# Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 8: Suborder Zoarcoidei (Anarhichadidae, Bathymasteridae, Pholidae, Ptilichthyidae, Scytalinidae, Stichaeidae, Zoarcidae)

VICTOR G. SPRINGER
and
M. ERIC ANDERSON

SMITHSONIAN CONTRIBUTIONS TO ZOOLOGY • NUMBER 589

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## ABSTRACT

Springer, Victor G., and M. Eric Anderson. Catalog of Type Specimens of Recent Fishes in the National Museum of Natural History, Smithsonian Institution, 8: Suborder Zoarcoidei (Anarhichadidae, Bathymasteridae, Pholidae, Ptilichthyidae, Scytalinidae, Stichaeidae, Zoarcidae). *Smithsonian Contributions to Zoology,* number 589, 27 pages, 2 figures, 1997.—This study treats the putative type specimens included in all the families of zoarcoid fishes known or believed to have been deposited in the Smithsonian Institution collections and whose descriptions were published prior to January 1997. The types pertain to 113 species and include at least 530 specimens in 189 lots, of which 71 are holotypes, 20 lectotypes (15 designated herein), seven syntypes, 59 paratypes, and 32 paralectotypes. Of the specimens, four holotypes and at least one syntype and two paralectotypes are lost. In addition, we report paratypes, syntypes, and paralectotypes originally deposited in the Smithsonian collections that were exchanged to other museums, in so far as we have been able to locate them. We list each nominal taxon together with its original literature citation and, for primary types, include published collecting data and length measurements. Discrepancies between original descriptions and putative types are discussed, as are numerous other relevant problems encountered during the course of preparing this catalog.



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# Contents

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## Introduction

This report continues a sequentially numbered series of catalogs of type specimens in the collections of the Division of Fishes, National Museum of Natural History (NMNH), Smithsonian Institution (collections of the former United States National Museum (USNM)), the most recent previously being that of Springer and Orrell (1995). Herein, we treat the putative type specimens included in all the families of zoarcoid fishes (Anderson, 1994:3) represented in the Smithsonian collections prior to January, 1997. Of the eight families contained in the suborder Zoarcoidei, only the monotypic family Zaproridae is not represented by type specimens in the Smithsonian collection (holotype, which is the only type, is deposited in the Canadian Museum of Nature, Ottawa). The types pertain to 113 species and include at least 530 specimens in 189 lots, of which 71 are holotypes, 20 lectotypes (15 designated herein), seven syntypes, 59 paratypes, and 32 paralectotypes. Of the specimens, four holotypes and at least one syntype and two paralectotypes are lost. In addition, we report paratypes, syntypes, and paralectotypes originally deposited in the Smithsonian collections that were exchanged to other museums, in so far as we have been able to locate them. We list each nominal taxon together with its original literature citation and, for primary types, include published collecting data and length measurements. Discrepancies between original descriptions and putative types are discussed, as are numerous other relevant problems encountered during the course of preparing this catalog.

METHODS.—A list of all included species and subspecies, alphabetized by species (as originally spelled), with family assignment for each, is presented first, followed by the family accounts in alphabetical order. The species within each family are presented in alphabetical order, and each is given exactly as it appeared in its original description, followed, in brackets, by the corrected spelling of the genus or species-group name, if mandated by the rules in the 1985 edition of the *International Code of Zoological Nomenclature* (ICZN). All subsequent information that we provide for each taxon is essentially identical with that given in the original description or available elsewhere in the publication containing the original description. Any corrected or additional information we provide that augments that given in the original description is placed in brackets: [ ]. Where known, we provide the USNM accession number for each type lot. The accession numbers refer to files in the Office of the Registrar, Smithsonain Institution. These files often include important information (letters, invoices, etc.) that have bearing on the acquisition of the types and that is not included in the USNM catalog registers. Museum acronyms

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follow those given by Leviton et al. (1985) with modifications of Leviton and Gibbs (1988). The following standard abbreviations are used: SL = standard length; TL = total length. We measured the lengths of many of the earliest described primary types for comparison with lengths given in original descriptions as an aid to verifying their type status. We present our measurements in brackets.

ACKNOWLEDGMENTS.—D.G. Smith (NMNH) offered particularly valuable discussion and advice during the course of our study. E.B. Böhlke (ANSP), D. Catania and W.N. Eschmeyer (CAS), K. Hartel (MCZ), J. Nielsen (ZMUC), and J.T. Williams (NMNH) responded to queries concerning types or provided useful discussion. K. Murphy (NMNH) provided much collection maintenance and cataloging help. B.R. Kirby, Smithsonian Archives, assisted in the location of relevant old correspondence. Prepublication drafts of the manuscript were critically reviewed by W.N. Eschmeyer and D.G. Smith. D.M. Tyler (Smithsonian Institution Press) edited the manuscript. We express our appreciation to all these individuals.

## Combined Alphabetical Listing of All Included Species and Subspecies with Family Allocations

(names given as originally published)

*Opaeophacus acrogeneius*, Zoarcidae
*Derepodichthys alepidotus*, Zoarcidae
*Lyconectes aleutensis*, Stichaeidae
*Anoplarchus archolepis*, see *Anoplarchus purpurescens archolepis*
*Lycodapus attenuatus*, Zoarcidae
*Alectridium aurantiacum*, Stichaeidae
*Abryois azumae*, Stichaeidae
*Lyconema barbatum*, Zoarcidae
*Alectrias benjamini*, Stichaeidae
*Gymnelopsis brevifenestratus*, Zoarcidae
*Lycodes brevipes*, Zoarcidae
*Maynea brunnea*, Zoarcidae
*Lycodes brunneus*, Zoarcidae
*Lycenchelys bullisi*, Zoarcidae
*Bathymaster caeruleofasciatus*, Bathymasteridae
*Maynea californica*, Zoarcidae
*Lycodes camchaticus*, Zoarcidae
*Esselenia carli*, Stichaeidae
*Scytalina cerdale*, Scytalinidae
*Xiphister chirus*, Stichaeidae
*Lycodes coccineus*, Zoarcidae
*Lycodes concolor*, Zoarcidae
*Aprodon corteziana*, Zoarcidae
*Lycodopsis crassilabris*, Zoarcidae
*Gymnoclinus cristulatus*, Stichaeidae
*Lycodopsis crotalinus*, Zoarcidae
*Exechodontes daidaleus*, Zoarcidae
*Rhigophila dearborni*, Zoarcidae
*Lycodapus dermatinus*, Zoarcidae
*Lycodes diapterus*, Zoarcidae
*Lycodes digitatus*, Zoarcidae
*Nalbantichthys elongatus*, Zoarcidae
*Azuma emmnion*, Stichaeidae
*Lycodapus endemoscotus*, Zoarcidae
*Lycodapus extensus*, Zoarcidae
*Plectobranchus evides*, Stichaeidae
*Anarrhichthys felis*, Anarhichadidae
*Lycodapus fierasfer*, Zoarcidae
*Apodichthys flavidus*, Pholidae
*Lycichthys fortidens*, Anarhichadidae
*Lycodes frigidus*, Zoarcidae
*Apodichthys fucorum*, Pholidae
*Pholis gilli*, Pholidae
*Zoarces gillii*, Zoarcidae
*Ptilichthys goodei*, Ptilichthyidae
*Pholidapus grebnitskii*, Stichaeidae
*Lycodapus grossidens*, Zoarcidae
*Pachycara gymninium*, Zoarcidae
*Plagiogrammus hopkinsii*, Stichaeidae
*Bathymaster hypoplectus*, Bathymasteridae
*Apodichthys inornatus*, Pholidae
*Anoplarchus insignis*, Stichaeidae
*Bathymaster jordani*, Bathymasteridae
*Lycodes jordani*, Zoarcidae
*Esselenia laurae*, Stichaeidae
*Pachycara lepinium*, Zoarcidae
*Anarrhichas lepturus*, Anarhichadidae
*Lycodapus leptus*, Zoarcidae
*Bathymaster leurolepis*, Bathymasteridae
*Lumpenus longirostris*, Stichaeidae
*Lycodapus lycodon*, Zoarcidae
*Bryolophus lysimus*, Stichaeidae
*Lumpenus mackayi*, Stichaeidae
*Lycodapus mandibularis*, Zoarcidae
*Muraenoides maxillaris*, Pholidae
*Zoarchias microstomus*, Stichaeidae
*Bothrocara mollis*, Zoarcidae
*Lycenchelys monstrosa*, Zoarcidae
*Xiphidion mucosum*, Stichaeidae
*Alectrias mutsuensis*, Stichaeidae
*Krusensterniella notabilis*, Zoarcidae
*Gunnellus ornatus*, Pholidae
*Bryostemma otohime*, Stichaeidae
*Lycodapus pachysoma*, Zoarcidae
*Lycodes palearis*, Zoarcidae
*Melanostigma pammelas*, Zoarcidae
*Embryx parallelus*, Zoarcidae
*Lycodapus parviceps*, Zoarcidae
*Leurynnis paucidens*, Zoarcidae
*Lycichthys paucidens*, Anarhichadidae
*Gymnelus pauciporus*, Zoarcidae
*Lycodes paxillus*, Zoarcidae

*Lycenchelys poecilimon*, Zoarcidae
*Lycodapus poecilus*, Zoarcidae
*Lycodes porifer*, Zoarcidae
*Lycodapus psarostomatus*, Zoarcidae
*Anoplarchus purpurescens*, Stichaeidae
*Anoplarchus purpurescens archolepis*, Stichaeidae
*Maynea pusilla*, Zoarcidae
*Bothrocara remigera*, Zoarcidae
*Poroclinus rothrocki*, Stichaeidae
*Stichaeus ? rothrocki*, Stichaeidae
*Xiphister rupestris*, Stichaeidae
*Lycodes sagittarius*, Zoarcidae
*Ulvicola sanctae-rosae*, Pholidae
*Apodichthys sanguineus*, Pholidae
*Pholis schultzi*, Pholidae
*Lycenchelys spilotus*, Zoarcidae
*Neozoarces steindachneri*, Stichaeidae
*Centronotus subfrenatus*, Pholidae
*Pachycara sulaki*, Zoarcidae
*Eulophias tanneri*, Stichaeidae
*Bryostemma tarsodes*, Stichaeidae
*Opisthocentrus tenuis*, Stichaeidae
*Lycodes turneri*, Zoarcidae
*Zoarchias veneficus*, Stichaeidae
*Lycodes verrillii*, Zoarcidae
*Xiphistes versicolor*, Stichaeidae
*Apodichthys violaceus*, Stichaenidae
*Apodichthys virescens*, Pholidae
*Delolepis virgatus*, Stichaeidae
*Bothrocara zesta*, Zoarcidae
*Lycodes zoarchus*, Zoarcidae
*Opisthocentrus zonope*, Stichaeidae

# Annotated List of Type Specimens

## ANARHICHADIDAE

***Anarrhichthys felis*** Girard, 1858:125

Remarks: The species name, as *Anarrhichas felis*, originally appeared as a nomen nudum in Girard (1854:150). Girard (1858:125), who accepted Ayres's (1855a:31) new genus *Anarrhichthys*, was, according to current nomenclatural rules, in error in treating *Anarrhichthys ocellatus* Ayres (1855a:31) as a junior synonym of *Anarrhichas felis* Girard (1854), which must date from 1858. As Girard (1858) did not designate a holotype, all five of Girard's specimens, as well as both of Ayres's syntypes of *A. ocellatus* (from Bay of San Francisco), are syntypes of *A. felis*. The earthquake and subsequent fire of 1906 destroyed the CAS collections, and apparently none of Ayres's types of fishes survived (but see remarks below under USNM 511). Only two, of a possible maximum seven, syntypes of *A. felis* are known with certainty. Both are in pieces in the same jar, bearing the catalog number USNM 511. Under the circumstances, we refrain from designating a lectotype.

Syntypes

[USNM] 511 (3) [2], adults, San Francisco, California, 1856, provided and collected by W.O. Ayres, original [field ?] number 12, largest specimen 22 inches [= 559 mm] TL [both specimens are about same TL].

Remarks: The USNM catalog ledger entry indicated that three specimens were present initially. We are unaware of the disposition of the missing third specimen. Because Ayres was depositing specimens (including quite probably types[1]) at the Smithsonian and because he stated that one of his two syntypes was, coincidentally, 22 inches long, the other 52 inches, it is possible that one of the two specimens in USNM 511 is also the smaller of Ayres's two syntypes of *Anarrhichas ocellatus* (the 1856 collecting date, if accurate, would eliminate this possibility).

[USNM] 692 (1) [0], adult, bones, California, [collected 1853], provided and collected by Lt. W.P. Trowbridge, corresponding number 3380, [entered in USNM catalog 29 May 1858].

Remarks: Based on other entries, particularly for cyprinids, in Girard (1858), the corresponding number appears to refer to a number assigned to dry bony parts (pharyngeal teeth in the case of the cyprinids) kept separately from the alcoholically preserved specimen. We have found no other listing of the corresponding number 3380.

[USNM] 693 (1) [0], adult, bones, Monterey, California, [collected 1853], provided and collected by Lt. W.P. Trowbridge, corresponding number 3381, [entered in USNM catalog 29 May 1858].

