida; Egmont Key, in Tampa Bay, southern Florida; Jewett, E.; formerly YPM 827.

Status: Valid as *Ahlia egmontis* (Jordan, 1884). See Jordan and Davis (1891:639).

Remarks: At the beginning of his description Jordan (1884) stated that there were "two specimens in fair condition," and he gave their YPM catalog numbers; however, his statement three paragraphs below,

"length of specimen about 15 inches," implies a single specimen. He then stated that "one of the types (827) has been presented to the U.S. National Museum," where it was recataloged as USNM 35086. Jordan and Evermann (1896:371) repeated the description verbatim but then inexplicably stated there was "one specimen known" and gave the "type" as USNM 35086. Assuming that there were originally two syntypes, Jordan and Evermann's action constitutes a lectotype designation.

Myrophis frio Jordan and Davis, 1891:640.

Holotype: USNM 46760 (305 mm, vertebrae 38/68/188). Atlantic, Brazil; off Cape Frio, near Rio Janiero; 23°08'S, 41°34'W; 59 fm (108 m); 30 Dec 1887; *Albatross* 2762.

Status: Valid as *Pseudomyrophis frio* (Jordan and Davis, 1891). See McCosker et al. (1989:290).

Myrophis lumbricus Jordan and Gilbert, 1882b:261.

Holotype: USNM 30896 (145 mm, vertebrae 31/53/143). Gulf of Mexico, Texas; Galveston; Mar 1882; Jordan, D.S.

Status: Synonym of *Myrophis punctatus* Lütken, 1851 (McCosker et al., 1989:286).

Mystriophis blastorhinus Kanazawa, 1963:282, figs. 1, 2A, pl. 1 (left).

Holotype: USNM 158960 (418 mm, vertebrae 22/61/143). Atlantic, French Guiana; 7°18'N, 53°32'W; 100 fm (183 m); 8 Nov 1957; *Oregon* 2021.

Status: Valid as *Kertomichthys blastorhinus* (Kanazawa, 1963). See McCosker and Böhlke (1982:119).

Mystriophis crosnieri Blache, 1971:210, figs. 6–10.

(Holotype: MNHN 1965-666).

Paratype: USNM 214142 (1, 588 mm). Atlantic, Congo; parages de Pointe Noire; 5°02'S, 11°20'E; 300 m; 12 Jan 1964; Blache, J.; formerly MNHN 1965-726.

Status: Valid.

Neoconger perlongus Poey, 1876:67, pl. 9, figs. 3–4.

Holotype: USNM 37478 (320 mm, vertebrae 31/51/144). Caribbean, Cuba; Matanzas; Poey, F.; Poey no. 639; received 1885, "original no." 18.

Status: Synonym of *Myrophis punctatus* Lütken, 1851 (Smith and Castle, 1972:207).

Ophichthus afuerae Hildebrand, 1946:139, fig. 32.

Holotype: USNM 127836 (550 mm, vertebrae 16/73/168). Pacific, Peru; Lobos de Afuera Id.; 6°56'S, 80°43'W; 20 fm (37 m); 19 Jul 1941; Lobell, M.J.; U-02013; drawn.

Status: Synonym of *Pogonophis fossatus* Myers and Wade, 1941 (McCosker, 1977:83).

- Ophichthus chamensis* Meek and Hildebrand, 1923:155, pl. 8, fig. 2.
 Holotype: USNM 82216 (265 mm, vertebrae 15/46/149). Pacific, Panama; Chame Point; 26 Jul 1913; Tweedlie, R.
 Paratypes: USNM 82214 (1, 69 mm). Same data as holotype.
 USNM 82215 (7, 74–121 mm). Same locality as holotype, but no date given; two specimens removed to USNM 128398.
 USNM 82217 (2, 209–242 mm). Same data as holotype.
 USNM 128398 (2, 63–68 mm). Removed from USNM 82215 and recataloged as "*Ophichthys* sp. juv.," but they appear to be same species as USNM 82215.
 Status: Valid.
- Ophichthus evionthas* Jordan and Bollman, 1890:154.
 Holotype: USNM 41476 (female, 482 mm, vertebrae 11/72/149). Pacific, Galapagos Is.; Hood Id.; Apr 1888; *Albatross*; TT-75.
 Status: Valid as *Quassiremus evionthas* (Jordan and Bollman, 1889). See Jordan and Davis (1891:622).
- Ophichthus hyposagmatus* McCosker and E.B. Böhlke, 1984:24, figs. 1–3.
 (Holotype: ANSP 152300).
 Paratype: USNM 263573 (1, 178 mm). Caribbean, Colombia; 9°46'12"N, 76°10'54"W; 88 m; 16 Jul 1966; *Pillsbury* 393; formerly UMML 22177.
 Status: Valid.
- Ophichthus kunaloo* McCosker, 1979:61, figs. 3–4.
 (Holotype: CAS 29136).
 Paratype: USNM 218274 (1, 274+ mm). Pacific, Hawaiian Is.; Oahu, north of Barber's Point; 275 m; 28 Oct 1969; Clarke, T.; shrimp trap; head and anterior trunk only, partly eaten; formerly SIO 70-32.
 Status: Valid.
- Ophichthus melanoporus* Kanazawa, 1963:284, figs. 2B, 3, pl. 1 (right).
 Holotype: USNM 191118 (female, 691 mm, vertebrae 13/54/187). Atlantic, Bahama Is.; Straits of Florida, west of Andros Id., Bahamas; 24°04'N, 79°15'W; 250 fm (458 m); 24 Jul 1957; *Combat* 448.
 Paratypes: USNM 191119 (3 males, 542–672 mm). Same data as holotype.
 Status: Valid.
- Ophichthus menezesi* McCosker and E.B. Böhlke, 1984:29, figs. 7–9.
 (Holotype: MZUSP 12166).
 Paratype: USNM 263574 (1, 153 mm). Atlantic, Brazil; Rio Grande do Sul; 29°53'S, 48°19'W; 194 m; 3 Aug 1972; *Prof. W. Besnard*; formerly MZUSP 12171.
 Status: Valid.
- Ophichthus rex* Böhlke and Caruso, 1980:239, figs. 1–3.
 (Holotype: ANSP 136745).
 Paratypes: USNM 133826 (1, 1793 mm, female with ripe ovaries). Gulf of Mexico, Florida; Key West, off Cosgrove Reef; 100 fm (183 m); Apr 1947; Springer, S.
 USNM 200495 (1, ~2100 mm). Gulf of Mexico; off Mississippi Delta; 29°21'N, 88°47'W; 3 Mar 1965; *G.M. Bowers* 57-15.
 Status: Valid.
- Ophichthus rugifer* Jordan and Bollman, 1890:155.
 Holotype: USNM 41428 (female, 530 mm, vertebrae 14/56/161). Pacific, Galapagos Is.; Charles Id.; Apr 1888; *Albatross*; original no. 433.
 Status: Synonym of *Ophichthus triserialis* (Kaup, 1856) (Jordan and Evermann, 1896:384).
- Ophichthys exilis* Seale, 1917:86.
 (Holotype: MCZ 28401).
 Paratype: USNM 153611 (1, 413 mm). Pacific, Chile; Santiago; 1 Apr 1897; Latasti, F.; out of MCZ 28401.
 Status: Probably a synonym of *Ophichthus ramiger* (Valenciennes, 1847) (J.E. McCosker, pers. comm., 1992).
- Ophichthys (Cryptopterus) frontalis* Garman, 1899:309.
 Syntype: USNM 57899 (1, 369 mm, vertebrae 22/56/155). Pacific, Panama; 7°33'12"N, 79°17'15"W; 242 fm (443 m); 8 Mar 1891; *Albatross* 3386.
 Status: Valid as *Ophichthus frontalis* (Seale, 1917). See McCosker (1977:81).
 Remarks: Garman's description was based on at least three specimens, from three *Albatross* stations. Seven specimens are listed in the MCZ collections under catalog numbers 28455, 28456, and 28457, but none of these can be located (K.E. Hartel, pers. comm., 1992).
- Ophichthys guttifer* Bean and Dressel, 1884:100.
 Holotype: USNM 32647 (571 mm, vertebrae 16/53/137). Gulf of Mexico, Florida; Pensacola; Stearns, S.
 Status: Synonym of *Ophichthus puncticeps* (Kaup, 1860) (McCosker et al., 1989:402).
- Ophichthys miurus* Jordan and Gilbert, 1882c:357.
 Syntypes: USNM 2304 (3, 252–315 mm, vertebrae 24/77/146, 21/80/145, 23/78/142). Pacific, Mexico; Cape San Lucas; Xantus, J.; ledger gives original no. 1749; numbers on tags tied to specimens 2282, 2283, 2304, meaning unknown.