Remarks: See under USNM 692. We have found no other listing for corresponding number 3381.

[1]In a letter to Spencer F. Baird dated 16 July 1855, San Francisco, Ayres wrote, "I intend to forward presently to the Smithsonian Institution, a suite of specimens, containing among others those which I have described." The letter is filed in the Smithsonian Institution Archives.

***Lycichthys fortidens*** Gill, 1911:166

Type [Holotype] [LOST]

USNM 21845, Banquereau, 300 fathoms [= ~549 m], Gloucester fishing vessel *Marion*, [18 September 1878].

Remarks: Gill (1911:166) indicated that Goode and Bean's (1895:301) "*Anarrhichas latifrons*, Steenstrup and Hallgrimsson" was the same as his new species, but Gill was primarily referring to Goode and Bean's description of USNM 21845 and the accompanying illustration (Goode and Bean, 1895, pl. 77: fig. 269, which they (p. 17) indicated was based on USNM 21373; see remarks under paratype below). Goode and Bean gave a detailed description of USNM 21845, which they indicated had an "extreme length" of 1108 mm and a length to middle caudal rays of 1048 mm. An old entry in the catalog register indicates that USNM 21845 was a skin. A survey of USNM types made during 1980 did not uncover the presence of the holotype, and our search was equally unsuccessful.

[Paratype] [LOST]

USNM 21373 [21873] (1) [0].

Remarks: Gill (1911:166), who clearly did not check the catalog register for the correct number, noted that this specimen was made into a cast and appeared not to have been preserved. It is probable that the cast is the one of a wolffish that was transferred to the Florida State Museum in 1990. Goode and Bean (1895:302) stated that they had received many specimens from the halibut schooners and that the *Albatross* had obtained the species at station 2429. Gill (1911:166) noted that none of these specimens, which might be considered paratypes, appeared to have been preserved.

***Anarrhichas lepturus*** T.H. Bean, 1879a:212

[Syntypes (2)]

[Lectotype]

USNM 21509, 600 mm extreme length [~582 mm TL], 555 mm to origin of middle caudal rays [~545 mm SL], St. Michael's, Alaska, Lucien M. Turner, 1876 [1877], [original number 220].

Remarks: The two syntypes were in the same jar bearing a neck label with two catalog numbers, 21509 and 21510. We placed the specimens in separate jars and herein designate the larger, USNM 21509, in better condition, lectotype. The date of collection, 1877, given in the catalog register differs from that given by Bean.

[Paralectotype (1)]

USNM 21510, 495 mm extreme length [~476 mm TL], 455 mm to origin of middle caudal rays [~432 mm SL], St. Michael's, Alaska, Lucien M. Turner, [24 June] 1876, [original no. 1147].

Remarks: The abdomen is open and the digestive tract is ruptured, with contents of crushed mollusks falling out.

***Lycichthys paucidens*** Gill, 1905:251

[Holotype]

USNM [23915], Banquereau near Nova Scotia, [200 fathoms = ~366 m, or 250 fathoms = ~457 m], [September 1879], [Capt. Geo. Oleson, schooner *Willie M. Stevens*], [originally in alcohol; skeletonized], [original number 476].

Remarks: Gill (1905:251) based his description on a single specimen in poor condition for which he provided inadequate information to allow for its recognition. Gill (1911:167–168) provided a catalog number for his holotype, illustrations of its upper and lower jaws, an apparently erroneous number (467) for its skull, and erroneous names (Philip Merchant, *Marion*) for the captain and fishing vessel that obtained the specimen. The erroneous names are those that appear for USNM 23916, the catalog entry just below that of USNM 23915. Number 467 was probably a slip for 476, which is the number assigned to collections made by Capt. Geo. Oleson and the schooner *Willie M. Stevens* (Anonymous, 1882:829; see also remarks section under *Simenchelys parasiticus* in D.G. Smith, 1994:38). The original handwriting in the catalog ledger for USNM 23915 indicates the name "*Anarrhichas*" with an original number of 476 and nature of object entered as "alc." A revised identification, *Lycichthys paucidens*, and remark, "skeletonized," were added later to the register for 23915, but there is no indication of the specimen's type status, nor that it had ever been recataloged. Number 476 is also indicated as the original number for USNM 23912, 23913, 24376, 24390, which relate to different species, but all refer to the same ship captain, Geo. Oleson. During our search of the collection for the holotype, we found metal tags stamped, "476" and "23915" in the skeleton box bearing the USNM catalog number 111084. The box contained a dried skull (lacking lower jaw) and left pectoral girdle and fin. The catalog register for 111084 indicated that 23915 had been recataloged on 18 January 1941, but gave no reason why. We also found a large jar bearing the catalog number 231755 indicated as the type of *Lycichthys paucidens*. The jar contained a dried vertebral column, lower jaw, and hyoid arches. USNM

231755 originally had the old bone catalog number 26505. The original entry for 26505 in the bone catalog indicated only the name *Lycichthys* and that the object was "vert." A later entry in the bone catalog for 26505 was made during 1933 by George S. Myers. He added the species name, *paucidens*, and other data taken from the type description, and the remark, "This is the figured jaw found without any data." We agree with Myers's remarks (the peculiar arrangement of the lower-jaw teeth is clearly recognizable in Gill's, 1911, fig. 10). Considering the agreement of the coloring and preservation of the skeletal parts in USNM 111084 and 231755, the fact that the parts conform and are of the correct size relative to each other, and that, with one exception, the parts missing in one lot are found in the other (the right pectoral fin and girdle are missing altogether), we have combined all the parts and reassigned them to the original catalog number, USNM 23915, as reported by Gill (1911:168). The USNM catalog register gives the depth of capture as 200 fms, whereas Anonymous (1882:829) gives the depth as 250 fms.

BATHYMASTERIDAE

***Bathymaster caeruleofasciatus*** Gilbert and Burke, 1912:84
Type [Holotype]
[USNM 74391], 235 mm, [233 mm TL, 206 mm SL], Agattu Island, Aleutian chain, secured with hand line, summer, 1906, steamer *Albatross*, [acc. no. 54484].
Remarks: Tags tied to the specimen read, "Type" and "Drawn." The label in the jar reads, in part, "June 8...1906."
[Paratypes]
Remarks: The description indicates variation in characters and a remark, after mention of the type, that "others were obtained at Agattu, Medni, and Bering Islands, and at the following [*Albatross*] stations on Petrel Bank: 4777 ... 4778." The number of these specimens is not given. Data associated with the following lots agrees with their recognition here as paratypes. Other paratypes probably exist, e.g., CAS SU 22242 (6) (McPhail, 1965:1293).
[USNM 70796 (3), acc. no. 53267].
[USNM 70865 (1), acc. no. 53267].
[USNM 70915 (2). acc. no. 53267].
[USNM 70968 (14), acc. no. 53267].

***Bathymaster hypoplectus*** Gilbert, 1890:97
[Holotype]
[USNM 44380], about 8 inches [= 203 mm] [142 mm SL; 152 ± 10 mm TL], *Albatross* station 2944, [34°00′00″N, 119°28′30″W, off coast of California and outlying islands south of Point Conception, 6 Feb], 1889, in 30 fathoms [= 54.9 m].
Remarks: The description is based on a single specimen. Gilbert's length appears to be in error or this is not the holotype. Gilbert (in litt. 20 September 1912, to B.A. Bean) again indicated that the holotype was "about 8 inches long." Bean (in litt. 26 September 1912, to C.H. Gilbert) wrote that the holotype was $5^5/_8$ inches [= ~143 mm] SL and mentioned that "the specimen had been partially dried at one time or else shrunken by too strong alcohol." Our impression is that the specimen never approximated 203 mm SL or TL. [Letters filed in Smithsonian Archives, group 213, box 7, folder 9.]

***Bathymaster jordani*** Gilbert, 1889:554
[Syntypes] (3)
[Lectotype]
USNM 26641[153 mm SL, Seattle, Washington Territory, taken from stomach of chimaera no. USNM 26631, received from Col. W.E. Prosser].
Remarks: We herein designate this specimen lectotype, as first suggested by Kiernan (1990:111).
[Paralectotypes]
USNM 27265 [(1), ~160 mm SL, Puget's Sound, D.S. Jordan].
Remarks: Flesh is removed from the left side of the body.
USNM 32404 [(1), Wrangel, Alaska, coll. M.H. Jones, July 1882, acc. no. 12163].
Remarks: The specimen is badly decomposed.

***Bathymaster leurolepis*** McPhail, 1965:1294
Paratypes
[USNM 202533 (3), acc. no. 274614, formerly part of] UW 17201.

PHOLIDAE

***Apodichthys flavidus*** Girard, 1854:150
[Holotype]
USNM [494], between 11 and 12 inches long [= 279–305 mm], Presidio, Bay of San Francisco, California, W.P. Trowbridge.
Remarks: The specimen is somewhat distorted, and the caudal-fin rays are broken off and contained in a vial. A rough measure of the SL is about 270 mm; the caudal-fin rays measure about 16 mm (or about 286 mm TL).

***Apodichthys fucorum*** Jordan and Gilbert, 1880a:139
"Numerous typical examples" [Syntypes]
Remarks: According to the catalog register, USNM

26994 originally contained over 60 specimens, of which some were sent to ZMUC. The 60 may not have included two specimens that were in Jordan's collection at Butler University. These two specimens were sent to USNM in 1993 [acc. no. 402185] and were added to USNM 26994. E.B. Böhlke (1984:140) reported the presence of a paratype [sic] of *Apodichthys fucorum* as ANSP 10501, formerly part of USFC [sic] 26994. E.B. Böhlke informed us (pers. comm., 24 March 1995) that she obtained her information from a note written by H.W. Fowler.

[Lectotype]

[USNM 26994, 96.4 mm SL], Monterey, California.

Remarks: The description appears to have been based on a single specimen 4.35 inches [= 110 mm] in "extreme length" and 4.10 inches [= 104 mm] to base of caudal fin, although no single specimen was designated type. Most of the 38 specimens we found in USNM 26994 were segregated in groups, each group tightly tied with string and each with a USNM metal catalog number tag. We removed all of the strings and tags, but impressions of the strings marred most of the specimens. We selected a specimen in relatively good condition, which we designate herein as lectotype. The lectotype retains the original catalog number.

[Paralectotypes]

[USNM 335151 (37)]. Formerly part of USNM 26994. See remarks under lectotype above.

***Pholis gilli*** Evermann and Goldsborough, 1907:337

Type [Holotype]

USNM 57826, 6.75 inches long [= 171 mm; ~167 mm SL, ~178 mm TL], Bering Sea, 1902, sent in by Mrs. E.W. Clark, [acc. no. 47988].

Remarks: A paper tag bearing the printed number 246 is tied to the holotype.

***Apodichthys inornatus*** Gill, 1862:279 [footnote]

[Holotype] [LOST]

USNM, 13 inches [= ~330 mm] long, obtained by naturalist of the Northwestern Boundary Commission.

Remarks: There is no indication that anyone has seen the holotype since its original description. We were unable to locate it in a search of the collection and believe it to be lost.

***Muraenoides maxillaris*** T.H. Bean, 1881:147

Type [Holotype]

USNM 23999, Saint Paul Island, Bering Sea, H.W. Elliott, 1872.

Remarks: The holotype was not found during inventory in 1980; an old entry in the catalog register book indicated that the specimen was destroyed.

***Gunnellus ornatus*** Girard, 1854:149

[Holotype]

USNM [490], [111 mm SL], Presidio on the Bay of San Francisco, California, W.P. Trowbridge.

Remarks: Although the description appears to be based on a single specimen, the number of specimens, or sizes, were not provided. Girard (1858:117) listed only one specimen, USNM 490, that bears associated data agreeing with that given in the original description. The specimen in USNM 490 agrees well with the description.

***Ulvicola sanctae-rosae*** [***sanctaerosae***] Gilbert and Starks in Gilbert, 1897:455

Type [Holotype]

USNM 47579, 4 1/2 inches [= 114 mm; 110 mm TL, 103 mm SL], rock pool at Santa Rosa Island, California, 6 January 1889, *Albatross*, [ acc. no. 30301].

***Apodichthys sanguineus*** Gill, 1862:279

[Syntype] [LOST]

USNM [4480?], adult, California, [between 1860–1862], S. Hubbard.

Remarks: The USNM catalog register has an entry for USNM 4480 listed as *Apodichthys sanguineus* and collected by Hubbard among a series of specimens also collected by Hubbard, including other species and types listed by Gill (1862). We were unable to find this lot in a search of the collection, and there is no indication that anyone has seen the holotype since its original description. We therefore believe it to be lost. Gill (1862:280) mentioned that there was a second, smaller specimen [syntype] "in the collection formed by the Northwestern Boundary Commission." We are unaware of the present disposition of this specimen, which is not present in the USNM collection.

***Pholis schultzi*** Schultz, 1931:45

[Type material] [Syntypes]

Remarks: The complex nomenclatural history of this species was treated by Schultz and Hubbs (1961), which is essentially correct except for attributing the species name to Hubbs, and indicating, erroneously, that Hubbs was not indicated as responsible for the name in Schultz (1931). Schultz (1931:48) gave the name as *Pholis schultzi* Hubbs. Even so, it appears, unfortunately, according to the wording of ICZN Article 50(a) that Schultz must be considered author of the name, a fact first noted by Robins et al. (1980:53, 88). No type material was mentioned in Schultz (1931). The first mention of types, including designation of a lectotype, was given in Schultz and Hubbs (1961). We accept their statement that Schultz's (1931) description was based on only three

lots of specimens, USNM 104366, 104367, 117582, comprising 3, 6, and 30 specimens. Some of the specimens from these lots were apparently deposited at MCZ subsequently.

[Lectotype]

[USNM 195955, 81 mm SL, Cape Johnson, N of Mora, Washington, L.P. Schultz, 1 June 1931, originally cataloged as part of UW 3033 and then as USNM 104366, acc. no. 142501.]

[Paralectotypes]

[USNM 104366 (28)], same data as lectotype.

Remarks: The lot originally contained 30 specimens. One specimen is now cataloged as MCZ 35974, thus accounting for all the specimens in this lot.

[USNM 104367 (4), acc. no. 142501].

Remarks: The lot originally contained six specimens. An undated entry in the computer catalog register indicates that only five specimens were present. Two specimens from this lot are cataloged as MCZ 35939, but according to K. Hartel (in litt. 22 March 1995), this lot is no longer present in the MCZ collection.

[USNM 117582 (3), acc. no. 156279], all specimens accounted for.

***Centronotus subfrenatus*** Gill, 1859:146

[Syntypes] (several specimens) [4]

Remarks: The types of Gill's species have not been reported since the original description, and we cannot demonstrate unequivocally that the specimens listed below are his types. We believe, however, that circumstantial evidence strongly favors their acceptance as his types. Based on other USNM catalog entries on the same page, these specimens were cataloged into the collections during 1869 with the name *Centronotus bifrenatus*. This name has never been published [and is not to be considered as such here] but is close enough to Gill's name to arouse suspicion. Gill mentioned that he had several specimens but that only one was in good condition. Of the four specimens in this putative syntypic lot, only one, the largest (~150 mm SL), is in good condition, and it agrees extremely well with Gill's description, including details of the color pattern, and particularly that of the bands and spots on the head. We herein designate this specimen lectotype. Gill reported that the dorsal fin comprised 76–79 spines, and we count 79 in the lectotype and 78, 79, and 81 in the three paralectotypes. Yatsu (1981:176) considered Gill's species to be a junior synonym of *Enedrias nebulosa* (Temminck and Schlegel) and gave the range of dorsal-fin spines as 76–83.

[Lectotype]

[USNM 5693], collected by J. Morrow, during Commodore Perry's expedition to Japan [1852–1854].

[Paralectotypes]

[USNM 336601] [3].

***Apodichthys virescens*** Ayres, 1855b:55

[Syntypes?]

[Lectotype?]

[USNM 496, 260 mm SL], Bay of San Francisco, California, collected by W.O. Ayres.

Remarks: An old handwritten indication that these specimens are "types" is entered in the USNM catalog register. There is no date of collection nor date received entered in the catalog register. In most instances we know of, specimens of various Ayres species sent to USNM are reported to have been collected in 1856 (see also Girard, 1858, who lists many Ayres specimens with 1856 collection dates). If such is the case for USNM 496, the specimens cannot be types. On the other hand, there is an indication that Ayres deposited type specimens at USNM (see footnote referenced above in *Anarrhichthys felis* (Anarhichadidae)). Ayres's description appears to be based on a single specimen; however, his (1855b:56) mention that the largest specimens he had seen were 9 1/2 inches [= 241 mm; SL or TL not specified] indicates that he may have had more than one specimen before him. The two specimens that we consider to be syntypes are about 257 mm SL, somewhat longer than the size reported by Ayres. Both specimens agree reasonably well with the description, except for body color pattern. Ayres reported markings on the head but otherwise indicated that the species is uniformly green. The syntypes exhibit numerous dark bands dorsally on the body, with some band continuing into the dorsal fin and others continuing into the anal fin. In spite of the discrepancies, it is possible that these specimens are Ayres's syntypes. We herein designate the specimen in better condition as lectotype. The lectotype retains the original catalog number.

[Paralectotype]

[USNM 336443 (1)], removed from USNM 496.

## PTILICHTHYIDAE

***Ptilichthys goodei*** T.H. Bean, 1881:157

Type [Holotype]

USNM 26619, length 160 mm, entrance to Port Levasheff, Unalashka [= Unalaska], 10 fathoms [= ~110 m], S. Bailey, 28 July 1880, collector's number (1590).

Remarks: The specimen is in pieces and in poor condition. The catalog register also indicates an

original number, 3511, in the same column and space with (1590).

[Paratype]

Remarks: Bean (1881:157) indicated that he had a second specimen, 302 mm long, from Unalaska, that was on loan from the Alaska Commercial Company of San Francisco. The disposition of the paratype is unknown.

SCYTALINIDAE

***Scytalina cerdale*** Jordan and Gilbert, 1880b:267

[Syntypes (2)]

[Lectotype]

[USNM 27400], extreme length 5.8 inches [= ~147 mm] [~140 mm TL], length to base of middle caudal rays 5.5 inches [= ~140 mm; ~133 mm SL], Waadda Island, in Neeah [sic] Bay, near Cape Flattery, at the entrance to the Straits of Juan de Fuca, [D.S. Jordan, 1880].

Remarks: The description was based on two specimens, and the catalog ledger indicates that two specimens were originally present in USNM 27400. Both specimens were stated to be "about 5 1/2 inches," although a table of measurements indicates that the lengths for specimen number 226 are those given above after the catalog number. Only one specimen was found in the jar labeled 27400. It had two metal tags tied to its body, one imprinted with the catalog number, the other with 226. We designate this specimen lectotype. The locality data for the syntypes can be found on page 265 of Jordan and Gilbert (1880b).

[Paralectotype]

[USNM 27400] (1) [0], disposition unknown; probably lost.

STICHAEIDAE

***Lyconectes aleutensis*** Gilbert (1895:452)

[Holotype]

[USNM 48620], 180 mm long, [161 mm SL, 178 mm TL], north of Unalaska [= Unalaska] Island, [53°59′N, 166°25′09″W], *Albatross* station 3312, 45 fathoms [= 82.3 m], [15 August 1890], [acc. no. 30477].

Remarks: The caudal-fin rays, broken off as a group, are in a vial in the jar with the holotype. An original *Albatross* station label with the word "Type" inscribed on it is also in the jar.

***Anoplarchus archolepis*** Hubbs, see under *Anoplarchus purpurescens archolepis*

***Alectridium aurantiacum*** Gilbert and Burke, 1912:87

Type [Holotype]

[USNM 74393], 83 mm long, [81.1 mm TL, 75.2 mm SL], Nikolski [Bay], Bering Island, [15 June] 1906, Steamer *Albatross*, [acc. no. 54484].

Remarks: The tag with the specimen reads, "DRAWN."

***Abryois azumae*** Jordan and Snyder, 1902a:486

Cotype [Paratypes]

USNM 50294 [7].

Remarks: Jordan and Snyder (1902a:487) mentioned a "type," at Stanford University [CAS-]SU 7078, and a "cotype," USNM 50294. In neither case did they specify a locality or the number of specimens. Following these two catalog numbers, they gave a table listing fin-ray counts for six specimens, without associated catalog numbers or localities. Following the table, they stated, "We have many specimens from Mororan [= Muroran] and Otaru. ..." J.E. Böhlke (1953:99) indicated the presence of the type, SU 7078, and six paratypes, SU 7097, all with the exact same data, the locality being Muroran, Japan. The six specimens in CAS-SU 7097 cannot be considered as paratypes because they were not among the specimens specifically designated as type material. A different problem exists with USNM 50294, which contains seven specimens, also labeled as having been obtained at Muroran. We assume that Jordan and Snyder were referring to a cotype lot of specimens rather than to a single specimen. We do not know where the specimens obtained at Otaru were deposited, but as they are assigned neither of the two catalog numbers mentioned as type material by Jordan and Snyder, they have no type status.

***Alectrias benjamini*** Jordan and Snyder, 1902a:475

Cotype [Paratypes]

USNM 50295 [33].

Remarks: Jordan and Snyder (1902a:477) mentioned that they had many specimens, but they only designated a type [holotype], SU 7074, and one "co-type" [paratypic] lot, USNM 50295. All other specimens available to Jordan and Snyder at the time of description must, therefore, be considered "other material" according to the ICZN. J.E. Böhlke (1953:100) erroneously indicated the presence of paratypes at SU. Some of the latter were apparently divided and distributed to other museums. At least one such lot went to MCZ, from where part or all was transferred to USNM. Similarly, E.B. Böhlke (1984:140) erroneously indicated the presence of paratypes, which originated from SU and BPBM, at ANSP.

***Esselenia carli*** Follett and Anderson, 1990:149
Paratypes
USNM 296208 (2), [acc. no. 380452].

***Xiphister chirus*** Jordan and Gilbert, 1880a:135
[Syntypes] (about 12)
Remarks: We have located only four putative syntypes of the "about 12" indicated by Jordan and Gilbert (1880a:136). All four were originally assigned the catalog number USNM 27175. During May 1966, one of the four specimens, clearly not conspecific with the other three, was identified as *Xiphister rupestris* and was recataloged as USNM 200384. The three conspecific specimens conform with the current concept of *Xiphister chirus*, now placed in the genus *Phytichthys*, as considered by Hart (1973:338) and Eschmeyer and Herald (1983:251, pl. 40). This placement is in agreement with the original description, particularly in that the specimens lack pelvic fins and have multiple lateral lines, two anal-fin spines (not mentioned in original description), dorsal-fin origin just posterior to level of tip of appressed pectoral fin, pectoral fins as large or larger than orbital diameter, and, in the largest specimen, which we designate herein as lectotype, indications of numerous dark spots on the head, body, and dorsal fin. The two conspecific paralectotypes were recataloged as USNM 336453. The fourth syntype, USNM 200384, is clearly identifiable as *Xiphister atropurpureus* (Kittlitz).
[Lectotype]
[USNM 27175, 101 mm SL, 106 mm TL], Point of Los Pinos [= Pt. Piños, Pacific Grove], near Monterey, California, [1880, D.S. Jordan].
Remarks: The lectotype, which is much larger than the three paralectotypes, is almost broken in two at the posterior end of the abdomen. The lectotype had a metal tag bearing the number 95 tied tightly to its body. Jordan and Gilbert (1880a:138) presented a table with characters for the three species they recognized in the genus *Xiphister*. In the table they provided information on two specimens each for *X. mucosus* and *X. rupestris*, but for only one specimen of *X. chirus*, for which they gave 4.08 inches ( = 104 mm) TL and 3.90 inches ( = 99.1 mm) SL, which measurements are close to those we obtained for the lectotype.
[Paralectotypes]
[USNM 200384 (1)], formerly part of USNM 27175, metal tag reading 202 was tied to body.
[USNM 336453 (2)], formerly part of USNM 27175, metal tag reading 95, tied to body of one specimen, free metal tag reading 96 loose in jar labeled USNM 27175 transferred with specimens to this lot.

***Gymnoclinus cristulatus*** Gilbert and Burke, 1912:86
Type [Holotype]
USNM 74392, 37 mm long, [36.4 mm TL, 32.1 mm SL], Nikolski, Bering Island, Summer, 1906, Steamer *Albatross*, [acc. no. 54484].
Remarks: J.E. Böhlke (1953:100) indicated, erroneously, the existence of a paratype (CAS-SU 22358). The original description indicated no variation in characters and the existence only of a "type." Although the description also indicated that the species was common in tidepools, it cannot be assumed the description was based on more than one specimen. Printed paper tags with USNM 74392 read, "TYPE" and "DRAWN"; a typewritten tag reads, "RADIOGRAPH IN FISH DIVISION FILES."

***Azuma emmnion*** Jordan and Snyder, 1902a:463
Cotype [Paratype]
USNM 50280 (1).
Remarks: Jordan and Snyder (1902a:464) described the species from the holotype, CAS SU 7137, from Hakodate, and stated, "The cotype in the National Museum is numbered 50280. Other specimens measure 400 mm." Locality data were given only as "collected at Same, Hakodate and Miyako. ..." Following the latter statement, they provided a table of fin-ray counts for five specimens from Same (1), Hakodate (3), and Miyako (1). A printed label in the jar containing the catalog number USNM 50280, reads, "Moroan, Hakodate, Japan. Jordan and Snyder, Collectors." The USNM catalog indicates the specimen was cataloged 25 March 1902 with the name *Azuma japonica* ( = *Chirolophis japonicus* Herzenstein), which is an older name for Jordan and Snyder's species. (The publication date for Jordan and Snyder, 1902a, is given as 26 September 1902 in the table of contents to volume 25 of the *Proceedings of United States National Museum*.) We are unable to explain the locality contradiction for the USNM paratype. J.E. Böhlke (1953:100) indicated, erroneously, that SU 7107 (1), with identical data as the holotype, and SU 7118 (1), from Miyako, were paratypes. As the latter two specimens were not specifically included among the type series, they cannot be paratypes.

***Plectobranchus evides*** Gilbert, 1890:102
[Holotype]
[USNM 43093], 4 inches long [= 102 mm], *Albatross* station 3064, [46°03′15″N, 124°09′00″W], 46 fathoms [= 84 m], [13 June], 1889, [original no. FC 5564], [acc. no. 23787].