- Status: Valid as *Scytalichthys miurus* (Jordan and Gilbert, 1882). See McCosker (1977:84).
- Ophichthys nothochir* Gilbert, 1890:58.
 Syntypes: USNM 44296 (1, 470 mm, vertebrae 12/–/141). Pacific, Mexico; San Josef Id., Gulf of California; 1889; *Albatross*. There is an Albatross tag no. 3071 in the jar, but this cannot be correct because that station came from 685 fathoms off Oregon/Washington.
 USNM 46588 (2, 437–416 mm, vertebrae 12/64/137, 12/64/141). Pacific, Mexico; San Josef Id.; 16 Mar 1889; *Albatross*.
 Status: Valid as *Quassiremus nothochir* (Gilbert, 1890). See Jordan and Davis (1891:623).
- Ophichthys retropinnis* Eigenmann, 1887:116.
 Holotype: USNM 38054 (522 mm, vertebrae 24/51/130). Gulf of Mexico, Florida; Pensacola, snapper bank; Stearns, S.; “from the stomach of some other fish.”
 Status: Synonym of *Ophichthys puncticeps* (Kaup, 1860) (McCosker et al., 1989:402).
- Ophichthys styurus* Smith and Swain, 1882:120.
 Holotype: USNM 26817 (604 mm, vertebrae 2/73/149+). Pacific, Johnston Id.; ~17°N, 170°W; 1880; North Pacific Guano Co.
 Status: Synonym of *Myrichthys maculosus* (Cuvier, 1817) (McCosker, 1979:63).
- Ophichthys xysturus* Jordan and Gilbert, 1882a:346.
 Syntypes: USNM 28142 (1, lost). Pacific, Mexico; Mazatlan; 1880–1881; Gilbert, C.H. This specimen was not found during inventory in 1980 and has not been located since. It possibly was lost in the 1884 fire at Indiana University.
 USNM 28247 (1, 289 mm, vertebrae 4/61/148+). Same data as USNM 28142.
 USNM 29642 (1, 423 mm, vertebrae 3/58/154). Same data as USNM 28142.
 Status: Valid as *Myrichthys xysturus*.
 Remarks: See “Status” under *Myrichthys tigrinus*.
- Ophichthys zophochir* Jordan and Gilbert, 1882a:347.
 Syntypes: USNM 28277 (1, 690 mm, vertebrae 15/45/153). Pacific, Mexico; Mazatlan; 1880–1881; Gilbert, C.H.
 USNM 28280 (1, 594 mm, vertebrae 15/47/151). Same data as USNM 28277.
 USNM 29220 (1, lost). Same data as USNM 28277. This specimen was not found during inventory in 1980 and cannot be located today. Possibly it was lost in the 1884 fire at Indiana University.
 USNM 29239 (1, 415 mm, vertebrae). Same data as USNM 28277.
 Status: Valid but the genus is correctly spelled *Ophichthys*.
- Phyllophichthys xenodontus* Gosline, 1951a:316, fig. 17a,b.
 Holotype: USNM 162709 (240 mm, vertebrae 10/81/172). Pacific, Hawaiian Is.; Oahu, windward, Hauula Park, shallow water poison station; 28 Jun 1949; Gosline, W.A., and party; original no. UH 318.
 Status: Valid.
- Pisoodonophis copelandi* Herre, 1953:10.
 Holotype: USNM 202516 (308 mm, vertebrae 20/62/178). Pacific, Philippine Is.; Manila Bay, off Dewey Blvd., in yacht harbor, Manila; 21 Nov 1947; Herre, A.W.C.T.; formerly UW 6485; preserved in isopropanol, changed to 75% ethanol 18 Oct 1991.
 Paratype: USNM 202571 (1, 303 mm). Same data as holotype; formerly UW 19694.
 Status: Valid but the genus is correctly spelled *Pisodonophis*.
- Pisoodonophis cruentifer* Goode and Bean, 1896:147, fig. 166.
 Lectotype: USNM 28938 (415 mm, vertebrae 16/59/149). Atlantic; off Martha’s Vineyard; 39°57’N, 69°28’W; 120 fm (220 m); 14 Sep 1881; *Fish Hawk* 1035; 1856 hrs; originally two syntypes, one paralectotype removed to USNM 278183; specimen bears a metal tag reading “DRN” (i.e., drawn).
 Paralectotype: USNM 278183 (1, 360 mm). Same data as lectotype; removed from USNM 28938 (lectotype).
 Status: Valid as *Ophichthys cruentifer* (Goode and Bean, 1896). See McCosker (1977:81).
 Remarks: The lectotype was designated by Jordan and Evermann (1900:3245) when they referred to the illustrated specimen as the “type.” McCosker et al. (1989:386), unaware of Jordan and Evermann’s action, selected the same specimen as the lectotype. The specimen clearly is identified by the “DRN” tag attached to it.
- Pseudomyrophis nimius* Böhlke, 1960:1, fig. 1.
 Holotype: USNM 186274 (319 mm, vertebrae 51/73/214). Gulf of Mexico; 29°05’N, 88°22’W; 250 fm (458 m); 11–12 Jun 1959; *Silver Bay* 1203.
 Status: Valid.
- Quassiremus goslingi* Beebe and Tee-Van, 1932:110.
 Holotype: USNM 170563 (652 mm, vertebrae 10/69/136). Atlantic, Bermuda; Castle Roads, captured with hand line in 30 ft depth; 21 Mar 1929; Beebe, W.; original no. 8700, Bermuda Oceanographic Expedition, N.Y. Zoological Society.
 Paratypes: USNM 170564 (2, 623–710 mm). Same data as holotype; original nos. 25150 and 25151.
 Status: Synonym of *Quassiremus ascensionis* (Studer, 1889) (McCosker et al., 1989:410).

Sphagebranchus flavicaudus Snyder, 1904:516, pl. 2, fig. 4.

Holotype: USNM 50863 (364 mm, vertebrae -/-/157, anus at vertebra 80). Pacific, Hawaiian Is.; Auau Channel between Maui and Lanai, Mokuhooniki Islet, N 19°45', E 18.2'; 21–28 fm (38–51 m); 12 Apr 1902; *Albatross* 3874; 1038 hr; small tag with no. 655, meaning unknown; 1 specimen removed to USNM 320113 (see "Remarks").

Status: Valid as *Apterichthys flavicaudus* (Snyder, 1904). See McCosker (1977:66).

Remarks: USNM 50863 originally contained two specimens, measuring 364 and 215 mm, with a handwritten note reading "*Sphagebranchus flavicaudus* type—sta. 3874." The 364 mm specimen is undoubtedly Snyder's type, which was given as 367 mm from *Albatross* station 3874. Snyder mentioned two other specimens, one of 245 mm from *Albatross* 4055, and one of 220 mm from *Albatross* 4061. The former specimen was designated as a cotype and was given Stanford University catalog number 7509; it is clearly a paratype. The 220 mm specimen is assumed to be the one that was in the jar with the holotype, and which now measures 215 mm; this specimen was not given any sort of type designation. According to Article 72(b)(vi) of the ICZN (1985), if an author "nominates... a holotype and paratypes... ('type and cotypes'), and also lists other specimens, the separate mention of the latter expressly excludes them from the type series." This clause would seem to exclude the 220 mm (now 215 mm) specimen from the type series, and I am therefore not treating it as a paratype; it is now cataloged as USNM 320113.

Sphagebranchus kendalli Gilbert in Adams and Kendall, 1891:310, 1 unnumbered fig.

Holotype: USNM 44304 (170 mm, vertebrae -/-/138). Gulf of Mexico, Florida; red snapper grounds off the west coast of Florida; 25°34'N, 82°50'W; 25 fm (46 m); 2 Mar 1889; *Grampus* 5080; 1330 hr; poor condition, in three pieces.

Status: Valid as *Apterichthys kendalli* (Gilbert in Adams and Kendall, 1891). See McCosker (1977:66).

Sphagebranchus moseri Jordan and Snyder, 1901:864, fig. 14.

Holotype: USNM 49729 (149 mm, vertebrae -/-/142). Pacific, Japan; off Honshu Id., Seno Umi, N 4°, E 2 mi (3.2 km) (in Suruga Bay, off Namazu); 63 fm (115 m); 7 May 1900; *Albatross* 3700; poor condition, in 3 pieces. Jordan and Snyder stated that the specimen came from *Albatross* station 3700 in 100 fm, but the published station list (Townsend, 1901) gives the depth as 63 fm.

Status: Valid as *Apterichthys moseri* (Jordan and Snyder, 1901). See McCosker (1977:121).

Remarks: This specimen was incorrectly published as USNM 49728 (Jordan and Snyder, 1901:865). The correct number is USNM 49729.

Sphagebranchus ophioneus Evermann and Marsh, 1902:73, fig. 7.

Holotype: USNM 49526 (284 mm, vertebrae -/-/133). Caribbean, Puerto Rico; harbor of Mayagüez, Porto Rico, custom house NE $\frac{3}{4}$ E - 4.5 mi (7.2 km), tangent of land south about Pt. Melomas 11 mi; 4–6 fm (7–11 m); 20 Jan 1899; *Fish Hawk* 6065; 1330 hr.

Status: Valid as *Ichthyapus ophioneus* (Evermann and Marsh, 1902). See McCosker (1977:68).

Sphagebranchus scuticaris Goode and Bean, 1880:343.

Holotype: USNM 23636 (750 mm, vertebrae 1/85/164). Gulf of Mexico, Florida; Cedar Key; Velie, J.W.; ledger has "P.U.S.N.M.II" in Remarks field, meaning unknown.

Status: Valid as *Bascanichthys scuticaris* (Goode and Bean, 1880). See Jordan and Davis (1891:621).

Sphagebranchus teres Goode and Bean, 1882:436.

Lectotype: USNM 31457 (525 mm, vertebrae 1/82/162). Gulf of Mexico, Florida; "collected in West Florida many years ago, by Kaiser and Martin;" two paralectotypes removed to USNM 152575 and 220010; original no. 5762.

Paralectotypes: USNM 152575 (1, 482 mm). Same data as lectotype; removed from USNM 31457; original no. 5762.

USNM 220010 (1, 470 mm). Same data as lectotype; removed from USNM 152575; original no. 5762.

Status: Synonym of *Bascanichthys scuticaris* (Goode and Bean, 1880) (Leiby and Yerger, 1980:403).

Remarks: Jordan and Evermann (1900:3245) designated the lectotype by referring to the illustrated specimen as "the type of *Sphagebranchus teres* Goode and Bean." Unfortunately, there is no way to know which of the original three specimens in the lot was illustrated. The type series originally contained two species, now recognized as *Bascanichthys scuticaris* and *B. bascanium*. Ginsburg (1951:479) selected one of the *scuticaris* as the lectotype. The paralectotypes thus consisted of two species. The specimen of *scuticaris* retained the original paralectotype catalog number, and the specimen of *bascanium* was recataloged as USNM 220010 (Leiby and Yerger, 1980:405). Unfortunately, we are left with an unresolvable dilemma. The ICZN clearly states (Article 74c) that the designation of an illustration of a syntype is to be treated as the designation of the specimen illustrated, and "the fact that the specimen cannot be traced does not of itself invalidate the designation." There is one

chance in three that Ginsburg selected the same specimen as Jordan and Evermann, and there is one chance in three that the illustrated specimen is *bascanium*, which would be a junior synonym of *B. teres*. In the interest of stability, I am accepting Ginsburg's specimen as the lectotype.

Stictorhinus potamius Böhlke and McCosker, 1975:5, figs. 1-7.

(Holotype: MZUSP 9248).

Paratypes: USNM 212060 (2, 273-290 mm). South America, Brazil; state of Para, from one of two freshwater pools of Rio Tocantins near Tucuruí; 14 Sep 1970; Expedicao Permanente de Amazonia; Menezes, N.A.; formerly MZUSP 9267, 9268.

Status: Valid.

SERRIVOMERIDAE

Serrivomer beanii Gill and Ryder, 1883a:261.

Holotype: USNM 33383 (594 mm, vertebrae 31/21/149+). Atlantic; Nantucket to Cape Sable, Nova Scotia; 41°40'30"N, 66°35'00"W; 0-855 fm (0-1565 m); 3 Sep 1883; *Albatross* 2075.

Status: Valid.

Serrivomer sector Garman 1899:320, pl. 63.

Syntype: USNM 57886 (1, ~515 mm, vertebrae 29/22/151). Pacific, Panama; 7°06'00"N, 79°48'00"W; 0-1168 fm (0-2137 m); 9 Mar 1891; *Albatross* 3388; in two pieces.

Status: Valid.

Remarks: The remaining syntypes are at the Museum of Comparative Zoology, Harvard University.

Spinivomer goodei Gill and Ryder, 1883a:261.

Holotype: USNM 33293 (130 mm, lost). Atlantic; Cape May to Nantucket; 38°19'26"N, 68°20'20"W; 0-2369 fm (0-4335 m); 28 Jul 1883; *Albatross* 2039; 130 mm.

Status: Synonym of *Serrivomer beanii*. *Serrivomer beanii* and *Spinivomer goodei* were described in the same paper. Although the holotype of *Spinivomer goodei* no longer exists, the description leaves little doubt that *goodei* and *beanii* are synonyms. The precedence of one over the other must be established by the first reviser (ICZN, Article 24), a process that apparently never was done until Tighe (1989:618) cited *Spinivomer goodei* in the synonymy of *Serrivomer beanii*. Beebe and Crane (1937:346) earlier had synonymized *Spinivomer* with *Serrivomer*, but they said nothing about the species.

Remarks: Beebe and Crane (1937:346) reported that the specimen had been "temporarily mislaid at the United

States National Museum." It was searched for in 1984 and again in 1991 and could not be found. According to Gill and Ryder, the specimen measured 0.13 m. Beebe and Crane gave a length of 147 mm, although they did not say how they obtained that figure if the specimen was missing.

Stemonidium hypomelas Gilbert, 1905:586, pl. 67.

Holotype: USNM 51550 (171 mm, vertebrae 27?/20/-). Pacific, Hawaiian Is.; off Niihau Id., Kawahioa Point, N 73°30', W 8.6'; 672-537 fm (1230-983 m); 12 Aug 1902; *Albatross* 4176; 0904 hr.

Status: Valid.

SYNAPHORANCHIDAE

Dysomma aphododera Ginsburg, 1951:452, fig. 7.

Holotype: USNM: 154992 (218 mm, vertebrae 9/15/122). Gulf of Mexico, Texas; 26°30'N, 96°26'W; 50 fm (92 m); 5 Feb 1939; *Pelican* 117-1.

Paratype: USNM 154993 (1, 226 mm). Gulf of Mexico, Texas; 27°44'N, 96°17'30"W; 37 fm (68 m); 23 Jan 1939; *Pelican* 108-11.

Status: Considered a synonym of *Dysomma anguillare* Barnard, 1923, by Robins and Robins (1976).

Dysomma tridens C.H. Robins, E.B. Böhlke, and C.R. Robins, 1989, in Robins and Robins, 1989:250, figs. 237-240.

Holotype: USNM 193563 (217 mm, vertebrae 14/28/175). Caribbean, Honduras; 16°44'N, 87°55'W; 190 fm (348 m); 9 Jun 1962; *Oregon* 3634.

Status: Valid.

Dysommia rugosa Ginsburg, 1951:450, fig. 6.

Holotype: USNM 131594 (196 mm, vertebrae 16/29/127). Atlantic, Georgia; 30°53'00"N, 79°42'30"W; 273 fm (500 m); 5 May 1886; *Albatross* 2667.

Status: Valid.

Histiobranchus infernalis Gill, 1883:255.

Holotype: USNM 33279 (~470 mm, vertebrae 12/53/138). Atlantic; Cape May to Nantucket; 38°53'00"N, 69°23'30"W; 1731 fm (3168 m); 18 Jul 1883; *Albatross* 2037; poor condition, in several pieces.

Status: Synonym of *Synaphobranchus bathybius* Günther, 1877 (Castle, 1964:34).

Remarks: Gill gave the wrong coordinates for the station. According to Townsend (1901:393), the latitude and longitude for *Albatross* 2037 are as given above; Gill's figures are for station 2038, although he reported the depth correctly.

Ilyophis brunneus Gilbert, 1891a:352.

Holotype: USNM 44403 (382 mm, vertebrae 10/42/146).

Pacific, Galapagos Is.; 0°36'30"S, 89°19'00"W; 634 fm (1160 m); 4 Apr 1888; *Albatross* 2808.

Status: Valid.

Linkenchelys multipora Smith, 1989b:78, figs. 70–73.
(Holotype: ANSP 156814).

Paratype: USNM 280144 (1, 82 mm). Atlantic, Bahama Is.; San Salvador, off Cockburn Town; 238 m; 1 Nov 1982; *Johnson Sea Link* 1289; Gilmore, R.G.

Status: Valid.

Remarks: This species was described in the family Chlopsidae, but it is in fact an ilyophine synaphobranchid. A report on its osteology and relationships is being prepared by D.G. Smith and K.A. Tighe.

Simenchelys parasiticus Gill in Goode and Bean, 1879:27.

Lectotype: USNM 21669 (391 mm, vertebrae 14/50/121). Atlantic, Canada; Banquereau; 300 fm (549 m); 1877–1880; schooner *Lizzie*, coll. no. 179; Scott, G.W.; U.S. Fish Comm. Gloucester.

Paralectotypes: USNM 21673 (2, 177–420 mm). Atlantic, Canada; near Sable Id. Bank, Nova Scotia; 1877–1880; schooner *Carl Schurz*, coll. no. 226; N. McPhee et al.; U.S. Fish Comm. Gloucester.

USNM 21675 (1, lost). Atlantic, Canada; southeast La Have Bank, Nova Scotia; 300 fm (549 m); 1877–1880; schooner *City of Gloucester*, coll. no. 191; Jewett, T.; U.S. Fish Comm. Gloucester; searched for 26 Mar 1987, not found.

USNM 21677 (1). Same data as lectotype; skeletonized, in alcohol.

USNM 21872 (1, 513 mm). Atlantic, Canada; 43°25'N, 59°50'W; 300 fm (549 m); 15 Oct 1878; schooner *Carl Schurz*; McPhee, N.; U.S. Fish Comm. Gloucester. The ledger gives locality as "lat 59°50' lon 43°25' 300 fth," which is off the southern tip of Greenland; this is possible, but it is more likely that the cataloger transposed latitude and longitude; 43°25'N, 59°50'W would be near Sable Island Bank, Nova Scotia, and is more consistent with the other stations in this series.

Status: Valid.

Remarks: From 1877 to 1880 the U.S. Fish Commission received fishes and invertebrates collected by the commercial fishing fleet out of Gloucester, Mass (Anonymous, 1882). The amount of "rare and new material" (Baird in Anonymous, 1882:787) in these collections was substantial, and much of it was donated to the Smithsonian Institution. The collections were given sequential numbers, each representing one or more fishes, etc. brought in by a particular vessel from a particular location; they are equivalent to station numbers or field numbers.

Robins and Robins (1989:217) designated the

lectotype from among material thought to have been available to Gill when he described the species. They limited the presumed type material to those lots cataloged between April and December 2, 1878, and listed the specific catalog numbers. USNM 21872 was not among the lots explicitly mentioned by Robins and Robins, but it was cataloged on November 11, 1878, and therefore it fits their criterion for inclusion as type material. Thus, it is listed here as a paralectotype.

As the suffix *-enchelys* is feminine, the correct form of the species name is *parasitica* (Robins and Robins, 1989:214).

Synaphobranchus brachysomus Gilbert, 1905:583, fig. 232.

Holotype: USNM 51591 (710 mm, vertebrae 10–29/28/134+?). Pacific, Hawaiian Is.; vicinity of Kauai Id., Hanamaulu warehouse, S 43°, W 8.1'; ~550–409 fm (1007–748 m); 21 Jun 1902; *Albatross* 4019; 1014 hr; TT-2660.

Paratypes: USNM 51696 (2, 490–535 mm). Pacific, Hawaiian Is.; Hawaii; 1902; *Albatross*; 490–535 mm. The larger specimen bears tin tag 6135, the smaller specimen has a small paper tag 710. There is no station number in the jar; the only information given is "Hawaii." According to the description, the specimens were taken at *Albatross* stations 3979, 4019, 4123, 4137, and 4166, presumably the specimens came from one of these.

Status: Synonym of *Synaphobranchus affinis* Günther, 1877 (Robins and Robins, 1989:223).

Remarks: The position of the dorsal-fin origin in *Synaphobranchus* species is ambiguous. The externally visible fin begins some distance posterior to the first pterygiophore. The vertebral formula given for this and other species of *Synaphobranchus* has the predorsal vertebrae as a range: the first figure is the position of the anteriormost pterygiophore, the second figure is the origin of the external fin.

Synaphobranchus jenkinsi Jordan and Snyder, 1901:845, fig. 2.

Holotype: USNM 49727 (413 mm, vertebrae 7–40/29/131). Pacific, Japan; Sagami Bay, off Enoshima, Manazuru Zaki, N 70°, W 4.7 mi (7.6 km); 501–749 fm (917–1371 m); 5 May 1900; *Albatross* 3696.

Status: Synonym of *Synaphobranchus brevidorsalis* Günther, 1887 (Robins and Robins, 1989:227).

Synaphobranchus oregoni Castle, 1960:388, fig. 66.

Holotype: USNM 185605 (female, 380 mm, vertebrae ~39/–/–). Gulf of Mexico, Alabama; 29°01'N, 88°24'W; 355–475 fm (650–869 m); 19 Sep 1952; *Oregon* 640.

Status: Valid.

Remarks: The specimen is largely deossified. The vertebrae are faint but countable anteriorly and completely obscured posteriorly. The external dorsal-fin origin is at approximately the 39th vertebra.

Unidentified Leptocephali

Thalassenchelys coheni Castle and Raju, 1975:10, fig. 3; pl. 1, fig. 3.

Holotype: USNM 211811 (304 mm, myomeres 62/74/158). Pacific, California; 34°13'N, 125°54'W; 0–150 fm (0–275 m); 17 May 1969; *David Starr Jordan* 6905; J70.110; USBCF; 1630–1815 hr; leptocephalus; changed from 5% formalin to 75% ethanol, September, 1991.

Status: The adult is unknown.

SACCOPHARYNGIFORMES

EURYPHARYNGIDAE

Gastrostomus bairdii Gill and Ryder, 1883b:271.

Syntypes: USNM 33294 (1, lost). Atlantic; Cape May to Nantucket; 40°02'30"N, 68°49'40"W; 0–389 fm (0–712 m); 31 Jul 1883; *Albatross* 2047.

USNM 33295 (1, lost). Atlantic; Cape May to Nantucket; 39°49'00"N, 68°28'30"W; 0–1467 fm (0–2685 m); 30 Jul 1883; *Albatross* 2043.

USNM 33386 (1, lost). Atlantic; Nantucket to Cape Sable, Nova Scotia; 41°43'00"N, 65°21'50"W; 0–1309 fm (0–2395 m); 03 Sep 1883; *Albatross* 2074.

Status: Synonym of *Eurypharynx pelecanoioides* Vaillant, 1882 (Bertin, 1934:30).

Remarks: Gill and Ryder (1883b:273) gave lengths of 0.47, 0.235, and 0.149 m for their three syntypes but did not associate these with the specific catalog numbers. None of these specimens can be found today.

Gastrostomus pacificus Bean, 1904:254, fig. 31.

Holotype: USNM 50724 (360+ mm, vertebrae -/33/77+). Pacific; halfway between Midway Id. and Guam; Jun 1899; *Nero*; tail incomplete, poor condition.

Status: Synonym of *Eurypharynx pelecanoioides* Vaillant, 1882 (Bertin, 1934:30).

SACCOPHARYNGIDAE

Saccopharynx harrisoni Beebe, 1932:63, figs. 12–13.

Holotype: USNM 170939 (1400 mm, vertebrae -/165+). Atlantic, Bermuda; 10 mi (16 km) southeast of Nonsuch; 0–900 fm (0–1647 m); 11 Jun 1931; Bermuda Oceanogr. Exped., net 1010; original no. 20802, Bermuda Oceanographic Expedition.

Status: Valid.

NOTACANTHIFORMES

Unless otherwise stated, lengths given are gnathoproctal (gp).

HALOSAURIDAE

Aldrovandia oleosa Sulak, 1977:12, figs. 1, 2 left, 3 upper, 4A–C, 5, 6.

Holotype: USNM 214590 (154 mm snout-vent). Atlantic, Bahama Is.; Tongue-of-the-Ocean cul-de-sac; 23°38'30"N, 76°47'45"W; 1307–1324 m; 23 Sep 1973; *Columbus Iselin* 115; 1338–1440 hr.

Paratype: USNM 229995 (1, 157 mm snout-vent). Atlantic, Bahama Is.; 23°51'30"N, 76°53'30"W; 1261–1302 m; 21 Sep 1973; *Columbus Iselin* 106; formerly UMMML 32772.

Status: Valid.

Aldrovandia pallida Goode and Bean, 1896:135, fig. 158.

(Holotype: MCZ 28012).

Paratypes: USNM 33379 (2, 55–135 mm). Atlantic; Nantucket to Cape Sable, Nova Scotia; 41°53'00"N, 65°35'00"W; 858 fm (1570 m); 2 Sep 1883; *Albatross* 2072. (= *Aldrovandia phalacra*.)

USNM 35418 (4, 210–227 mm). Atlantic; Cape Hatteras to Nantucket; 39°29'00"N, 71°46'00"W; 693 fm (1268 m); 23 Jul 1884; *Albatross* 2181; ledger says five specimens, but only four found (three in jar and one osteological preparation). (= *Halosaurus guentheri*.)