Remarks: The specimen is in pieces and in very poor condition. There are two metal tags in the jar; one reads, "DRN," and the other, "198."

***Pholidapus grebnitskii*** T.H. Bean and B.A. Bean, 1896:390
[Syntypes] (2), USNM 47564.
[Lectotype]
USNM 47564, 141 mm [TL], 126 mm to base of caudal [fin], [120 mm SL], [Vulcano Bay, Port Mororan = Volcano Bay off Muroran], Yesso, Japan, N. Grebnitski, [July], 1894, [acc. no. 30232].
Remarks: The species was described from two specimens, which were recorded as having identical lengths. We herein designate the specimen in better condition as lectotype. The lectotype retains the original catalog number.
[Paralectotype]
USNM [335143], same collection data as holotype, [119 mm SL].

***Plagiogrammus hopkinsii*** T.H. Bean, 1894:700
Type [Holotype]
USNM 44721, 6 inches long [= 152 mm; 149 mm TL, 132 mm SL], Monterey, California, 22 June 1893, U.S. Fish Commission.

***Anoplarchus insignis*** Gilbert and Burke, 1912:88
Type [Holotype]
[USNM 74394], 102 mm long, Attu Island, Aleutian Chain, summer [10–11 June], 1906, USF Steamer *Albatross*, [acc. no. 54484].
Remarks: The specimen is in a test tube with tied cloth covering the opening, possibly as prepared by Gilbert and Burke. Paper tags tied to the specimen read, "TYPE" and "DRAWN." A separate paper label with the scientific name and the word "Type" is in the jar, as is an original printed *Albatross* label with handwritten locality data. The specimen was not removed from the test tube for remeasuring but appears to be about 100 mm TL.
[Paratypes]
[USNM 70971 (11)], [acc. no. 53267].
Remarks: Gilbert and Burke (1912:88) did not designate cotypes but mentioned that they had 17 specimens besides the type. J.E. Böhlke (1953:100) indicated that SU 22362 contained six paratypes, thus accounting for all the paratypes.

***Esselenia laurae*** Follett and Anderson, 1990:153
Paratype
USNM 296209 (1), [acc. no. 380452].

***Lumpenus longirostris*** Evermann and Goldsborough, 1907:340
Type [Holotype]
USNM 57827, 9.3 inches, [227 mm TL, 212 mm SL], *Albatross* station 4255, Alaska, [Taiya Inlet], Lynn Canal, [Indian Rock], 16 July 1903, [acc. no. 47988].
Remarks: A paper tag reading, "131" is tied to the specimen.
Cotypes [Paratypes]
Remarks: E.B. Böhlke (1984:158) reported that a paratype from *Albatross* station 4252 is deposited at ANSP.
USNM 61159 [1], *Albatross* station 4251, [acc. no. 47988].
USNM 61160 [30], *Albatross* station 4254, [acc. no. 47988].
Remarks: An old label in the jar reads, "32 cotypes," and the number of specimens originally was recorded as 32 in the catalog ledger. Nineteen specimens have been sequentially numbered, and printed tags tied through the lower jaws are numbered 51–57, 59–70. Evermann and Goldsborough (1907:341) presented a table of measurements of 19 specimens from station 4254, numbered sequentially 52–70.
USNM 61161 [10], *Albatross* station 4255, [acc. no. 47988].
USNM 61163 [3], *Albatross* station 4256, [acc. no. 47988].
USNM 126871 [11], *Albatross* station 4255, [acc. no. 163614].
Remarks: The *Albatross* label in the jar states "9 co-types," and the number of specimens was originally recorded as nine in the USNM catalog ledger. We are unable to explain the discrepancy in the number (2 extra) of specimens.

***Bryolophus lysimus*** Jordan and Snyder, 1902b:617
Type [Holotype]
USNM 50571, 100 mm long, [~99 mm TL, 87.6 mm SL], near Unalaska, *Albatross* station 3213 [54°10′00″N, 162°57′30″W, 75 m, 21 May 1890].
Remarks: The specimen is deteriorating. A metal tag in the jar states, "DRAWN." A paper tag states, "Radiograph in Fish Division Files."

***Lumpenus mackayi*** Gilbert, 1895:450
[Syntype, Lectotype]
[USNM 48633, ~237 mm SL, ~262 mm TL, in poor condition], summer [3 June], 1890, *Albatross*, [acc. no. 30477].
Remarks: The original *Albatross* label with the specimen reads, "Leptoblennius makayi [sic] type (figured) Nushagak R. Alaska." The description appears to be based mostly on a single specimen, and only a single length, 290 mm [TL?], is provided, which might be interpreted as indicating only the length of the longest specimen. The illustration (plate 32, top figure) accompanying

the description depicts a specimen approximately 275 mm TL (based on scale with figure), which we believe is reasonably close to that of the specimen in USNM 48633. At the close of the description, the remark is made, "Several specimens were seined near the mouth of the Nushagak River," indicating more than one specimen was available, and all can be considered as syntypes. J.E. Böhlke (1953:100) indicated the presence of five syntypes in the Stanford collection. We herein designate USNM 48633 lectotype of *Lumpenus mackayi* in accordance with our interpretation of Gilbert's apparent intention as indicated by the labels with the specimen.

***Zoarchias microstomus*** Kimura and Jiang, 1995:115
Paratype
USNM 331200 (1), [acc. no. 411066].

***Xiphidion mucosum*** Girard, 1858:119
[Syntypes] (17) [13]
Remarks: Girard mentioned that he had 17 specimens, ranging in size from 2 to 7 inches [50.8–178 mm] TL, and that "none were in a perfect state of preservation." The USNM catalog register indicates that 17 specimens were present originally in the syntypic series, USNM 493, but we found only 13, all in very poor condition. All lack caudal-fin rays and some are in pieces or otherwise deteriorating. Two other specimens out of USNM 493 were apparently transferred to MCZ.
[Lectotype]
USNM 493, [~160 mm SL], S. Faralones [= Farallon Island], California, 1856, W.P. Trowbridge.
Remarks: We herein designate one of the 13 specimens in USNM 493 lectotype of the species. The lectotype retains the original catalog number.
[Paralectotypes]
USNM [336448 (12)].
Remarks: These specimens were formerly part of USNM 493. MCZ 35943 (1) and 35992 (1) are both also indicated (K. Hartel, in litt., March 1995) as formerly part of USNM 493, thus accounting for 15 of the 17 original syntypes.

***Alectrias mutsuensis*** Shiogaki, 1985:307
Paratypes
ACAP 5453 and 5457 [USNM 278052 (2)], [acc. no. 369299].

***Bryostemma otohime*** Jordan and Snyder, 1902a:466
Cotypes [Paratypes]
USNM 50302 [5], [acc. no. 39095].
Remarks: The catalog register entry indicates that six specimens should be present.

***Anoplarchus purpurescens*** Gill, 1861:262
[Syntypes]
[USNM 9409] (1)[?] [2], 100 [mm?] TL, waters of Washington Territory, Dr. Kennerly.
Remarks: Gill did not indicate the number of specimens on which he based his description. The description appears to be based on a single specimen, as no variation is reported for any character. USNM 9409, containing the badly deteriorated remains (in pieces) of two specimens of possibly closely similar size, is indicated in the USNM catalog register as "Types" of this species; however, who took this action and when is unknown. Considering the condition of the specimens, we refrain from designating a lectotype for the species.

***Anoplarchus purpurescens archolepis*** Hubbs, 1927:375
Paratypes
Remarks: Hubbs (1927:375) indicated only that there were "numerous paratypes, deposited in several institutions," without specifying catalog numbers or numbers of specimens.
[USNM 75457 (4)], [acc. no. 56467].
[USNM 117501 (2)], [acc. no. 156279]; jar contains note written by C.L. Hubbs stating, "2 paratypes."

***Poroclinus rothrocki*** T.H. Bean, 1890:40
[Holotype]
[USNM 45366], 7 inches long [= 178 mm; 175 mm TL, 155 mm SL], *Albatross* station 2852, 55°15′N, 159°37′W, between Nagai and Big Koniushi Islands, 58 fathoms [= 106 m], 4 August 1888.
Remarks: A metal tag tied to the specimen reads, "DRN."

***Stichaeus*** ? ***rothrocki*** T.H. Bean, 1881:146
Remarks: Following the description, Bean remarked (p. 146), "If, as I suspect, the developed form of the species shows but one lateral line ... this character ... will entitle the species to rank as the representative of a distinct genus for which the name *Notogrammus* is here proposed." Because *Notogrammus* dates from the same publication as the species *rothrocki,* some authors have ignored the original name combination, *Stichaeus rothrocki,* and reported the original description as *Notogrammus rothrocki.* Although Bean questioned the generic allocation of the species at the beginning of the description, we consider the original name of Bean's new species to be *Stichaeus rothrocki.*
Types [Syntypes] (17)
[Lectotype]
USNM 27573, [30.0 mm SL], Cape Lisburne, Alaska, Arctic Ocean, summer [18 August], 1880, [T.H. Bean, collector's number (1679)].
Remarks: The catalog indicates that USNM 27573 originally contained eight specimens, but a note in the jar written by L.P. Schultz, dated IX-18-1951, indicates there were only five specimens in

the jar at that time. Schultz recataloged four of the specimens as USNM 112750 because he intended to designate the remaining specimen in USNM 27573 as lectotype. We have found no published indication that a lectotype for *Stichaeus rothrocki* has ever been designated, although Walters (1955:307) indicated that he had examined the specimens in USNM 112750, which he indicated were "paratypes" of *Notogrammus rothrocki*. In order to establish a lectotype, and because we may have overlooked a designation of the specimen in USNM 27573 as lectotype, we herein designate it lectotype. Two of the three syntypes that Schultz implied were missing from the original eight specimens contained in USNM 27573 were transferred to MCZ at some early date. They are cataloged as MCZ 35919. The disposition of the third specimen is unknown to us.

[Paralectotypes]

USNM 27580 [8].

USNM 27565 [1]. Not found. A note in the USNM catalog ledger indicates "Destroyed."

[USNM 112750] [4], originally part of USNM 27573. See remarks section under lectotype above.

***Xiphister rupestris*** Jordan and Gilbert, 1880a:137

[Syntypes] (upwards of a hundred)

Remarks: Jordan and Gilbert (1880a) did not provide information adequate for unequivocal recognition of the number of specimens in their type series, and they did not indicate whether they included only specimens collected by one or both of them, or by others. The original description indicates that the authors had procured "upwards of a hundred specimens," and that it was extremely abundant on the Point of Pines [= Pt. Piños, Pacific Grove], Monterey. The USNM catalog register gives the number of specimens at the time of cataloging of syntypic lot USNM 27001 as 53. Subsequent remarks indicate that there is one specimen out of this lot at UMMZ and that some specimens were sent to UZM Copenhagen, 1881–1887. K. Hartel informs us (in litt., 17 March 1995) that there is a specimen out of USNM 27001 cataloged as MCZ 26922. Furthermore, E.B. Böhlke (1984:158) reported the presence of two specimens from USFC [sic] 27001 as ANSP 9737–9738. Her indication, however, that ANSP 9739, one specimen out of USFC [sic, actually, USNM] 27327, from Cape Flattery, Washington, is a syntype is in error. The title of Jordan and Gilbert's (1880a) paper indicates that the new species were being described from Monterey, California, and the original description mentions only this locality. We conclude therefrom that specimens from Cape Flattery, Washington, have no type status.

[Lectotype]

[USNM 27001], [~147 mm SL, ~152 mm TL], Monterey, California, [D.S. Jordan, 1880].

Remarks: Jordan and Gilbert presented (p. 138) detailed data on only two specimens, the smaller of which was 6.25 inches [= 159 mm] TL, and 6.10 inches [= 155 mm] SL, slightly larger than the specimen we herein designate lectotype, which agrees closely otherwise with the original description.

[?Paralectotypes]

[USNM 20343 (3)]. These specimens are indicated as having been collected by H. Hemphill at Monterey, California, in 1875. Given the collection date, they would have been available to Jordan and Gilbert, but it is unclear that these authors referenced Hemphill's specimens.

***Neozoarces steindachneri*** Jordan and Snyder, 1902a:479

Cotype [Paratype]

USNM 50277 [1].

Remarks: Jordan and Snyder (1902a:480) designated a type, SU 7075, and one cotype, USNM 50277, which contains only one specimen, but mentioned that they had a total of six specimens, five from Hakodate and one from Otaru. [CAS-]SU 7075 and USNM 50277 are both from Hakodate. USNM 50301, which contains the specimen from Otaru (and an *Albatross* label on which is written "Co-type"), and SU 7025, which contains three specimens from Hakodate, and which J.E. Böhlke (1953:99) indicated as paratypes along with the erroneous statement that this lot was referred to as 4025 in the original description, cannot, therefore, be paratypes.

***Eulophias tanneri*** H.M. Smith, 1902:94

Type [Holotype]

USNM 49798, 45 mm long, [41 mm TL], Head of Suruga Bay, Suruga Gulf, Japan, about 67 fathoms [= ~122.5 m], *Albatross* station 3715, 11 May 1900.