USNM 35551 (1, 93 mm). Atlantic; Cape Hatteras to Nantucket; 39°47'00"N, 70°30'30"W; 963 fm (1762 m); 22 Aug 1884; *Albatross* 2216. (= *Aldrovandia phalacra*.)

USNM 35638 (1, 170 mm). Atlantic; Cape Hatteras to Nantucket; 38°29'00"N, 73°09'00"W; 965 fm (1766 m); 12 Sep 1884; *Albatross* 2231. (= *Aldrovandia affinis*.)

USNM 38140 (1, 115 mm). Atlantic; Nantucket to Cape Charles; 36°36'00"N, 74°32'00"W; 679 fm (1243 m); 25 Oct 1886; *Albatross* 2729. (= *Aldrovandia affinis*.)

Status: Synonym of *Aldrovandia affinis* (Günther, 1877), although the type series actually contains three different species (McDowell, 1973a:100).

Remarks: The original description stated that "a single individual, the type of the species, 600 millimeters in length, was taken by the Blake." The next paragraph added that "specimens were also obtained by the *Albatross*, as follows: No. 38140, USNM ... 33379 ... 35418 ... 35551 ... 35638 ... and also from stations 2381 ... station 2380 ... and station 2533." There is nothing in the ICZN that would exclude these specifically mentioned lots from paratype status, and they are so considered here.

Halosauropsis kauaiensis Gilbert, 1905:611, pl. 74.

Holotype: USNM 51612 (655 mm TL, 216 mm gp). Pacific, Hawaiian Is.; vicinity of Kauai Id., Hanamaulu warehouse, S 57°, W 7.4'; 724–804 fm (1303–1471 m); 21 Jun 1902; *Albatross* 4018; 0804 hr; TT-6248.

Paratypes: USNM 51703 (3, 93–210 mm). Same data as holotype; one specimen has TT-6246, two specimens have paper tags nos. 590, 698.

USNM 174751 (1, 83 mm). Pacific, Hawaiian Is.; north coast of Molokai Id., Mokuhooniki Islet, S 15°, W 8.8'; 552–809 fm (1010–1480 m); 17 Apr 1902; *Albatross* 3887; 1159 hr; formerly University of Iowa, Museum of Natural History catalog no. 18964.

Status: Synonym of *Aldrovandia phalacra* (Vaillant, 1888) (McDowell, 1973a:113).

Halosauropsis proboscidea Gilbert, 1905:612, pl. 76.

Holotype: USNM 51614 (422 mm TL, 149 mm gp). Pacific, Hawaiian Is.; Kaiwi Channel, between Molokai and Oahu Ids., Lae-o Ka Laau light, Molokai Id., S 15°30', E 19.4'; 460–470 fm (842–860 m); 24 Jul 1902; *Albatross* 4111; 1515 hr.

Status: Synonym of *Aldrovandia affinis* (Günther, 1877) (McDowell, 1973a:100).

Halosauropsis ridgwayi Fowler, 1934:265, fig. 26.

Holotype: USNM 92334 (354 mm TL, 155 mm gp). Pacific, Philippine Is.; between Siquijor and Bohol Ids., Balicasag Id. (C.), N 14° W, 8.2 mi (13.2 km); 9°22'30"N, 23°42'40"E; 392 fm (717 m); 11 Aug 1909; *Albatross* 5527; 1338 hr; LT-1722.

Paratypes: USNM 93364 (2, 125–163 mm). Pacific, Philippine Is.; northern Mindanao and vicinity: Camp Overton Lt., S 80° E, 15.3 mi (24.6 km); 8°15'20"N, 123°57'E; 410 fm (750 m); 7 Aug 1909; *Albatross* 5511; 1218 hr; LT-10139, LT-10140.

USNM 93365 (1, 150 mm). Pacific, Philippine Is.; Palawan Passage, Pt. Tabanan, S 89° E, 33.5 mi (53.9 km); 10°57'45"N, 118°38'15"E; ~375 fm (686 m); 27 Dec 1908; *Albatross* 5348; 0009 hr; LT-3537.

USNM 93366 (1, 157 mm). Pacific, Philippine Is.; northern Mindanao and vicinity, Camp Overton Lt., S 67° E, 10.3 mi (16.6 km); 8°16'45"N, 124°02'48"E; 505 fm (924 m); 7 Aug 1909; *Albatross* 5513; 1553 hr; LT-10270.

USNM 93369 (1, 69 mm). Pacific, Philippine Is.; northern Mindanao and vicinity: Macabalan Pt. Lt. (Mindanao), S 39° E, 6 mi (9.7 km); 8°35'30"N, 124°36'00"E; 200 fm (366 m); 5 Aug 1909; *Albatross* 5504; 0615 hr.

Status: Valid as *Halosaurus ridgwayi* (Fowler, 1934). See McDowell (1973a:53).

Remarks: Two paratypes, formerly USNM 93367 and 93368 (both unmeasured), exchanged to ANSP, now

ANSP 128419 and 128420. Fowler stated that there were six paratypes. Although six lots of paratypes originally were present in the USNM collection, these contained seven specimens. I presume that Fowler, as he apparently did elsewhere, confused lots with specimens.

Halosauropsis verticalis Gilbert, 1905:611, pl. 75.

Holotype: USNM 51645 (82 mm). Pacific, Hawaiian Is.; vicinity of Kauai Id., Hanamaulu warehouse, S 46°, W 6.2'; 437–632 fm (800–1157 m); 2 Aug 1902; *Albatross* 4141; 0436 hr; small paper tag attached to specimen with no. 276; drawn.

Paratypes: USNM 51674 (2, 50–74 mm). Pacific, Hawaiian Is.; vicinity of Modu Manu, or Bird Id., center of Bird Id., S 32°, W 12.8' (estimated that trawl took bottom at about 800 fm depth and was dragged up steep slope); 800–313 fm (1464–573 m); 5 Aug 1902; *Albatross* 4151; 1757 hr; small paper tags attached to specimens with nos. 279 and 570.

Status: Synonym of *Aldrovandia phalacra* (Vaillant, 1888) (McDowell, 1973a:113).

Remarks: Gilbert stated that specimens came from *Albatross* stations 3985, 4141, and 4151. The specimen from station 3985 is at CAS (CAS-SU 8628), and the holotype is stated to have come from station 4141. By default this would leave USNM 51674 to have come from station 4151, although there is no station number given either in the ledger or the jar. The ledger does not give a station number for the holotype, either.

Halosaurus goodei Gill, 1883:257

Lectotype: USNM 33281 (260 mm). Atlantic; Cape May to Nantucket; 38°53'00"N, 69°23'30"W; 1731 fm (3168 m); 18 Jul 1883; *Albatross* 2037.

Paralectotypes: USNM 33312 (4, 124–160 mm). Atlantic; Cape May to Nantucket; 39°41'00"N, 69°20'20"W; 1106 fm (2024 m); 1 Aug 1883; *Albatross* 2051; description listed one specimen, ledger originally said six, note in ledger says "4 found 1-5-53."

USNM 33329 (6, largest 265 mm, smallest broken). Same data as USNM 33312; ledger originally listed 10 specimens, but only six in jar (as of at least 1-5-53).

USNM 33336 (3, 247–272 mm). Atlantic; Cape May to Nantucket; 39°26'16"N, 70°02'37"W; 1362 fm (2492 m); 17 Jul 1883; *Albatross* 2035.

USNM 33338 (8, 183–~275 mm). Atlantic; Cape May to Nantucket; 39°40'05"N, 69°21'25"W; 1098 fm (2009 m); 1 Aug 1883; *Albatross* 2052; both description and ledger listed 10 specimens, one sent to Stanford (CAS-SU 9466), eight found as of 1-5-53.

Status: Synonym of *Halosauropsis macrochir* (Günther, 1878) (McDowell, 1973a:86).

Remarks: The lectotype was designated by Jordan and Evermann (1896:610).

Halosaurus guentheri Goode and Bean, 1896:131.

Holotype: USNM 38070 (232 mm). Atlantic; Nantucket to Cape Charles; 39°13'00"N, 72°01'00"W; 594 fm (1087 m); 20 Sep 1886; *Albatross* 2722.

Status: Valid.

Halosaurus johnsonianus Vaillant, 1888:181, pl. XV, fig. 2.

Syntypes: USNM 42094 (1, 104 mm). Atlantic, Morocco; Côtes du Maroc, Cap Cantin; 32°31'N, 9°49'W; 1350 m; 17 Jun 1883; *Talisman* sta 34; formerly MNHN 85-374; locality given only as dredge no. XXXIII, "Côtes du Maroc," 1350 m; these data match only no. 34 in list of *Talisman* stations given by Smith (1888:981).

USNM 42109 (1, 140 mm). Atlantic, Western Sahara; Côtes du Soudan; 23°53'N, 17°16'W; 1232 m; 11 Jul 1883; *Talisman* sta 82; formerly MNHN 85-364; locality given only as dredge no. LXXIX, "Côtes du Soudan," 1232 m; these data match only no. 82 in list of *Talisman* stations given by Smith (1888:983).

Status: Valid.

Remarks: Vaillant did not establish a holotype in his description. He had 96 specimens. Although he gave measurements and a descriptive account of one of these, he did not explicitly say that it was the type and referred to it only as "l'individu examiné." According to Article 73(a)(i) of the ICZN, this is insufficient to establish a holotype. Reference by subsequent authors to this specimen as the holotype does not constitute a lectotype designation by inference because there were clearly more than one specimen involved in the description (Article 74b, ICZN).

Vaillant gave only partial collection data for his specimens, including a "numero du dragages," a general locality, and a depth. Smith (1888) gave more complete data for the cruise of the *Talisman*, but his station numbers do not match the dredge numbers given by Vaillant. In each case, the locality and depth given by Vaillant matches only one station in Smith's list; that station is cited here.

Halosaurus phalacrus Vaillant, 1888:185, pl. XV, fig. 3; pl. XVI, fig. 1.

Syntype: USNM 42105 (1, 155 mm). Atlantic Morocco; Mogador to Canaries; 29°58'N, 11°41'W; 2104 m; 25 Jun 1883; *Talisman* sta 46; locality given only as dredge XLII, "Côtes du Maroc," 2104 m; these data match only no. 46 in list of *Talisman* stations given by Smith (1888:982).

Status: Valid as *Aldrovandia phalacra* (Vaillant, 1888). See Goode and Bean (1896:134).

Remarks: See "Remarks" under *Halosaurus johnsonianus*.

Halosaurus radiatus Garman 1899:298, pl. 60, fig. 2; pl. 84, figs. 3-6.

Syntypes: USNM 57890 (1, ~100 mm). Pacific, Panama; 7°09'45"N, 80°50'00"W; 322 fm (589 m); 23 Feb 1891; *Albatross* 3354.

USNM 153599 (1, 109 mm). Same data as USNM 57890; formerly MCZ 28466.

Status: Valid.

LIPOGENYIDAE

Lipogenys gillii Goode and Bean, 1895:469 pl. 18, fig. 3.

Holotype: USNM 39212 (154 mm). Atlantic, Virginia; Cape Charles to Long Id.; 37°46'30"N, 73°56'30"W; 865 fm (1583 m); 17 Sep 1887; *Albatross* 2742.

Status: Valid.

NOTACANTHIDAE

Macdonaldia alta Gill and Townsend, 1897:232.

Holotype: USNM 48774 (167 mm). Pacific, Alaska; Bering Sea; 54°54'00"N, 168°59'00"W; 1401 fm (2564 m); 12 Aug 1895; *Albatross* 3604; TT-1303, TT-1799; poor condition.

Status: Synonym of *Polyacanthonotus challengerii* (Vaillant, 1888) (McDowell, 1973b:161).

Macdonaldia longa Gill and Townsend, 1897:232.

Holotype: USNM 48775 (200 mm). Pacific, Alaska; Bering Sea between Pribilof and Aleutian Is.; 54°41'00"N, 168°01'00"W; 987 fm (1806 m); 13 Aug 1895; *Albatross* 3607; TT-1304; poor condition.

Status: Synonym of *Polyacanthonotus challengerii* (Vaillant, 1888) (McDowell, 1973b:161).

Notacanthus abbotti Fowler, 1934:267, fig. 28.

Holotype: USNM 92349 (195 mm). Pacific, Philippine Is.; Northern Mindanao and vicinity, Camp Overton Light, S 68° E, 9.1 mi (14.7 km); 8°16'00"N, 124°03'50"E; 423 fm (774 m); 7 Aug 1909; *Albatross* 5510; 1031 hr; LT-2386.

Paratypes: USNM 93351 (1, 45 mm). Pacific, Philippine Is.; China Sea, vicinity southern Luzon; Escarceo Lt., N 59° W, 6 mi (9.7 km); 13°28'15"N, 121°04'30"E; 180 fm (329 m); 23 Jul 1908; *Albatross* 5293; 1559 hr; LT-10101; drawn.

USNM 93352 (1, 75 mm). Pacific, Philippine Is.; northern Mindanao and vicinity; Macabalan Pt. Lt.; (Mindanao), S 39° E, 6 mi (9.7 km); 8°35'30"N, 124°36'00"E; 200 fm (366 m); 5 Aug 1909; *Albatross* 5504; 0615 hr; LT-3747.

USNM 93353 (1, ~54 mm). Pacific, Philippine Is.; northern Mindanao and vicinity; Camp Overton Lt.,

Iligan Bay, S 6°E, 4.9 mi (7.9 km); 8°17'24"N, 124°11'42"E; 270 fm (494 m); 5 Aug 1909; *Albatross* 5508; 1517 hr; LT-2368; head crushed.

Status: Valid.

Notacanthus analis Gill, 1883:255.

Holotype: USNM 33327 (187 mm). Atlantic; Cape May to Nantucket; 40°02'00"N, 68°50'30"W; 547 fm (1001 m); 31 Jul 1883; *Albatross* 2048.

Status: Synonym of *Notacanthus chemnitzii* Bloch, 1788 (McDowell, 1973b:204).

Notacanthus phasganorus Goode, 1881:535.

Holotype: USNM 25972 (395 mm). Atlantic, Canada; Grand Bank of Newfoundland; schooner *Gatherer*, Capt. B. Gilpatrick; from stomach of a shark, *Somniosus brevipinnis*.

Status: Synonym of *Notacanthus chemnitzii* Bloch, 1788 (McDowell, 1973b:203).

Notacanthus spinosus Garman, 1899:301, pl. L', fig. 4.

Syntype: USNM 153594 (1, 64 mm). Pacific, Panama; 7°31'30"N, 79°14'W; 458 fm (838 m); 8 Mar 1891;

Albatross 3384; formerly MCZ 28464.

Status: Valid.

Polyacanthonotus merretti Sulak, Crabtree, and Hureau, 1984:59, figs. 1, 2.

Holotype: USNM 261461 (109 mm). Atlantic, Bahama Is.; 24°05'00"N, 77°23'12"W; 1400–1409 m; 27 Feb 1973; *Columbus Iselin* 7305-57.

Status: Valid.

Polyacanthonotus vaillanti Fowler, 1934:266, fig. 27.

Holotype: USNM 044248 (186 mm). Atlantic; Cape Hatteras to Nantucket; 38°47'20"N, 72°37'00"W; 1091 fm (1997 m); 5 Nov 1883; *Albatross* 2103.

Status: Synonymized with *Polyacanthonotus africanus* (Gilchrist and von Bonde, 1924) by McDowell (1973b:172). Sulak et al. (1984:65) synonymized *africanus* with *Polyacanthonotus challengerii* (Vaillant, 1888).

Remarks: Fowler gave the wrong data for *Albatross* station 2103. The data cited above are from Townsend (1901:394).

Literature Cited

- Anonymous
1882. List of Collections Made by the Fishing Vessels of Gloucester and Other New England Sea-ports for the United States Fish Commission, from 1877-1880. *Report of the Commissioner, United States Commission of Fish and Fisheries for 1879*, 7:787-835.
- Abe, T., M. Miki, and M. Asai
1977. Description of a New Garden Eel from Japan. *U. O.*, (28):1-8, 2 text-figures, 1 plate.
- Adams, A.C., and W.C. Kendall
1891. Report upon an Investigation of the Fishing Grounds Off the West Coast of Florida. *Bulletin of the United States Fish Commission*, 9:289-312, plate cxi, 1 text-figure.
- Asano, H.
1962. Studies on the Congrid Eels of Japan. *Bulletin of the Misaki Marine Biological Institute, Kyoto University*, 1: 143 pages, 62 figures.
- Bean, B.A.
1904. A New Pelican Fish from the Pacific. *Smithsonian Miscellaneous Collections*, 45:254, figure 31.
- Bean, T.H.
1890. New Fishes Collected Off the Coast of Alaska and the Adjacent Region Southward. *Proceedings of the United States National Museum*, 13:37-45.
- Bean, T.H., and H.G. Dressel
1884. Diagnoses of Three New Species of Fishes from the Gulf of Mexico. *Proceedings of the Biological Society of Washington*, 2:99-100.
- Beebe, W.
1932. Nineteen New Species and Four Post-Larval Deep-Sea Fish. *Zoologica (New York)*, 13(4):47-107, figures 8-31.
- Beebe, W., and J. Crane
1937. Deep-Sea Fishes of the Bermuda Oceanographic Expeditions, Family Serrivomeridae, Part II: Genus *Platuronides*. *Zoologica (New York)*, 22(26):331-348, 14 text-figures.
- Beebe, W., and J. Tee-Van
1928. The Fishes of Port-au-Prince Bay, Haiti. *Zoologica (New York)*, 10(1):1-279, figures.
1932. New Bermuda Fish. *Zoologica (New York)*, 13(5):109-120.
- Bertin, L.
1934. Mise au point de la systématique des poissons abyssaux appartenant aux genres *Saccopharynx* et *Eurypharynx*. *Bulletin du Muséum National d'Histoire Naturelle (Paris)*, series 2, 6(1):26-31.
- Blache, J.
1971. Contribution à la connaissance des poissons Anguilliformes de la Côte Occidentale d'Afrique, onzième note: les genres *Mystriophis* et *Echiophis* (Fam. des Ophichthidae). *Bulletin de l'Institut Fondamental d'Afrique Noir*, series A, 33(1):202-226, 15 figures.
- Blache, J., and M.L. Bauchot
1972. Contribution à la connaissance des poissons Anguilliformes de la Côte Occidentale d'Afrique, 13e note: les genres *Verma*, *Apterichthus* [sic], *Ichthyapus*, *Hemerorhinus*, *Caecula*, *Dalophis* avec la description de deux genres nouveaux (Fam. des Ophichthidae). *Bulletin de l'Institut Fondamental d'Afrique Noir*, series A, 34(3):692-773, 35 figures.
- Bliss, R.
1883. Descriptions of New Species of Mauritian Fishes. *Transactions de la Société Royale des Arts et des Sciences de Maurice*, new series, 13:45-63.
- Böhlke, E.B.
1982. Vertebral Formulae for Type Specimens of Eels (Pisces: Anguilliformes). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 134:31-49.
1984. Catalog of Type Specimens in the Ichthyological Collection of the Academy of Natural Sciences of Philadelphia. *Special Publication of the Academy of Natural Sciences of Philadelphia*, 14: 246 pages.
- Böhlke, E.B., J.E. McCosker, and J.E. Böhlke
1989. Family Muraenidae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoirs of the Sears Foundation for Marine Research*, 1(9):104-206, figures 111-201.
- Böhlke, J.E.
1953. A Catalogue of the Type Specimens of Recent Fishes in the Natural History Museum of Stanford University. *Stanford Ichthyological Bulletin*, 5:1-168.
1956. A Synopsis of the Eels of the Family Xenocoelidae (Including the Chlopsidae and Chilorhinidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 108:61-95, figures 1-8, plate 7.
1960. A New Ophichthid Eel of the Genus *Pseudomyrophis* from the Gulf of Mexico. *Notulae Naturae*, 329:1-8, 2 figures.
1967. The Descriptions of Three New Eels from the Tropical West Atlantic. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 118(4):91-108, 3 figures.
- Böhlke, J.E., and E.B. Böhlke
1976. The Chestnut Moray, *Enchelycore carychroa*, a New Species from the West Atlantic. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 127(13):137-146, 3 figures.
1977. A New Moray, *Gymnothorax hubbsi* (Anguilliformes, Muraenidae), from the Western North Atlantic. *Bulletin of Marine Science*, 27(2):237-240, 3 figures.
- 1980a. *Enchelycore kamara*: A New Moray from the Tropical Pacific Ocean. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 132:173-175, 3 figures.
- 1980b. The Identity of the Moray *Gymnothorax conspersus* Poey, and Description of *G. kolpos*, n. sp., from the Western Atlantic Ocean. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 132:218-227, 3 figures.
- Böhlke, J.E., and J.H. Caruso
1980. *Ophichthus rex*: A New Giant Snake Eel from the Gulf of Mexico (Anguilliformes, Ophichthidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 132:239-244, 3 figures.
- Böhlke, J.E., and J.E. McCosker
1975. The Status of the Ophichthid Eel Genera *Caecula* Vahl and *Sphagebranchus* Bloch, and the Description of a New Genus and Species from Fresh Waters in Brazil. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 127(1):1-11, figures 1-7.
- Böhlke, J.E., and J.E. Randall
1981. Four New Garden Eels (Congridae, Heterocongrinae) from the Pacific and Indian Oceans. *Bulletin of Marine Science*, 31(2):366-382, 8 figures.
- Böhlke, J.E., and D.G. Smith
1968. A New Xenocoelid Eel from the Bahamas, with Notes on Other Species in the Family. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 120(2):25-43, 3 figures.
- Bussing, W.A.
1991. A New Species of Eastern Pacific Moray Eel (Pisces: Muraenidae). *Revista de Biología Tropical*, 39(1):97-102, 3 figures.
- Castle, P.H.J.
1960. Two Eels of the Genus *Synaphobranchus* from the Gulf of Mexico. *Fieldiana, Zoology*, 39(35):387-398, figures 66-67.
1964. Deep-Sea Eels: Family Synaphobranchidae. *Galathea Report*,