Remarks: The specimen is in pieces and in poor condition.

***Bryostemma tarsodes*** Jordan and Snyder, 1902b:614

Type [Holotype]

USNM 50570, 115 mm long, [>109 mm TL, 101 mm SL], *Albatross* station 3213, [54°10′00″N, 162°57′30″W, 75 m, 21 May 1890], near Unalaska, Alaska.

Remarks: The metal tag tied to the specimen reads, "DRAWN."

***Opisthocentrus tenuis*** T.H. Bean and B.A. Bean, 1897:463
Type [Holotype]
USNM 47565, 5 1/8 inches [= 130 mm] to caudal, [129 mm SL], Vulcano [= Volcano] Bay, Port Mororan [Muroran], Japan, N.A. Grebnitski, July, 1894, [acc. no. 30232].

***Zoarchias veneficus*** Jordan and Snyder, 1902a:480
Cotype [Paratypes]
USNM 50278 [27 including 2 cleared and stained, acc. no. 39095].
Remarks: Jordan and Snyder (1902a:481) designated a type (SU 7076, which consists of a single specimen, hence a holotype) and only 1 cotype [lot], USNM 50278, which was entered in the USNM catalog ledger on 25 March 1902 with the indication that it contained "25+" specimens. The latter entry was crossed out and replaced with "27" in an entry dated 27 September 1922. Although Jordan and Snyder indicated they had "a great many specimens," citing three different localities, no specimens other than the holotype and the 27 specimens in USNM 50278 are part of the type series, according to Article 50(a) of the ICZN. There is no evidence that specimens were removed from USNM 50278 before 1922 and exchanged to other museums. Although there are many specimens bearing the same collecting data as the holotype and paratypes, J.E. Böhlke (1953:99) and E.B. Böhlke (1984:158) were in error in citing SU 7104 and ANSP 91267 as paratypes. Quite possibly other museums have erroneously indicated paratypes of *Zoarchias veneficus*.

***Xiphistes versicolor*** Gilbert and Burke, 1912:88
Type [Holotype]
[USNM 74395], 175 mm long, [174 mm TL, 167 mm SL], Attu Island, Bering Sea, [shore], summer [10–11 June], 1906, *Albatross*, [acc. no. 54484].
Remarks: Paper tags tied to the holotype read, "TYPE" and "DRAWN." An original *Albatross* label gives the date and locality of collection.
Cotypes [Paratypes]
[USNM 70938 (8)], Attu Island, [acc. no. 53267].
Remarks: Gilbert and Burke (1912:89) stated that they had nine specimens from Agattu but only eight from Attu. The holotype and eight USNM paratypes exceed, therefore, the putative number of specimens from Attu. J.E. Böhlke (1953:99) indicated that eight paratypes from Agattu were present in SU 22368. We are unaware of any other paratypes. It is possible that Gilbert and Burke switched the numbers of paratypes between Agattu and Attu.

***Apodichthys violaceus*** Girard, 1854:150
[Holotype]
USNM [499], 3 3/4 inches TL [= 95.2 mm; ~95.6 mm TL, ~91.4 SL], San Luis Obispo, California, W.P. Trowbridge.

***Delolepis virgatus*** Bean, 1882:466
Type[s] [Syntypes] (2)
[Lectotype]
USNM 29149, 470 mm extreme length, [408 mm SL, 454 mm TL], Kingcombe Inlet, British Colombia, 2 Aug 1881, H.E. Nichols.
Remarks: The specimen is herein designated lectotype.
[Paralectotype]
USNM 29150 (1).

***Opisthocentrus zonope*** Jordan and Snyder, 1902a:485
Co-type [Paratype]
USNM 50292 [11].
Remarks: This lot was [originally?] indicated in the catalog ledger as having only 10 specimens. Jordan and Snyder (1902a:486) stated that their description was based on the type [= holotype] (SU 7077), but the description included information on an additional 25 specimens. The authors indicated they had "many specimens from Moroan [= Muroran] and one from Otaru," but they indicated only one paratypic lot, USNM 50292, which, like the holotype, is from Muroran. The specimen from Otaru, and any others from Mororan not contained in USNM 50292, cannot be paratypes. J.E. Böhlke (1953:100) erroneously indicated that SU 7098, containing 27 specimens from Muroran, were paratypes.

## ZOARCIDAE

***Opaeophacus acrogeneius*** Bond and Stein, 1984:523
Holotype
USNM 260320, 145 mm SL, female, off Seguam Island, 52°42'N, 172°15'W, 500–800 m, G. Hewitt aboard M/V *Mito Maru*, 12 April 1979, [acc. no. 355080].
Paratypes
USNM 260321 (2, including 1 cleared and stained and in pieces, in separate jars), [acc. no. 355080].

***Derepodichthys alepidotus*** Gilbert, 1895:456
[Holotype]
[USNM 48615], 110 mm long, off Queen Charlotte Island, *Albatross* station 3342, 1,588 fathoms [= ~2,900 m], [3 September] 1890, [acc. no. 30477].
Remarks: The specimen is in very poor condition.

***Lycodapus attenuatus*** Gilbert, 1915:372

Type-specimen [Holotype]

USNM 75821, 163 mm long, *Albatross* station 4461, Monterey Bay, California, [Point of Pines light house, S 3°, E 15 km], 285–357 fathoms [= ~521–653 m], [12 May 1904], [acc. no. 56923].

Remarks: The specimen is in poor condition. Schultz (1967:4) provided vertebral counts for the holotype.

***Lyconema barbatum*** Gilbert, 1895:471

[Syntypes (12)]

Remarks: Gilbert described *L. barbatum* based on 12 specimens from *Albatross* station 3129.

[Lectotype]

[USNM 48582], *Albatross* station 3129, 36°39′40″N, 122°01′[00″]W, 204 fathoms [= ~373 m], [13 March] 1890, [acc. no. 30477].

Remarks: Jordan and Evermann (1900:3305) indicated that their plate 352, fig. 863, was based on the "type," thus, effectively designating the illustrated specimen lectotype. Jordan and Evermann failed to specify the catalog number of the specimen, but the original drawing of Jordan and Evermann's figure 863 is in the USNM illustration files and it bears two labels, one on the drawing, and one on the cover sheet, each of which indicates that USNM 48582 is the "type" and that it is 5.1 inches long [= ~130 mm]. Based on the scale bar accompanying the drawing, the length appears to refer to TL. The lectotype, unfortunately, is now in pieces and in poor condition (whereas, at least one of the paralectotypes, USNM 53036, is in good condition) and cannot be remeasured with accuracy. Schultz (1967:5) erroneously referred to the lectotype as the holotype.

Anderson (1994:76) overlooked Jordan and Evermann's (and Schultz, 1967) lectotype designation when he erroneously designated [CAS-]SU 3627 as lectotype.

Schultz (1967:5) gave vertebral counts for the lectotype and paratype.

[Paralectotypes]

[USNM 53036 (1)], [acc. no. 44660].

Remarks: Of the remaining 10 paralectotypes, we know of the disposition of only seven: CAS-SU 3627 (1), CAS-SU 69673 (4), MCZ 28317 (1), and ZMUO 1684 (1).

***Gymnelopsis brevifenestratus*** [***Gymnelopsis brevifenestrata***] M.E. Anderson, 1982b:52

Remarks: The generic name is feminine.

Holotype

USNM 92587, young adult female, 89 mm SL, Okhotsk Sea, 57°50′N, 141°47′E, 146 m, 30 June 1912; F. Derbek, Eastern Ocean Hydrographical Expedition, R/V *Okhotsk*, station 11, [acc. no. 120879].

***Lycodes brevipes*** T.H. Bean, 1890:38

[Syntypes] [Lectotype]

[USNM 45362], [243 mm TL, 239 mm SL], *Albatross* station 2848, 55°10′N, 160°18′W, between Unga and Nagai islands, [110 fathoms = ~201 m], 31 July 1888.

Remarks: There have been two questionably valid designations of a lectotype for *L. brevipes*, both of which refer to the same specimen that we designate lectotype, that require discussion.

T.H. Bean (1890) did not designate a holotype but indicated only that he had "many specimens," for which he provided no catalog number, from *Albatross* station 2848. The specimen in USNM 45362 and the 16 in USNM 162712, originally part of USNM 45362, are the only ones we know that are identified as *Lycodes brevipes* and are indicated (original printed *Albatross* station label in jar) as having been obtained from *Albatross* station 2848. "12+" was recorded in the USNM catalog ledger as the number of specimens in USNM 45362 when it was originally cataloged on 12 April 1894. The original number of specimens was crossed out later and "17" was pencilled in its place. The 17 was later rewritten in ink, crossed out, and replaced by "1," with an accompanying note, by person unknown, stating that 16 specimens were recataloged as 162712. The date-cataloged column in the USNM register for 162712 indicates that it was entered on 10 March 1953, an important date to keep in mind. Jordan and Evermann (1898:2468) were first to designate a lectotype, which they did by indicating that USNM 45362 was the "type." We do not consider this a valid lectotype designation because no single specimen was clearly indicated; subdivision of USNM 45362 did not take place until 1953. The single specimen we found in USNM 45362 has a metal tag stamped "DRN" tied to it. It is the only one of the original 17 associated with such a tag. In our experience, we have found that when USA authors (particularly, Bean, Evermann, Gilbert, Jordan, etc.) of the late 19th century illustrated their new species, they almost always illustrated the holotypes, and these specimens often have tags reading "DRAWN" or "DRN" associated with them. It is probable, therefore, that Bean intended for this specimen to be the holotype. It is also possible that, because of the tag tied to it, the specimen now in 45362 was

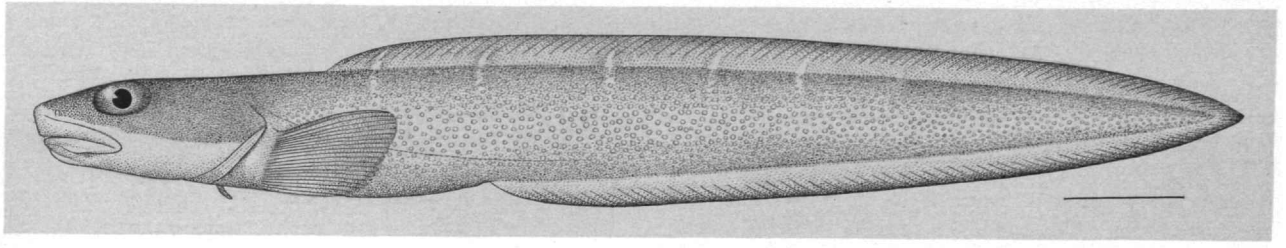

FIGURE 1.—Previously unpublished illustration of the lectotype of *Lycodes brevipes* Bean, drawn by S.F. Denton, 27 April 1889.

segregated in 1953. In keeping with our interpretation of the circumstances, we designate the specimen in USNM 45362 lectotype of *Lycodes brevipes*. We know of no published illustration depicting this specimen; however, there is an unpublished drawing, which is undoubtedly based on this specimen, in the illustration files of the Division of Fishes, USNM. The drawing bears Bureau of Fisheries illustration number 2898 and an identification only of *Lycodes*. Information written on the drawing indicates it was drawn by S.F. Denton, 27 April 1889 [completion date?] based on a specimen from *Albatross* station 2848. The drawing is stated to be natural size and measures 257 mm TL and 251 mm SL. We ascribe the nominal difference in lengths between the drawing and the specimen in USNM 45362 to mechanical error and/or shrinkage. We reproduce the illustration here as Figure 1. The lectotype is slightly longer than the largest paralectotype. Schultz (1967:5) gave vertebral counts for the lectotype and three of the paralectotypes.

Schultz (1967:5) questionably designated a lectotype for *Lycodes brevipes* when he erroneously referred to USNM 45362 as the holotype. In our interpretation of the ICZN articles referring to holotypes and lectotypes, particularly Article 73(a)(iii), which states that a holotype can only be designated in the original publication by the original author of a species-group taxon; Article 74(a), which does not exemplify "holotype" as an equivalent expression for "lectotype" or "type"; and Article 74(b), which relates to a very specific case of "holotype" being acceptable as an inference for lectotype designation, Schultz's holotype designation does not constitute lectotype designation.

[Paralectotypes]

USNM 162712 [16].

Remarks: See the remarks under lectotype.

***Maynea brunnea*** T.H. Bean, 1890:39

[Holotype]

[USNM 53029], 18 inches [= ~457 mm], *Albatross* station 2839, 33°08′[00″]N, 118°40′[00″]W, off San Clemente Island, southern California, 414 fathoms [= ~757 m], 8 May 1888.

Remarks: The specimen is now almost totally disintegrated. Schultz (1967:5) erroneously reported that the holotype is USNM 119446 and a paratype is 119447. He also gave vertebral counts for the specimens in these two lots. Actually, these two catalog numbers are those of the holotype and paratype of *Lycodes brunneus* Fowler (see next taxon).

***Lycodes brunneus*** Fowler, 1944:73

Type [Holotype]

USNM: 119446, 235 mm, [~225 mm SL], *Albatross* station 2660, 28°40′[00″]N, 78°46′[00″]W, north of Bahamas, 504 fathoms [= ~922 m], 3 May 1886.