- 7:29-42, 2 figures.
1969. An Index and Bibliography of Eel Larvae. *Special Publication of the J.L.B. Smith Institute of Ichthyology, Rhodes University, South Africa*, 7:1-121.
1980. Identification of *Congrogadus marginatus* from Hawaii with the Eel Genus *Ariosoma* (Pisces: Congridae). *Copeia*, 1980(1):159-160.
1990. Two New Species of the Previously Monotypic Congrid Eel Genera *Poeciloconger* and *Macrocephenchelys* from Eastern Australia. *Records of the Australian Museum*, 42(2):119-126, figures 1-4.
- In press. Alcock's Congrid Eels from the Investigator Collections in Indian Seas 1888-1894. *Copeia*.
- Castle, P.H.J., and J.E. Böhlke
1976. Sexual Dimorphism in Size and Vertebral Number in the Western Atlantic Eel *Moringua edwardsi* (Anguilliformes, Moringuidae). *Bulletin of Marine Science*, 26(4):615-619, 2 figures.
- Castle, P.H.J., and N.S. Raju
1975. Some Rare Leptocephali from the Atlantic and Indo-Pacific Oceans. *Dana Report*, 85:1-25, 7 figures, 1 plate.
- Castle, P.H.J., and G.R. Williamson
1975. Systematics and Distribution of Eels of the *Muraenesox* Group (Anguilliformes, Muraenesocidae). *Special Publication of the J.L.B. Smith Institute of Ichthyology*, 15: 9 pages, 4 figures.
- Chan, W.L.
1967. A New Species of Congrid Eel from the South China Sea. *Journal of Natural History*, 1:97-112, 14 figures.
- Collette, B.B., N.V. Parin, and M.S. Nizinski
1992. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 3: Beloniformes (Teleostei). *Smithsonian Contributions to Zoology*, 525: 16 pages.
- Collette, B.B., D.G. Smith, and E.B. Böhlke
1991. *Gymnothorax parini*, a New Species of Moray Eel (Teleostei: Muraenidae) from Walters Shoals, Madagascar Ridge. *Proceedings of the Biological Society of Washington*, 104(2):344-350, 3 figures.
- Ege, V.
1939. A Revision of the Genus *Anguilla* Shaw: A Systematic, Phylogenetic and Geographical Study. *Dana Report*, 16:1-256, 53 figures, 6 plates.
- Eigenmann, C.H.
1887. Description of a New Species of *Ophichthys* (*Ophichthys retropinnis*), from Pensacola, Fla. *Proceedings of the United States National Museum*, 10(613):116.
- Eigenmann, C.H., and C.H. Kennedy
1901. Unilateral Coloration with a Bilateral Effect. *Science*, new series, 13(334):828-830, 3 unnumbered figures.
1902. The Leptocephalus of the American Eel and Other American Leptocephali. *Bulletin of the United States Fish Commission*, 21:81-92, 14 figures.
- Eldred, B.
- 1968a. The Eel Larva, *Leptocephalus moringua edwardsi* (Jordan and Bollman, 1889) (Moringuidae) in the Florida Straits. *Florida Board of Conservation Marine Research Laboratory Leaflet Series*, 4(1)6:1-5, 1 figure.
- 1968b. The Larval Development and Taxonomy of the Pygmy Moray Eel, *Anarchias yoshiae* Kanazawa 1952. *Florida Board of Conservation Marine Research Laboratory Leaflet Series*, 4(1)10:1-8, 3 figures.
1969. Embryology and Larval Development of the Blackedge Moray, *Gymnothorax nigromarginatus* (Girard, 1859). *Florida Department of Natural Resources Marine Research Laboratory Leaflet Series*, 4(1)13: 16 unnumbered pages, 6 figures.
1970. Larva of the Spotted Moray, *Gymnothorax moringa* (Cuvier, 1829). *Florida Department of Natural Resources Marine Research Laboratory Leaflet Series*, 4(1)15:1-10, 2 figures.
- Evermann, B.W., and M.C. Marsh
1900. Descriptions of New Genera and Species of Fishes from Puerto Rico. *Report of the Commissioner, United States Commission on Fish and Fisheries for 1899*, 25:351-362.
1902. The Fishes of Porto Rico. *Bulletin of the United States Fish Commission*, 20(1):49-350, 112 figures, 49 plates.
- Ferraris, C.J., and R.P. Vari
1992. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 4: Gonorhynchiformes, Gymnotiformes, and Siluriformes (Teleostei: Ostariophysii). *Smithsonian Contributions to Zoology*, 535: 52 pages.
- Fowler, H.W.
1912. Descriptions of Nine New Eels, with Notes on Other Species. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 64:8-33, 9 figures.
1928. The Fishes of Oceania. *Memoirs of the Bernice P. Bishop Museum*, 10:i-iii, 1-540, plates 1-49.
1932. The Fishes Obtained by Lieut. H.C. Kellers of the United States Naval Eclipse Expedition of 1930, at Niuafoou Island, Tonga Group, in Oceania. *Proceedings of the United States National Museum*, 81(2931):1-9, 3 figures.
1934. Descriptions of New Fishes Obtained 1907 to 1910, Chiefly in the Philippine Islands and Adjacent Seas. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 85:233-367, 117 figures.
1938. The Fishes of the George Vanderbilt South Pacific Expedition, 1937. *Monographs of the Academy of Natural Sciences of Philadelphia*, 2: 349 pages, 12 plates.
- Fowler, H.W., and B.A. Bean
1923. Descriptions of Eighteen New Species of Fishes from the Wilkes Exploring Expedition, Preserved in the United States National Museum. *Proceedings of the United States National Museum*, 63(2488):1-27.
- Garman, S.
1899. Reports on an Exploration Off the West Coasts of Mexico, Central and South America, and the Galapagos Islands...: The Fishes. *Memoirs of the Museum of Comparative Zoology*, 24:1-431, plates 1-85, A-N.
- Gilbert, C.H.
1890. A Preliminary Report on the Fishes Collected by the Steamer Albatross on the Pacific Coast of North America during the Year 1889, with Descriptions of Twelve New Genera and Ninety-Two New Species. *Proceedings of the United States National Museum*, 13(797):49-126.
- 1891a. Descriptions of Apodal Fishes from the Tropical Pacific. *Proceedings of the United States National Museum*, 14(856):347-352.
- 1891b. Descriptions of Thirty-Four New Species of Fishes Collected in 1888 and 1889, Principally among the Santa Barbara Islands and in the Gulf of California. *Proceedings of the United States National Museum*, 14(880):539-566.
1905. The Aquatic Resources of the Hawaiian Islands, Section II: The Deep-Sea Fishes. *Bulletin of the United States Fish Commission*, 23(2):i-xi, 577-713, figures 230-276, plates 66-101.
- Gilbert, C.H., and F. Cramer
1897. Report on the Fishes Dredged in Deep Water Near the Hawaiian Islands, with Descriptions and Figures of Twenty-three New Species. *Proceedings of the United States National Museum*, 19(1114):403-435, plates 36-48.
- Gilbert, C.H., and E.C. Starks
1904. The Fishes of Panama Bay. *Memoirs of the California Academy of Sciences*, 4:1-304, 62 figures on 33 plates.
- Gill, T.
1883. Diagnosis of New Genera and Species of Deep-Sea Fish-Like Vertebrates. *Proceedings of the United States National Museum*,

- 6(380):253-260.
1884. Three New Families of Fishes Added to the Deep-sea Fauna in a Year. *The American Naturalist*, 18:433.
- Gill, T., and J.A. Ryder
- 1883a. Diagnoses of New Genera of Nemichthyoid Eels. *Proceedings of the United States National Museum*, 6(381):260-262.
- 1883b. On the Anatomy and Relations of the Eurypharyngidae. *Proceedings of the United States National Museum*, 6(382):262-273.
- Gill, T., and H.M. Smith
1900. The Moringuoid Eels in American Waters. *Science*, new series, 11(286):973-974.
- Gill, T., and C.H. Townsend
1897. Diagnoses of New Species of Fishes Found in Bering Sea. *Proceedings of the Biological Society of Washington*, 11:231-234.
- Ginsburg, I.
1951. The Eels of the Northern Gulf Coast of the United States and Some Related Species. *The Texas Journal of Science*, 3(3):431-485, 16 figures.
1954. Four New Fishes and One Little-Known Species from the East Coast of the United States Including the Gulf of Mexico. *Journal of the Washington Academy of Sciences*, 44(8):256-264, 6 figures.
- Girard, C.
1858. Notes upon Various New Genera and New Species of Fishes, in the Museum of the Smithsonian Institution, and Collected in Connection with the United States and Mexican Boundary Survey: Major William Emory, Commissioner. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 10:167-171.
- 1859a. Ichthyology. *United States and Mexican Boundary Survey*, 2(2):1-85, 41 plates.
- 1859b. Ichthyological Notices. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 11:56-58.
- Goode, G.B.
1881. *Notacanthus phasganorus*, a New Species of Notacanthidae from the Grand Banks of Newfoundland. *Proceedings of the United States National Museum*, 3(184):535-537.
- Goode, G.B., and T.H. Bean
1879. A List of the Fishes of Essex County, Including Those of Massachusetts Bay According to the Latest Results of the Work of the U.S. Fish Commission. *Bulletin of the Essex Institute*, 11:1-38.
1880. Catalogue of a Collection of Fishes Obtained in the Gulf of Mexico, by Dr. J.W. Velie, with Descriptions of Seven New Species. *Proceedings of the United States National Museum*, 2(98):333-345.
1882. Descriptions of Twenty-Five New Species of Fish from the Southern United States, and Three New Genera, *Letharcus* [sic], *Ioglossus*, and *Chriodorus*. *Proceedings of the United States National Museum*, 5(297):412-437.
1883. Reports on Results of Dredging under the Supervision of Alexander Agassiz, on the East Coast of the United States, during the Summer of 1880, by the U.S. Coast Survey Steamer "Blake," Commander V.R. Bartlett, USN, Commanding, XIX: Report on the Fishes. *Bulletin of the Museum of Comparative Zoology*, 10(5):183-226.
1895. A Revision of the Order Heteromi, Deep-Sea Fishes, with a Description of the New Generic Types *Macdonaldia* and *Lipogenys*. *Proceedings of the United States National Museum*, 17(1013):455-470, plate 18.
1896. Oceanic Ichthyology, a Treatise on the Deep-sea and Pelagic Fishes of the World. . . *Special Bulletin of the United States National Museum*, 1:xxxv + 553 pages, 2:xiii + 26 pages, 123 plates, 417 figures.
- Gosline, W.A.
- 1951a. The Osteology and Classification of the Ophichthid Eels of the Hawaiian Islands. *Pacific Science*, 5(4):298-320, 18 figures.
- 1951b. *Chilorhinus brocki*, a New Echelid Eel from Hawaii, with Notes on the Classification of the Order Anguillida. *Copeia*, 1951(3):195-202, 1 figure.
1958. Central Pacific Eels of the Genus *Uropterygius*, with Descriptions of Two New Species. *Pacific Science*, 12(3):221-228, 2 figures.
- Gosline, W.A., and V.E. Brock
1960. *Handbook of Hawaiian Fishes*. 372 pages, 277 figures. Honolulu: University of Hawaii Press.
- Harry, R.R.
1948. New Records for the Fish, *Myrichthys tigrinus*, a Snake Eel of the Eastern Tropical Pacific, with a Relocation of the Type Locality. *Copeia*, 1948(2):145-146.
- Herre, A.W.C.T.
1953. Eight Additions to the Philippine Fish Fauna, Including Three New Species. *Philippine Journal of Science*, 82(1):9-14
- Hildebrand, S.F.
1946. A Descriptive Catalog of the Shore Fishes of Peru. *United States National Museum Bulletin*, 189:xi + 530 pages, 95 figures.
- Hildebrand, S.F., and O. Barton
1949. A Collection of Fishes from Talara, Perú. *Smithsonian Miscellaneous Collections*, 111(10):1-36, 9 figures.
- Howe, J.C., and V.G. Springer
1993. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 5: Sharks (Chondrichthyes: Selachii). *Smithsonian Contributions to Zoology*, 540: 19 pages.
- International Trust for Zoological Nomenclature
1985. *International Code of Zoological Nomenclature*. Third Edition, xx + 338 pages. Berkeley: University of California Press.
- Jenkins, O.P.
1903. Report on Collections of Fishes Made in the Hawaiian Islands, with Descriptions of New Species. *Bulletin of the United States Fish Commission*, 22:417-511, 50 figures.
- Jordan, D.S.
1884. List of Fishes from Egmont Key, Florida, in the Museum of Yale College, with Description of Two New Species. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 36:42-46.
1913. Description of *Anguilla manabei*, a New Eel from Japan. *Proceedings of the United States National Museum*, 44(1957):359-360, plate 57.
1921. Description of Deep-Sea Fishes from the Coast of Hawaii, Killed by a Lava Flow from Mauna Loa. *Proceedings of the United States National Museum*, 59(2392):643-656, 8 figures.
- Jordan, D.S., and C.H. Bollman
1889. List of Fishes Collected at Green Turtle Cay, in the Bahamas, by Charles L. Edwards, with Descriptions of Three New Species. *Proceedings of the United States National Museum*, 11(752):549-553.
1890. Descriptions of New Species of Fishes Collected at the Galapagos Islands and Along the Coast of the United States of Colombia, 1887-88. *Proceedings of the United States National Museum*, 12(770):149-183.
- Jordan, D.S., and B.M. Davis
1891. A Preliminary Review of the Apodal Fishes or Eels Inhabiting the Waters of America and Europe. *Report of the Commissioner, United States Commission of Fish and Fisheries for 1888*, 16(9):581-677, plates 73-80. [Published in journal in 1892, as a preprint in 1891.]
- Jordan, D.S., and B.W. Evermann
1887. Description of Six New Species of Fishes from the Gulf of Mexico, with Notes on Other Species. *Proceedings of the United States National Museum*, 9(586):466-476.
1896. The Fishes of North and Middle America *United States National Museum Bulletin*, 47(1):i-lx + 1-1240.
1898. The Fishes of North and Middle America *United States National*

- Museum Bulletin*, 47(3):i-xxiv + 2138a-3136.
1900. The Fishes of North and Middle America. *United States National Museum Bulletin*, 47(4):i-ci + 3137-3313, plates 1-392.
1903. Description of New Genera and Species of Fishes from the Hawaiian Islands. *Bulletin of the United States Fish Commission*, 22:161-208.
1905. The Aquatic Resources of the Hawaiian Islands, Part 1: The Shore Fishes. *Bulletin of the United States Fish Commission*, 23:i-xxviii, 1-574, black and white plates 1-65, color plates 1-73.
- Jordan, D.S., B.W. Evermann, and H.W. Clark
1930. Check List of the Fishes and Fishlike Vertebrates of North and Middle America North of the Northern Boundary of Venezuela and Colombia. *Report of the United States Commissioner of Fisheries for 1928*, Appendix 10: 670 pages.
- Jordan, D.S., and C.H. Gilbert
1881. Description of a New Species of *Nemichthys* (*Nemichthys avocetta*), from Puget Sound. *Proceedings of the United States National Museum*, 3(170):409-410.
- 1882a. Descriptions of Thirty-Three New Species of Fishes from Mazatlan, Mexico. *Proceedings of the United States National Museum*, 4(237):338-365.
- 1882b. Notes on Fishes Observed About Pensacola, Florida, and Galveston, Texas, with Description of a New Species. *Proceedings of the United States National Museum*, 5(282):241-307.
- 1882c. Catalogue of the Fishes Collected by Mr. John Xantus at Cape San Lucas, which Are Now in the United States National Museum, with Descriptions of Eight New Species. *Proceedings of the United States National Museum*, 5(290):353-371.
- 1883a. Description of a New Eel (*Sidera castanea*) from Mazatlan, Mexico. *Proceedings of the United States National Museum*, 5(335):647-648.
- 1883b. Description of a New Muraenoid Eel (*Sidera chlevastes*) from the Galapagos Islands. *Proceedings of the United States National Museum*, 6(369):208-210.
- Jordan, D.S. and C.L. Hubbs
1925. Records of Fishes Obtained by David Starr Jordan in Japan, 1922. *Memoirs of the Carnegie Museum*, 10(2):93-346, figure 1, plates 5-12.
- Jordan, D.S., and A. Seale
1906. The Fishes of Samoa: Description of the Species Found in the Archipelago, with a Provisional Check-List of the Fishes of Oceania. *Bulletin of the United States Bureau of Fisheries*, 25:173-488, 111 figures, plates 38-53.
- Jordan, D.S., and J.O. Snyder
1900. A List of Fishes Collected in Japan by Keinosuke Otaki, and by the United States Steamer Albatross, with Descriptions of Fourteen New Species. *Proceedings of the United States National Museum*, 23(1213):335-380, plates 9-20.
1901. A Review of the Apodal Fishes or Eels of Japan, with Descriptions of Nineteen New Species. *Proceedings of the United States National Museum*, 23(1239):837-890, 22 figures.
1904. Notes on Collections of Fishes from Oahu Island and Laysan Island, Hawaii, with Descriptions of Four New Species. *Proceedings of the United States National Museum*, 27(1377):939-948.
- Kanazawa, R.H.
1952. More New Species and New Records of Fishes from Bermuda. *Fieldiana (Zoology)*, 34(7):71-100, 13 figures.
1957. A New Species of Eel, *Coloconger meadi*, and New Records for the Ateleopid Fish, *Ijimaia antellarum* [sic] Howell Rivero, Both from the Gulf of Mexico. *Copeia*, 1957(3):234-235, 1 figure.
1958. A Revision of the Eels of the Genus *Conger* with Descriptions of Four New Species. *Proceedings of the United States National Museum*, 108(3400):219-267, 7 figures, 4 plates.
- 1961a. *Paraconger*, a New Genus with Three New Species of Eels (Family Congridae). *Proceedings of the United States National Museum*, 113(3450):1-14, 3 figures, 2 plates.
- 1961b. *Paramyrus kellersi* Fowler, a Synonym of the Eel *Conger cinereus* Rüppell. *Copeia*, 1961(1):115.
- 1961c. A New Eel, *Coloconger cadenati* and a Redescription of the Heterocongrid Eel, *Taenioconger longissimus* (Günther) Both from the Coast of Senegal. *Bulletin de l'Institut Fondamental d'Afrique Noire*, 23, series A, 1:108-115, 2 plates.
1963. Two New Species of Ophichthid Eels from the Western Atlantic. *Proceedings of the Biological Society of Washington*, 76:281-288, 3 figures, 1 plate.
- Kanazawa, R.H., and G.E. Maul
1967. Description of a New Genus and Species of the Eel Family Nemichthyidae from the Eastern Atlantic. *Bocagiana*, 12:1-6, 3 figures, 2 plates.
- Leiby, M.M., and R.W. Yerger
1980. The Genus *Bascanichthys* (Pisces: Ophichthidae) in the Gulf of Mexico. *Copeia*, 1980(3):402-408, 3 figures.
- Leviton, A.E., R.H. Gibbs, Jr., E. Heal, and C.E. Dawson
1985. Standards in Herpetology and Ichthyology, Part I: Standard Symbolic Codes for Institutional Resource Collections in Herpetology and Ichthyology. *Copeia*, 1985(3):802-832.
- Longley, W.H., and S.F. Hildebrand
1940. New Genera and Species of Fishes from Tortugas, Florida. *Papers from Tortugas Laboratory*, 32 (*Carnegie Institution of Washington Publication No. 517*):223-285, 28 figures, 1 plate.
- Lubbock, R.
1980. The Shore Fishes of Ascension Island. *Journal of Fish Biology*, 17(3):283-303, 3 figures.
- McCosker, J.E.
1970. A Review of the Eel Genera *Leptenchelys* and *Muraenichthys*, with the Description of a New Genus, *Schismorhynchus*, and a New Species, *Muraenichthys chilensis*. *Pacific Science*, 24(4):506-516, 6 figures.
1974. A Revision of the Ophichthid Eel Genus *Letharchus*. *Copeia*, 1974(3):619-629, 7 figures.
1977. The Osteology, Classification, and Relationships of the Eel Family Ophichthidae. *Proceedings of the California Academy of Sciences*, series 4, 41(1):1-123, 45 figures.
1979. The Snake Eels of the Hawaiian Islands, with the Description of Two New Species. *Proceedings of the California Academy of Sciences*, 42(2):57-67, 6 figures.
- McCosker, J.E., and E.B. Böhlke
1984. Three New Species of Western Atlantic Snake Eels (Pisces: Ophichthidae) of the Genus *Ophichthus*. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 136:24-31, 9 figures.
- McCosker, J.E., E.B. Böhlke, and J.E. Böhlke
1989. Family Ophichthidae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoirs of the Sears Foundation for Marine Research*, 1(9):254-412, figures 241-433.
- McCosker, J.E., and J.E. Böhlke
1982. Three New Genera and Two New Species of Deepwater Western Atlantic Snake-eels (Pisces: Ophichthidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 134:113-121, 9 figures.
1984. A Review of the Snake Eel Genera *Gordiichthys* and *Ethadophis*, with Descriptions of New Species and Comments on Related Atlantic Bascanichthyins (Pisces: Ophichthidae). *Proceedings of the Academy of Natural Sciences of Philadelphia*, 136:32-44, 14 figures.
- McCosker, J.E., K. Hatooka, K. Sasaki, and J.T. Moyer
1984. Japanese Moray Eels of the Genus *Uropterygius*. *Japanese Journal of Ichthyology*, 31(3):261-267, 1 figure.