Remarks: The caudal fin and possibly the last vertebra is missing. Schultz (1967:5) gave the vertebral counts for the holotype and paratype but erroneously identified them as the types of *Maynea brunnea* Bean (see above taxon).

Paratype

USNM 119447 (1), same collection data as holotype.

***Lycenchelys bullisi*** Cohen, 1964:113

Holotype

USNM 188232, female, 180 mm TL, 174 mm SL, *Oregon* station 4038, 28°51′N, 88°41′W, 732–750 m, Gulf of Mexico, off mouth of Mississippi River, 3 Nov 1962, [acc. no. 247715].

Remarks: Schultz (1967:4) provided vertebral counts for the holotype.

***Maynea californica*** Starks and Mann, 1911:16

Remarks: Although Starks and Mann (1911:16) attributed the species name to "Gilbert. (MS.)" and indicated that the holotype was that described by Gilbert, Starks and Mann are the authors of the species according to Article 50(a) of the ICZN. Gilbert (1915:362) described

*Maynea californica* as a new species, but his name is a junior objective synonym of *Maynea californica* Starks and Mann.

Type [Holotype]

[USNM 75819, 140 mm, *Albatross* station 4421, E point San Nicolas Island, California, N 26°, W ~6.1 km, ~419–545 m, 12 April 1904].

Remarks: The length above is as given by Gilbert (1915:362). Our remeasurement is 137 mm TL, 135 mm SL. A printed tag reading "DRAWN" is in the jar with the specimen. Schultz (1967:5) provided vertebral counts for the holotype.

***Lycodes camchaticus*** Gilbert and Burke, 1912:89

Type [Holotype]

[USNM 74396], 246 mm, [236 mm SL, ~241 TL], *Albatross* station 4797, [52°37′30″N, 158°50′E], off Avatcha Bay, east coast of Kamchatka, 682 fathoms [= ~1247 m], [20 June 1906], [acc. no. 54484].

Remarks: Printed tags reading "TYPE" and "DRAWN" are tied to the specimen. Schultz (1967:5) provided vertebral counts for the holotype.

Cotypes [Paratypes]

[USNM 70928] (2), taken with holotype, [acc. no. 53267].

Remarks: Gilbert and Burke (1912:80) indicated that there were three cotypes taken with the holotype. J.E. Böhlke (1953:101) reported the presence of one paratype as SU 22366, thus accounting for all paratypes.

***Lycodes coccineus*** T.H. Bean, 1881:144

Typical specimen [Holotype]

USNM 27748, 484 mm TL, "present state" 475 mm TL, Big [or] Great Diomede Island, 10 September 1880, collector's number 1712.

Remarks: Metal tags stamped "27748," "1712," and "DRN" are tied to the specimen, which is in poor condition. An illustration of the holotype appeared in Jordan and Evermann (1900:3305, pl. 350, fig. 857) but was identified as *Lycodalepis polaris*.

***Lycodes concolor*** Gill and Townsend, 1897:233

[Holotype]

Remarks: Gill and Townsend (1897:233) did not indicate the number of specimens on which they based their description, although it could have been only one, as no variation was indicated. The authors stated that the species they were treating were [only] diagnosed and "will hereafter be described at length and illustrated." There is no evidence that an illustration based on Gill and Townsend's specimen(s) of *Lycodes concolor* was ever made, nor that they published a more detailed description. The year after Gill and Townsend's description, Jordan and Evermann (1898:2463) did provide a more detailed description that they said was based on the type and only known specimen, for which they gave the catalog number USNM 48764. We accept the accuracy of their holotype determination.

[USNM 48764], [~559 mm], Bering Sea, *Albatross* station 3608, 55°19′[00″]N, 108°11′[00″]W, 276 fathoms [= ~505 m], 12 August 1895, [acc. no. 32960].

Remarks: A metal tag stamped "1307" is tied to the specimen, which is badly deteriorated and in pieces. Schultz (1967:5) provided vertebral counts for the holotype.

***Aprodon corteziana*** [***Aprodon cortezianus***] Gilbert, 1890:107

Remarks: The generic name is masculine.

[Syntypes (6)]

[Type] [Lectotype]

[USNM 46457], [283 mm SL, 287 mm TL], *Albatross* station 2948, [33°53′30″N, 119°41′30″W, 266 fathoms = ~486 m, 7 February 1889], [acc. no. 27965].

Remarks: Jordan and Evermann (1898:2461) indicated that USNM 46457 was the "type," thereby effectively designating the lectotype. Schultz (1967:4) provided vertebral counts for the lectotype and three extant USNM paralectotypes, which he referred to as holotype and paratypes.

[Paralectotypes]

Remarks: Gilbert indicated that he had six specimens. The USNM catalog register indicates that, aside from the lectotype, USNM had four specimens, of which three, now in pieces and in very poor condition, were contained in one jar, and one appears to be lost. The extant three have been placed in separate jars, but we are uncertain that all the parts were correctly allocated. All five USNM specimens were taken at *Albatross* station 2948. J.E. Böhlke (1953:101) noted the presence of one paralectotype at Stanford University (SU 2780) from station 2925, thus accounting for all but the missing USNM paralectotype.

[USNM 47056 (1)], [metal tag no. 237].

[USNM 47057 (1)], [metal tag no. 244].

[USNM 47180 (1)], [metal tag no. 234].

[USNM 47198 (1)], [0] [metal tag no. 233], lost, not found during 1980 inventory of types.

***Lycodopsis crassilabris*** Gilbert, 1890:106

[Holotype]

[USNM 44280], 12 inches [= ~305 mm], *Albatross* station 2839, [33°08′00″N, 118°40′00″W], [8 May 1888], [~757 m].

Remarks: The specimen is badly deteriorated. Schultz (1967:5) provided vertebral counts for the holotype.

***Lycodopsis crotalinus*** Gilbert, 1890:105
[Holotype]
[USNM 44279], 13 inches [= ~330 mm], *Albatross* station 2980, [33°49′45″N, 119°24′30″W], 603 fathoms [= ~1103 m], [12 February] 1889.
Remarks: The holotype, now badly deteriorated, was illustrated by Jordan and Evermann (1900, pl. 348: fig. 851). Stamped metal tags tied to specimen read, "520" and "44279." Schultz (1967:5) provided vertebral counts for the holotype.

***Exechodontes daidaleus*** DeWitt, 1977:790
Holotype
USNM 211797, 96.3 mm SL, *Oregon II* station 10632, 27°01′N, 84°55′W, about 120 n. mi. [= ~222 km] ESE [WSW] of Tampa Bay, 503 m, 18 June 1969, [acc. no. 310216].
Remarks: The specimen is partially dissected and in relatively poor condition. The coordinates given by DeWitt place the type locality WSW of Tampa Bay; 120 nautical miles ESE of Tampa Bay would place the locality inland in southern Florida.

***Rhigophila dearborni*** DeWitt, 1962:821
Paratypes
USNM 196978 (1), [acc. no. 242453].
USNM 196979 (4), [acc. no. 242453].

***Lycodapus dermatinus*** Gilbert, 1895:471
[Holotype]
[USNM 53035], 113 mm long, *Albatross* station 3162, 37°54′10″N, 123°30′W, 552 fathoms [= 1109 m], [22 March 1890], [acc. no. 56923].
Remarks: The specimen is in very poor condition. Schultz (1967:4) provided vertebral counts for the holotype.

***Lycodes diapterus*** Gilbert, 1892:564
[Syntypes]
Remarks: Gilbert (1892:565) did not designate a holotype, indicating only that he had "several specimens, from stations 2892, 2896, 3067, and 3077 from ... off the coasts of California and Oregon." Jordan and Evermann (1898:2473) indicated that USNM 44385, which contains a single specimen from station 2896, was the "type," thus effectively designating the lectotype.
[Type] [Lectotype]
[USNM 44385], [~280 mm TL], *Albatross* station 2896, [off southern California, 33°55′30″N, 120°28′00″W], [~688 m], [6 January 1888].
Remarks: A metal tag stamped "525" is tied to the specimen, which is fragile and damaged. Schultz (1967:5) provided vertebral counts for the "holotype" and USNM "paratypes" [paralectotypes].
[Paralectotypes]
Remarks: J.E. Böhlke (1953:101) listed two paralectotypes, as SU 176, from station 2892. The SU specimens together with the USNM lectotype and paralectotypes represent all the *Albatross* stations from which Gilbert reported type material. We do not know, however, if other specimens from the same stations were distributed to other museums.
[USNM 46716 (1)], station 3077, [acc. no. 27965].
[USNM 125538 (1)], station 3067, [original Bureau of Fisheries no. 664], [acc. no. 163614].

***Lycodes digitatus*** Gill and Townsend, 1897:232
[Holotype]
[USNM 48765], [~457 mm TL], Bering Sea, *Albatross* station 3541, 56°14′[00″]N, 164°9′[00″]W, 49 fathoms [= ~90 m], [10 August 1893], [acc. no. 32960].
Remarks: Gill and Townsend (1897:232) did not indicate the number of specimens on which they based their description, although it could have been one, as no variation was indicated. The authors stated (p. 231) that the species they were describing in their study were [only being] diagnosed and "will hereafter be described at length and illustrated." There is no evidence that an illustration based on Gill and Townsend's specimen(s) was ever made, nor that they published a more detailed description. The year after Gill and Townsend's description, Jordan and Evermann (1898:2466) did provide a more detailed description that they said was based on the type and only known specimen, for which they gave the catalog number USNM 48765. We accept the accuracy of their holotype determination. A metal tag stamped "1306" is tied to specimen, which is almost disintegrated.

***Nalbantichthys elongatus*** Schultz, 1967:2
Holotype
USNM 200671, 136 mm SL, 138.3 TL, south-central Bering Sea, 300 m, C. Bădică, May 1964, [acc. no. 253587].
Remarks: The specimen is deteriorating; the anterior end is badly damaged. Schultz (1967, figs. 1–3) illustrated the holotype and the caudal skeleton diagrammatically; Anderson (1994, figs. 13b, 56, 57) redrew them.

***Lycodapus endemoscotus*** Peden and Anderson, 1978:1936
Holotype
USNM 216471, male, 124 mm SL, OSU R/V *Yaquina* cruise 6907-c, station THB-19 [Haul 89], 45°44.4′N, 125°26.6′W, 2225 m, [A. Carey], 19 July 1969, [acc. no. 324129].
Paratypes
USNM 216472 (2), same collection data as holotype.
USNM 216473 (1), formerly UW 19259, acc. no. 324129.

***Lycodapus extensus*** Gilbert, 1895:455

[Holotype]

[USNM 48638], 92 mm long, *Albatross* station 3324, [53°33′50″N, 167°46′50″W], north of Unalaska Island, 109 fathoms [= ~199 m], [20 August] 1890, [acc. no. 30477].

Remarks: The specimen has almost disintegrated. The name was treated as a nomen dubium by Peden and Anderson (1978:1957).

***Lycodapus fierasfer*** Gilbert, 1890:108

[Syntypes]

Remarks: Gilbert (1890) did not indicate a holotype, mentioning only that he had several specimens [syntypes] from *Albatross* stations 2980, 3010, and 3072. He also did not indicate where he deposited his specimens. J.E. Böhlke (1953:101) reported the presence of a syntype (CAS-SU 845), from station 3010 in the SU collections, which Peden and Anderson (1978:1953) designated lectotype. Peden and Anderson were unable to locate any syntypes from station 2980.

[Paralectotypes]

[USNM 43094 (3)], acc. no. 23787.

Remarks: These specimens are from *Albatross* station 3072. Eight specimens were indicated to be in this lot when originally cataloged. A note in the catalog indicates that six specimens were recataloged as USNM 53063 and sent to Gilbert on 23 October 1913. The specimens are all in very poor condition. Peden and Anderson (1978:1953) erred in giving the catalog number as USNM 43097.

[USNM 53063 (6?)].

Remarks: Formerly part of USNM 43094 (see remarks above), this lot was reidentified (identifier unknown) as *Maynea brunnea*. The jar contains a vial filled with pieces of several specimens, an old label indicating that the specimens are "types" of *Lycodapus fierasfer*, and another label indicating that a radiograph is present in the Division of Fishes files.

***Lycodes frigidus*** Collett, 1879:45

[Syntype]

[USNM 22977 (1)] specimen l, 342 mm TL [~330 mm TL], station 295, 60 miles [= ~97 km] west of Hammerfest, Norway, 1110 fathoms [= ~2030 m], 15 July 1878.

Remarks: Collett (1879) [~330 mm TL] based his description on 15 large specimens (a–p) and two small ones (A, B) from various localities. The USNM register indicates that this is specimen l, which Collett (1879:48) measured as 342 mm TL. As far as we have been able to determine, no lectotype had been validly designated from among Collett's syntypes, and we refrain from doing so as the lectotype should be designated from among the syntypes at ZMUO, which houses Collett's types. Syntypes are also present in the BMNH, MNHN, and ZMUC collections. Schultz (1967:5) erroneously referred to the USNM syntype as "holotype," (see remarks under *Lycodes brevipes* for explanation why Schultz's 1967 holotype indications are not valid lectotype designations).

***Zoarces gillii*** Jordan and Starks, 1905:212

Type [Holotype]

USNM 45355, 24 cm, [2.35 cm SL], Fusan [= Pusan], Korea, P.L. Jouy, 1885, [original no. 716], [acc. no. 28032].

Remarks: Schultz (1967:5) provided vertebral counts for the holotype. The specific epithet was spelled "gillii" at the head of the description, and "gilli" in the caption to the figure depicting the holotype. We recognize the former as the intended spelling.

***Lycodapus grossidens*** Gilbert, 1915:373

Type specimen [Holotype]

USNM 75824, 105 mm [TL], 102 mm [SL], *Albatross* station 3483, Bering Sea, 57°18′N, 171°18′W, 56 fathoms [= ~102 m], [23 July 1903].

Remarks: The specimen is now in very poor condition. Peden and Anderson (1978:1938) identified all the paratypes as *Lycodapus mandibularis* Gilbert (1915:369), whereas they identified the holotype as *Lycodapus fierasfer* Gilbert (1890).

Paratypes

[USNM 135596 (3)].

Remarks: The specimens are in very poor condition. Gilbert (1915:374) mentioned that he had five paratypes from station 4257. J.E. Böhlke (1953:102) listed two paratypes from station 4257 as SU 25634, thus accounting for all the paratypes.

***Pachycara gymninium*** Anderson and Peden, 1988:88

Holotype

USNM 280121, female, 422 mm SL, British Columbia, W of Tasu Sound, Queen Charlotte Islands, 52°38.0′N, 132°05.8′W, 2744 m, 4 February 1980, [acc. no. 372115].

Paratype

USNM 221113 (1).

***Lycodes jordani*** Evermann and Goldsborough, 1907:343

Type [Holotype]

USNM 57828, 13.25 inches [= ~337 mm], *Albatross* station 3788, [43°01′00″N, 125°30′00″W], 1064

fathoms [= ~1946 m], 27 April 1901, field no. 2439, [acc. no. 47988].

Remarks: The specimen is in pieces and in poor condition.

***Pachycara lepinium*** Anderson and Peden, 1988:91

Holotype

USNM 280120, male 465 mm SL, British Columbia, W of Tasu Sound, Queen Charlotte Islands, 52°38.0'N, 132°05.8'W, 2744 m, 4 February 1980, [acc. no. 372115].

Paratype

USNM 221114 (1).

***Lycodapus leptus*** Peden and Anderson, 1981:671

Holotype

USNM 222660, emaciated, spawned-out female, 99 mm SL, *Yakushi Maru* cruise 21, station 033, 59°00.3[4]'N, 178°21.6[2]'W, 0–568 [59–598] m, 25 [26] June 1979, D.M. Cohen and T. Iwamoto, [acc. no. 337100].

Remarks: Data in the USNM files indicate minor differences from published data on the holotype. The date was apparently taken from the ship's log, which used Japanese time, which is one day later than in the United States of America.

Paratypes

USNM 221054 (24), acc. no. 337100.
USNM 221055 (1), acc. no. 337100.
USNM 221066 (3), acc. no. 337100.
USNM 222659 (1), acc. no. 337100.
USNM 222661 (1), same data as holotype.
USNM 222662 (1), acc. no. 337100.

***Lycodapus lycodon*** Gilbert, 1915:371

Type-specimen [Holotype]

USNM 75822, 141 mm [TL], 136 mm [SL], *Albatross* station 4509, [Pt. Pinos light house, S 13°, W 8.6 miles = ~13.4 km], Monterey Bay, California, 152–286 fathoms [= ~278–523 m], [20 May 1904].

Remarks: A printed tag with the specimen reads, "DRAWN." Schultz (1967:4) provided vertebral counts for the holotype.

***Lycodapus mandibularis*** Gilbert, 1915:369

Type-specimen [Holotype]

USNM 75823, 165 mm [TL], 160 mm [SL], *Albatross* station 4533, [Pt. Pinos light house, S 73°E, 4.9 miles = 7.9 km], Monterey Bay, California, 144–293 fathoms [= ~263–536 m], [28 May 1904].

Remarks: The specimen is partially dissected and in poor condition. Schultz (1967:4) provided vertebral counts for the holotype.

Cotypes Paratypes [Paratypes]

USNM 149514 (2), station 4461.

Remarks: Gilbert used both terms (cotypes and paratypes) when referring to paratypes in the description. He did not specify the number of paratypes, only that they were taken at stations 4461, 4468, and 4539. J.E. Böhlke (1953:102) reported that SU 22990 contained one paratype from station 4539, and SU 25765 contained five from station 4468. Peden and Anderson (1978:1939) indicated the presence of only four specimens in SU 25765. We are unaware of the existence of any other paratypes.

***Bothrocara mollis*** [***Bothrocara molle***] T.H. Bean, 1890:39

[Holotype]

[USNM 45359], 5 1/4 inches [= ~133 mm] long, *Albatross* station 2860, off Cape St. James, Queen Charlotte Islands, 876 fathoms [= ~1602 m], 31 August 1888.

Remarks: T.H. Bean (1890:38–39) described a new genus, *Bothrocara*, mentioning that he had "specimens," but not how many. He followed the generic description with that of one new species, *Bothrocara mollis*, for which he mentioned having only one specimen. The catalog entry for USNM 45359 indicates that two specimens were originally present in this lot. Someone (L.P. Schultz?) removed the smaller of the two specimens, both of which are now almost disintegrated, and it has been recataloged as USNM 331716 (a note in the jar reads, "Not a type"). A handwritten label made by L.P. Schultz, 7 May 1940, included with the larger specimen, which is in the jar labeled USNM 45359, reads, "Fin ray counts on large specimen D. 110, A. 94. Specimen in very bad condition." This specimen is now indicated as the holotype.

***Lycenchelys monstrosa*** Anderson, 1982a:208

Holotype

USNM 224467, male, 242 mm SL, Pacific Ocean, Gulf of Panama, 6°52'N, 79°28'W, R/V *James M. Gilliss*, sta. GS 1, in 3,200–3,229 m, 2335–0135 hrs., 13–14 January 1972, [acc. no. 343252].

Paratypes

USNM 224466 (2), same collection data as holotype, [acc. no. 343252].

***Krusensterniella notabilis*** Shmidt, 1904:198

[Syntype]

[USNM 92591 (1)], Cape of Bellingsgausen [Bellingshausen], [Sakhalin, Sea of Okhotsk], V. Brashnikov, No. 20, 1899, [acc. no. 120879].

Remarks: This specimen is one of six originally cataloged as ZIN 13011. The other five presumably are still at ZIN.

***Lycodapus pachysoma*** Peden and Anderson, 1978:1944, 1946

Remarks: In the original printing of the description the

new name appears on page 1946, but part of the description got transposed to page 1944. The authors distributed corrected pages 1943–1948, which some recipients used to replace these pages in reprints of the original publication. In the corrected pages, the original description begins on page 1944. Peden and Anderson (1979:472–473) discussed the problem and republished the new species description, as well as correcting some erroneous figure numbers that appeared in the original publication.

Holotype

USNM 216468, female, 138 mm SL, OSU *Cay*, cruise 7304A, station CBT-17, 43°23.0′N, 125°18.5′W, 2000 m, [E. Ruff], 1973, [acc. no. 324129].

Paratypes

USNM 216469 (1), [acc. no. 324129].

USNM 216470 (1), [acc. no. 324129].

***Lycodes palearis*** Gilbert, 1895:454

[Syntype]

USNM 48592 (1), *Albatross* station 3254, [56°50′00″N, 164°27′50″W], [14 June] 1890, [acc. no. 30477].

Remarks: The description is based on three specimens from *Albatross* stations 3253 and 3254. J.E. Böhlke (1953:101) reported that there were two syntypes in the SU collection, one from each of the two stations. The USNM specimen is almost completely disintegrated and unacceptable for designation as a lectotype.

***Melanostigma pammelas*** Gilbert, 1895:472

Type [Holotype]

[?USNM], 104 mm, *Albatross* station 3202, 36°46′10″N, 121°58′45″W, 382 fathoms [= ~699 m], [11 April 1890].

Remarks: The holotype presumably should have been deposited at USNM, but it was never cataloged into the USNM collection. Its disposition is unknown to us, and we presume it is lost. The original drawing (published as Gilbert, 1895, pl. 35: bottom figure) for the illustration of the holotype is in the illustration files of the Division of Fishes, USNM; the drawing bears an indication that it is based on the "type."

[Paratypes]

Remarks: Gilbert indicated the presence of three paratypes, all from *Albatross* station 3126. Two are present in the USNM collection and one, erroneously reported as a "syntype" by Böhlke (1953:101), is cataloged as CAS-SU 4000.

[USNM 48599 (1)], [acc. no. 30477], specimen almost totally disintegrated.

[USNM 53034 (1)], [acc. no. 44660].

***Embryx parallelus*** Gilbert, 1915:360

Type-specimen [Holotype]

USNM 75818, 387 mm long, [~379 mm SL], *Albatross* station 4514, [Pt. Pinos light house, S 39°, E 10.7 miles (= 17.2 km)], Monterey Bay, California, 394–406 fathoms, [23 May 1904].

Remarks: A printed tag in the jar reads, "DRAWN." Schultz (1967:4) provided vertebral counts for the holotype.

***Lycodapus parviceps*** Gilbert, 1895:455

[Holotype]

USNM 48631, 115 mm, *Albatross* station 3324, [53°33′50′N, 167°46′50″W], north of Unalaska Island, 109 fathoms [= ~199 m], 20 August 1890, [acc. no. 30477].

Remarks: The specimen is in pieces and in very poor condition.

***Leurynnis paucidens*** Lockington, 1880:326

Types [Syntypes] (2)

Remarks: Lockington based his description on two specimens, "10 to 12 inches," which were assigned USNM 23502. We herein designate the smaller specimen, which is in slightly better condition, as lectotype. The lectotype retains the original catalog number. Schultz (1967:4), who did not separate the syntypes and assign them different catalog numbers, erroneously referred to them as "holotype" and "paratype," and provided vertebral counts for both (see remarks under *Lycodes brevipes* for explanation why Schultz's (1967) holotype indications are not valid lectotype designations).

[Lectotype]

USNM 23502, [223 mm SL], market at San Francisco, California, [metal tag stamped "9" tied to body].

[Paralectotype]

[USNM 336667], [257 mm SL], [metal tag stamped "13" tied to body].

***Gymnelus pauciporus*** M.E. Anderson, 1982b:47

Holotype

USNM 92589, adult male, 136 mm SL, south of Cape Ozernoy, Kamchatka Peninsula, 57°31.0′N, 163°49.5′E, 275 m, 19 August 1920, [original no. ZIL 23945], [acc. no. 120879].

***Lycodes paxillus*** Goode and Bean, 1879:44

[Holotype]

USNM 22177, 363 mm extreme length, gully between Le Have and Sable Island Banks in 42°48′N, 63°07′W, 1200–2400 ft [= ~366–732 m], Capt. J.W. Collins and crew of schooner *Marion*.

Remarks: Goode and Bean (1879:44) reported that the specimen was in "dilapidated condition, and was apparently taken from the stomach of a fish." We would describe the condition presently as the same, although remarkably good relative to the state of many USNM types taken around the same period. We are reluctant, nevertheless, to handle the holotype for remeasuring. The catalog register

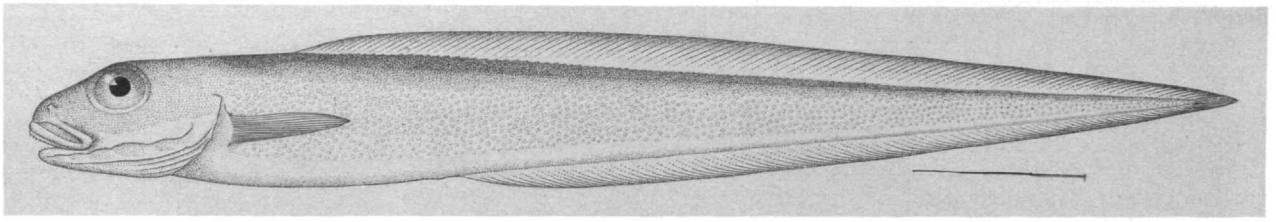

FIGURE 2.—Previously unpublished illustration presumably of the holotype of *Maynea pusilla* Bean (now *Bothrocara pusillum*), drawn by S.F. Denton, 4 April 1889. See remarks under *M. pusilla* in text.

indicates the original number of this specimen was 237, which is actually the identifying number listed for the vessel and captain in Anonymous (1882). Schultz (1967:5) provided vertebral counts for the holotype.

***Lycenchelys poecilimon*** Jordan and Fowler, 1902:748

Type [Holotype]

USNM 50578, length 150 mm, [148 mm TL], *Albatross* station 3768, [Daikoku Saki, N 63°, E 4.25 miles = 6.8 km], off Kinkwazan in Matsushima Bay, [25–27 fathoms = ~46–49 m], [5 June 1900].

Remarks: A stamped metal tag in the jar with the specimen bears four numbers; the first is possibly a 7 and it is followed by 121. Schultz (1967:4) provided vertebral counts for the holotype.