- McCosker, J.E., and J.E. Randall
 1977. Three New Species of Indo-Pacific Moray Eels (Pisces: Muraenidae). *Proceedings of the California Academy of Sciences*, series 4, 41(3):161-168, 5 figures.
1982. Synonymies of Indian Ocean Eels, with the Description of *Gymnothorax enigmaticus*, a Moray Previously Known as *G. ruppelli*. *Proceedings of the California Academy of Sciences*, 43(2):17-24, 7 figures.
- McCosker, J.E., and R.H. Rosenblatt
 1972. Eastern Pacific Snake Eels of the Genus *Callechelys* (Apodes: Ophichthidae). *Transactions of the San Diego Society of Natural History*, 17(2):15-24, 5 figures.
1975. The Moray Eels (Pisces: Muraenidae) of the Galapagos Islands, with New Records and Synonymies of Extralimital Species. *Proceedings of the California Academy of Sciences*, series 4, 40(13):417-427, 2 figures.
1993. A Revision of the Snake Eel Genus *Myrichthys* (Anguilliformes: Ophichthidae) with the Description of a New Eastern Pacific Species. *Proceedings of the California Academy of Sciences*, 48(8):153-169, 10 figures.
- McDowell, S.B.
 1973a. Family Halosauridae. In D.M. Cohen, editor, *Fishes of the Western North Atlantic, Part 6. Memoirs of the Sears Foundation for Marine Research*, 1(6):32-123, figures 6-13.
- 1973b. Family Notacanthidae. In D.M. Cohen, editor, *Fishes of the Western North Atlantic, Part 6. Memoirs of the Sears Foundation for Marine Research*, 1(6):124-207, figures 14-16.
- Meek, S.E., and S.F. Hildebrand
 1923. The Marine Fishes of Panama. *Field Museum of Natural History Publication No. 215, Zoological Series*, 15(1):xi + 330 pages, 24 plates.
- Moore, J., and R. Boardman
 1991. List of Type Specimens in the Fish Collection at the Yale Peabody Museum, with a Brief History of Ichthyology at Yale University. *Postilla*, 206:1-36.
- Myers, G.S., and C.B. Wade
 1941. Four New Genera and Ten New Species of Eels from the Pacific Coast of Tropical America. *Allan Hancock Pacific Expeditions*, 9(4):65-111, plates 7-16.
- Nielsen, J.G., and D.G. Smith
 1978. The Eel Family Nemichthyidae. *Dana Report*, (88):1-71, 36 figures, 2 plates.
- Ogilby, J.D.
 1898. New Genera and Species of Fishes. *Proceedings of the Linnean Society of New South Wales*, 23:280-299.
- Osburn, R.C., and J.T. Nichols
 1916. Shore Fishes Collected by the 'Albatross' Expedition in Lower California with Descriptions of New Species. *Bulletin of the American Museum of Natural History*, 35(16):139-181, 14 figures.
- Peden, A.E.
 1972. Redescription and Distribution of the Rare Deep-Sea Eel *Xenomystax atrarius* in the Eastern Pacific Ocean. *Journal of the Fisheries Research Board of Canada*, 29:1-12, 8 figures.
- Poey, F.
 1858-1861. *Memorias sobre la historia natural de la Isla de Cuba*. Volume 2, 442 pages. [1858: pages 1-96; 1860: pages 97-336 and plates 10-14; 1861: pages 337-442 and plates 15-19.]
1876. Poissons de l'île de Cuba, espèces nouvelles décrites. *Annals of the Lyceum of Natural History of New York*, 11(6):58-70, plates 7-10.
- Randall, J.E.
 1973. Tahitian Fish Names and a Preliminary Checklist of the Fishes of the Society Islands. *Occasional Papers of the Bernice P. Bishop Museum*, 24(11):167-214.
- Randall, J.E., K. Aida, Y. Oshima, K. Hori, and Y. Hashimoto
 1981. Occurrence of Crinotoxin and Hemagglutinin in the Skin Mucus of the Moray Eel *Lycodontis nudivomer*. *Marine Biology*, 62:179-184.
- Randall, J.E., and J.R. Chess
 1979. A New Species of Garden Eel (Congridae: Heterocongrinae) of the Genus *Gorgasia* from Hawaii. *Pacific Science*, 33(1):17-23, 3 figures.
- Randall, J.E., J.L. Earle, T. Hayes, C. Pittman, M. Severns, and R.J.F. Smith
 1993. Eleven New Records and Validations of Shore Fishes from the Hawaiian Islands. *Pacific Science*, 47(3):222-239, 1 figure, 1 plate.
- Randall, J.E., and J.E. McCosker
 1975. The Eels of Easter Island with a Description of a New Moray. *Contributions in Science*, 264: 32 pages, 15 figures.
- Randall, J.E., and A. Wheeler
 1991. Reidentification of Seven Tropical Pacific Fishes Collected and Observed by the Forsters during the Voyage of HMS *Resolution*, 1772-75. *Copeia*, 1991(3):760-767, 3 figures, 1 plate.
- Reid, E.D.
 1934. Two New Congrid Eels and a New Flatfish. *Smithsonian Miscellaneous Collections*, 91(15):1-11, 2 figures, 1 plate.
1940. A New Genus and Species of Eel from the Puerto Rican Deep. *Smithsonian Miscellaneous Collections*, 91(31):1-5, figure 1.
- Robins, C.H., and C.R. Robins
 1976. New Genera and Species of Dysommene and Synphobranchine Eels (Synphobranchidae) with an Analysis of the Dysommeneae. *Proceedings of the Academy of Natural Sciences of Philadelphia*, 127(18):249-280, 9 figures.
1989. Family Synphobranchidae. In E.B. Böhlke, editor, *Fishes of the Western North Atlantic, Part 9. Memoirs of the Sears Foundation for Marine Research*, 1(9):207-253, figures 202-240.
- Robison, B.H., and T.M. Lancaft
 1984. *Gorgasia barnesi* (Congridae: Heterocongrinae), a New Garden Eel from Japan. *Copeia*, 1984(2):404-409, 2 figures.
- Rosenblatt, R.H.
 1958. The Status and Synonymy of the Eastern Pacific Eel *Ariosoma gilberti* (Ogilby). *Copeia*, 1958(1):52-54.
1967. The Zoogeographic Relationships of the Marine Shore Fishes of Tropical America. *Studies in Tropical Oceanography*, 5:579-592.
- Rosenblatt, R.H., and J.E. McCosker
 1970. Key to Ophichthid Genera, with Descriptions of Two New Genera and Three New Species from the Eastern Pacific. *Pacific Science*, 24(4):494-505, 8 figures.
- Rosenblatt, R.H., and I. Rubinoff
 1972. *Pythonichthys asodes*, a New Heterenchelyid Eel from the Gulf of Panama. *Bulletin of Marine Science*, 22(2):354-364, 3 figures.
- Schultz, L.P.
 1943. Fishes of the Phoenix and Samoan Islands Collected in 1939 during the Expedition of the U.S.S. "Bushnell." *United States National Museum Bulletin*, 180: x + 316 pages, 27 figures, 9 plates.
- Schultz, L.P., E.S. Herald, E.A. Lachner, A.D. Welander, and L.P. Woods
 1953. Fishes of the Marshall and Marianas Islands. *United States National Museum Bulletin*, 202(1):i-xxii + 1-685, figures 1-90, plates 1-74.
- Schultz, L.P., and L.P. Woods
 1949. Keys to the Genera of Echelid Eels and the Species of *Muraenichthys* of the Pacific, with Two New Species. *Journal of the Washington Academy of Sciences*, 39(5):169-174, 2 figures.
- Seale, A.
 1901. Report of a Mission to Guam, Part 2: Fishes. *Occasional Papers of the Bernice P. Bishop Museum*, 1(3):61-128.
1906. Fishes of the South Pacific. *Occasional Papers of the Bernice P. Bishop Museum*, 4(1):1-89, 23 figures.

1917. New Species of Apodal Fishes. *Bulletin of the Museum of Comparative Zoology*, 61(4):79-94.
- Smith, D.G.
 1970. The Correct Identity of Two "Rare" Hawaiian Eels. *Copeia*, 1970(2):366-367.
 1971. Osteology and Relationships of the Congrid Eels of the Western North Atlantic (Pisces, Anguilliformes). 163 pages, 63 figures. Doctoral dissertation, University of Miami [Florida].
 1989a. Family Anguillidae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):25-47, figures 4-18.
 1989b. Family Chlopsidae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):72-97, figures 56-96.
 1989c. Family Congridae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):460-567, figures 504-599.
 1989d. Family Nettastomatidae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):568-612, figures 600-659.
 1989e. Family Congridae: Leptocephali. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):723-763, figures 736-758.
- Smith, D.G., J.E. Böhlke, and P.H.J. Castle
 1981. A Revision of the Nettastomatid Eel Genera *Nettastoma* and *Nettenchelys* (Pisces: Anguilliformes), with Descriptions of Six New Species. *Proceedings of the Biological Society of Washington*, 94(2):535-560, 12 figures.
- Smith, D.G., and P.H.J. Castle
 1972. The Eel Genus *Neoconger* Girard: Systematics, Osteology, and Life History. *Bulletin of Marine Science*, 22(1):196-249, 27 figures.
 1982. Larvae of the Nettastomatid Eels: Systematics and Distribution. *Dana Reports*, 90: 44 pages, 33 figures.
- Smith, D.G., and R.H. Kanazawa
 1977. Eight New Species and a New Genus of Congrid Eels from the Western North Atlantic with Redescriptions of *Ariosoma analis*, *Hildebrandia guppyi*, and *Rhechias vicinalis*. *Bulletin of Marine Science*, 27(3):530-543, 12 figures.
- Smith, J.L.B.
 1962. Sand-dwelling Eels of the Western Indian Ocean and the Red Sea. *Rhodes University Ichthyological Bulletin*, 24:447-466, figures 1-12, plates 63-68.
- Smith, R., and J. Swain
 1882. Notes on a Collection of Fishes from Johnston's Island, Including Descriptions of Five New Species. *Proceedings of the United States National Museum*, 5(272):119-143.
- Smith, S.
 1888. Lists of the Dredging Stations of the U.S. Fish Commission, the U.S. Coast Survey, and the British Steamer Challenger, in North American Waters, from 1867 to 1887, Together with Those of the Principal European Government Expeditions in the Atlantic and Arctic Oceans. *Annual Report of the Commissioner of Fish and Fisheries for 1886*, 14:873-1017, 5 charts.
- Snyder, J.O.
 1904. A Catalogue of the Shore Fishes Collected by the Steamer Albatross About the Hawaiian Islands in 1902. *Bulletin of the United States Fish Commission*, 22:513-538, 13 plates, 24 figures.
 1908. Descriptions of Eighteen New Species and Two New Genera of Fishes from Japan and the Riu Kiu Islands. *Proceedings of the United States National Museum*, 35(1635):93-111.
 1912. The Fishes of Okinawa, One of the Riu Kiu Islands. *Proceedings of the United States National Museum*, 42(1913):487-519, plates 62-70.
- Springer, V.G., J.T. Williams, and T.M. Orrell
 1991. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 2: Blenniidae. *Smithsonian Contributions to Zoology*, 519: 28 pages.
- Storey, M.H.
 1939. Contributions Toward a Revision of the Ophichthyid Eels, I: The Genera *Callechelys* and *Bascanichthys*, with Descriptions of New Species and Notes on *Myrichthys*. *Stanford Ichthyological Bulletin*, 1(3):61-84, 6 figures.
- Sulak, K.J.
 1977. *Aldrovandia oleosa*, a New Species of the Halosauridae, with Observations on Several Other Species of the Family. *Copeia*, 1977(1):11-20, 8 figures.
- Sulak, K.J., R.E. Crabtree, and J.C. Hureau
 1984. Provisional Review of the Genus *Polyacanthonotus* (Pisces, Notacanthidae) with a Description of a New Atlantic Species, *Polyacanthonotus merretti*. *Cybium*, 8(4):57-68, 2 figures.
- Tighe, K.A.
 1989. Family Serrivomeridae. In E.B. Böhlke, editor, Fishes of the Western North Atlantic, Part 9. *Memoir Sears Foundation for Marine Research*, 1(9):613-627, figures 660-678.
 1992. *Boehlkenchelys longidentata*, a New Genus and Species of Chlopsid Eel (Teleostei: Anguilliformes) from the Indo-West Pacific Region. *Proceedings of the Biological Society of Washington*, 105(1):19-22, 3 figures.
- Townsend, C.H.
 1901. Dredging and Other Records of the United States Fish Commission Steamer Albatross, with Bibliography Relative to the Work of the Vessel. *Annual Report of the Commissioner of Fish and Fisheries for 1900*, 26:387-562, plates 1-6.
- Vaillant, L.
 1888. *Expéditions Scientifique du "Travailleur" et du "Talisman" pendant les Années 1880-1883*. 406 pages, 28 plates. Paris: Masson.
- Vari, R.P., and J.C. Howe
 1991. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 1: Characiformes (Teleostei: Ostariophysi). *Smithsonian Contributions to Zoology*, 517: 52 pages.
- Whitley, G.P.
 1932. Studies in Ichthyology, No. 6. *Records of the Australian Museum*, 18(6):321-348, 3 figures, plates 36-39.

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