***Lycodapus poecilus*** Peden and Anderson, 1981:673

Holotype

USNM 222663, 94 mm SL, taken by D.[M.] Cohen [and T. Iwamoto] aboard M/V *Yakushi Maru*, cruise 21, station 098, 58°32.0′[32′02″]N, 176°06.35′[06′21″] W, 0–539 m [497–539 m], 25 June 1979, [acc. no. 337100].

Remarks: The holotype was removed from USNM 221062. The date was taken from the ship's log, which used Japanese time, which is one day later than in the United States of America.

Paratypes

USNM 221053 (2), acc. no. 337100.
USNM 221060 (5), acc. no. 337100.
USNM 221061 (11), acc. no. 337100.

Remarks: Peden and Anderson (1981:673) reported that this lot contained a total of only 10 specimens: one immature, seven females, and two males.

USNM 221062 (5), acc. no. 337100, taken with holotype.
USNM 221063 (1), acc. no. 337100.
USNM 221064 (3), acc. no. 337100.

***Lycodes porifer*** Gilbert, 1890:104

[Holotype]

[USNM 44384], 12 inches long [= ~305 mm], *Albatross* station 3009, [27°09′00″N, 111°42′00″W], 857 fathoms [= ~1567 m], [20 March 1889].

Remarks: The specimen is almost disintegrated; a metal tag stamped "522" is tied to the head.

***Lycodapus psarostomatus*** Peden and Anderson, 1981:668

Holotype

USNM 221057, male, 134 mm SL, captured by D.[M.] Cohen [and T. Iwamoto] aboard M/V *Yakushi Maru*, cruise 21, station 028, 59°53.8′[53′50″]N, 178° 57.12′[57′07″]W, 0–580 m [564–580 m], 26 [27] June 1979, [acc. no. 337100].

Remarks: The date was taken from the ship's log, which used Japanese time, which is one day later than in the United States of America.

Paratypes

USNM 221052 (1), acc. no. 337100.
USNM 221056 (1), acc. no. 337100.
USNM 221058 (10), acc. no. 337100.

***Maynea pusilla*** T.H. Bean, 1890:39

Type [Holotype]

[USNM 45360], 6 1/2 inches [= ~165 mm], *Albatross* station 2848, 55°10′[00″]N, 160°18′[00″]W, [between Unga and Nagai Islands], 110 fathoms [= ~201 m], [31 July] 1888.

Remarks: The specimen is in pieces and in poor condition. A tag including the word "Drawn" is in the jar with the specimen. The illustration of the holotype has not been published. Annotations on an unpublished drawing in the USNM illustration files originally identified the drawing to be a lycodid, and later to be "*Maynea* ?". The drawing was from station 2848 and was made 4 April 1889 by S.F. Denton. The figure is almost certainly drawn from the holotype, although based on the scale bar on the drawing, the illustrated specimen would be about 177 mm TL, 170 mm SL. We believe that mechanical error could account for the difference in size of the artist's rendition and that given for the holotype. Because of the poor condition of the holotype, we publish the illustration here (Figure 2).

***Bothrocara remigera*** [***Bothrocara remigerum***] Gilbert, 1915:366

Remarks: The gender of the generic name is neuter and thus requires a different ending for the species name.

Type-specimen [Holotype]

USNM 75820, male, 283 mm long, [281 mm SL], *Albatross* station 4516, Monterey Bay, 718–756 fathoms [= ~1313–1383 m], [24 May] 1904.

Remarks: Locality data entered in the USNM catalog register were taken from station 4421 and are erroneous, probably the result of the cataloger's routine use of ditto marks. Handwritten notes in the jar with the holotype read, "See letter of C.H.G. to B.A. Bean dated May 12, 1914. Albatross' colli[illegible] 1904. Rec'd from Dr. C.H. Gilbert, May, 1914" and [by L.P. Schultz], "Fin rays D.110 + 7 A. 99 + 7 on caudal." Schultz (1967:4) provided vertebral counts for the holotype.

[Paratypes]

Remarks: Gilbert (1915:367) made the following statement, "In addition to the type [from station 4516], 3 smaller specimens were obtained at the same locality. The species is also known from the following stations ... 2923,3075,3627,4380." Gilbert provided data on at least five specimens in his description. We have located paratypes only from stations 2923 and 3075 at USNM. J.E. Böhlke (1953:102) reported that four [sic] paratypes from station 4516 were at Stanford: SU 22982 (3) and SU 22987 (1). The exact number of paratypes is unknown.

[USNM 46709] [3] [2].

Remarks: An *Albatross* label in the jar indicates station 3075. The catalog register indicates that three specimens were originally present. A note written by M.E. Anderson, dated 6 Oct 1994, indicates the presence of only two specimens. The specimens are in pieces and in very poor condition.

[USNM 46710] [2], acc. no. 27965.

Remarks: An *Albatross* label in the jar indicates station 2923. The specimens are reduced to pieces, and no attempt was made to determine the number of specimens present.

***Lycodes sagittarius*** McAllister, 1975:9

Paratype

USNM 212282 (1), [acc. no. 313083].

***Lycenchelys spilotus*** Fowler, 1943:89

Type [Holotype]

USNM 99511, 70 mm, [69 mm TL, 67 mm SL], *Albatross* station D4817, Japan, Niigata light, S 29°, E 18 miles [= 29 km], 38°12′N, 138°52′E, [~112 m], 18 July 1906, [acc. no. 65731].

Remarks: Schultz (1967:4) provided vertebral counts for the holotype.

***Pachycara sulaki*** Anderson, 1989:231

Holotype

USNM 292811, male, 189 mm [SL], Mona Passage off Puerto Rico, 18°28.7″N, 67°20.6′W, 2000 m, [field no. DT-36, M], D.A. Hensley, 12–13 February 1986, [acc. no. 378719].

Paratype

USNM 233627 (1).

***Lycodes turneri*** T.H. Bean, 1879b:463

[Holotype]

USNM 21529, 330 mm to end of middle caudal rays, St Michael's, Alaska, 28 March 1876, L.M. Turner, [original no. 1000].

Remarks: The specimen appears fragile, and we have not remeasured it. Schultz (1967:5) provided vertebral counts for the holotype.

***Lycodes verrillii*** Goode and Bean, 1877:474

[Syntypes]

Remarks: Goode and Bean (1877) based their description on two lots: USNM 21013, which contained five specimens, and USNM 21015, which contained one "very small specimen." The original catalog entry for USNM 21013 indicated the presence of five specimens, together with a remark that one specimen had been given to Prof. Verrill [at Yale University, thus leaving four specimens]. The Yale syntype was reported by Moore and Boardman (1991:27) as YPM 3633. During an early 1980s inventory of the USNM type collection, a computerized entry for USNM 21013 indicated the presence of only three specimens, such as we found in April 1995. The disposition of the missing fourth specimen is unknown to us. The small specimen (~ 47 mm TL) in USNM 21015 has been a source of confusion. Its syntypic status has gone unnoticed since the original description. We found it in the nontype collection wrapped in linen and tied with string in a jar with over 20 cataloged lots of *L. verrillii*, bearing USNM catalog numbers between 23766 and 45933. These included a large number of specimens, most individually tagged and some disintegrated. According to Goode and Bean (1895: atlas page 17*), their pl. 79: figs. 277, 277A, representing a large male and a juvenile, is based on specimens in USNM 21015, which they originally noted contained only one specimen. Goode and Bean's catalog number attribution for the illustrations is in error. Neither figure is based on the small specimen in 21015. Their figure 277A was based on one of the syntypes, 119 mm TL, in USNM 21013. Both the illustration and

one of the three specimens are in good general agreement, especially with regard to the color pattern of the body and relative head length. Furthermore, examination of the specimen indicates the presence of pinholes at the base of the dorsal fin, probably indicating that the illustrator had pinned the fin to facilitate its depiction. We herein designate this specimen (119 mm TL, USNM 21013) as lectotype; it retains the original catalog number. The two resulting paralectotypes from this lot are recataloged as USNM 336784; one is badly faded, 122 mm TL, and the other is in pieces and in poor condition. Schultz (1967:5) erroneously referred to USNM 21013 as the "holotype," failing to note that there were three specimens in the jar with this catalog number. He provided vertebral counts for his ostensible holotype, which might serve to distinguish that specimen from the other two in the jar; however, Schultz's action does not constitute lectotype designation (see remarks under *Lycodes brevipes* for explanation why Schultz's (1967) holotype indications are not valid lectotype designations).

The specimen upon which Goode and Bean (1877) based most of their description was 127 mm TL and had a head length of 22 mm (or about 17% TL). The head length of the specimen illustrated by Goode and Bean (1895) in their figure 277A and that of the lectotype are each about 14.5% TL. The head length of the specimen illustrated by Goode and Bean (1895) in figure 277 is difficult to determine accurately, but approximates 20%–25% TL. We believe that Goode and Bean (1877) would have mentioned such a large difference in proportionate head lengths among their specimens had the specimen of figure 277 been among their original syntypes. Further corroboration of this is found in Goode and Bean's (1895:310) statement, "*L. verrillii* proves, as we have long believed it to be, a pygmy species, reaching maturity at a length of from 5 to 6 inches. The old males are transformed almost beyond specific recognition by an extraordinary development of the entire head in advance of the eyes." We are unable to determine to which cataloged lot the nontype specimen illustrated in figure 277 belongs.

Jordan and Evermann (1900:3305, pl. 351: fig. 859) reproduced Goode and Bean's (1895) figure 277 and also accorded it erroneously to USNM 21015.

[Lectotype]

USNM 21013, 119 mm TL, 30 miles [= ~48 km] south of Cape Negro, Nova Scotia (localities 44 and 45), [43°05½'N, 65°02'W], 90 fathoms [= ~165 m], [21 August 1877].

[Paralectotypes]

Remarks: See the remarks under the syntypes above.

USNM 21015 (1).

[USNM 336784 (2)], formerly part of USNM 21013.

***Bothrocara zesta*** [***Bothrocara zestum***] Jordan and Fowler, 1902:749

Remarks: The gender of the generic name is neuter and thus requires a different ending for the species name.

Type [Holotype]

USNM 50576, length 482 mm, [475 mm SL], *Albatross* station 3696, Sagami Bay, [Manazuru Zaki, N 70°, W 4.7 m = ~7.6 km], Japan, [501–749 fathoms = ~916–1370 m], [5 May 1900].

Remarks: In August 1985, two jars, each containing a single specimen and each bearing the catalog number USNM 50576, were found in the collection. One specimen in very poor condition, probably approximating 482 mm TL, has two metal tags, stamped "50576" (the catalog number) and "2344," tied to its lower jaw. The other specimen is almost completely decomposed. Two metal tags are in the jar with the remains, one stamped "50576" and the other "2342." The original entry in the USNM catalog register for 50576 indicates that only one specimen was in the lot. The almost decomposed specimen was recataloged as USNM 331717, and we believe it is a paratype. In the event that the circumstances we describe can be interpreted to indicate that the two specimens are syntypes, we herein designate the specimen with the tag 2344, now in USNM 50576, lectotype. Schultz (1967:4) provided vertebral counts for the holotype, which is probably the same specimen we recognize as the holotype.

Cotype [Paratype]

Remarks: Jordan and Fowler (1902:750) did not indicate how many paratypes they had, stating only that cotypes ( = paratypes) from the same station as the holotype were in the SU collection. J.E. Böhlke (1953:102) listed one paratype from station 3696 as SU 7256. Anderson (1994:112) listed SU 7256 and SU 7122, each with one specimen, as paratypes.

[USNM 331717 (1)], see the remarks under holotype.

***Lycodes zoarchus*** Goode and T.H. Bean, 1895:308

Type [Holotype]

USNM 39298, 366 mm [TL?], *Albatross* [station no. 2499], 44°46'30"N, 59°55'45"W, 130 fathoms [= ~238 m], [6 July 1885].

Remarks: The specimen, which is now in pieces and in poor condition, is impossible to measure accurately, although 366 mm TL appears to be a

reasonable estimate. The original catalog register entry for 39298, made in 18 November 1887, indicates "(type)" following the scientific name, but it gives the number of specimens as "3." When we located USNM 39298 in the collection, it consisted of two jars. One jar contained one specimen and had a neck label indicating that it is a primary type. Metal tags stamped "DRN" and "39298" are still tied to the remains of the head of this specimen, confirming its status as the holotype, which Goode and Bean (1895, pl. 79: fig. 276) illustrated. The other jar contained three specimens and had a neck label indicating that they are paratypes (an older neck label in the jar indicated "cotypes"). Goode and Bean did not specify the exact number of specimens that comprised their type series and, with the exception of one paratype (USNM 39299), did not specify catalog numbers or collection data for the paratypes. We are unable to explain the discrepancy between the number of specimens we found originally cataloged as USNM 39298 and the number entered in the catalog. The paratypes originally included in USNM 39298 have been recataloged as USNM 336785. Schultz (1967:5) erroneously indicated that the holotype was cataloged as USNM 39398, and indicated that a paratype was cataloged as USNM 29298. A typographical error is probably involved in the catalog number he gave for the holotype (39398 is a batoid), which is probably the specimen we found alone in the jar with the primary type label. Schultz provided vertebral counts for the two specimens he cited.

[Paratypes]

USNM 39299 (1), in very poor condition.

[USNM 336785 (3)], originally in USNM 39298 with the holotype; all in very poor condition.

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