
PUBLICATIONS OF THE UNITED STATES COMMISSION
OF FISH AND FISHERIES AVAILABLE FOR
DISTRIBUTION ON JUNE 30, 1903.

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The publications of the Commission consist of an annual report and an annual bulletin, which are Congressional documents. A certain number of copies are allotted to Senators and Representatives, and a small part of the edition is assigned to the Commission. Each volume is made up of separate papers treating of the different subjects germane to the work of the Commission, and a limited edition of these papers is issued in pamphlet form in advance of the bound volume for distribution to those especially interested in the subject-matter. The publications of which copies can be supplied to persons particularly interested are shown in the following lists. The issuance of several reports already in type has been anticipated, so that the list covers probably all papers which will have been printed to July 1, 1904.

Of the bound publications, all the earlier volumes are out of print, and all the copies allowed the Commission have been distributed. A few copies of the reports and bulletins for the years indicated can be furnished. Each pamphlet has a serial number, by which it may be designated in making application therefor; the numbers missing from the list are out of print and can not be supplied. Bound reports and pamphlets that are no longer available at this Commission may sometimes be obtained by addressing the Superintendent of Documents, Washington, D. C., or may be consulted at most of the prominent libraries and educational institutions in this country and abroad.

BOUND PUBLICATIONS.

Designation.	For the year—	Pub- lished.	Pages.	Plates.
Annual Report:				
Part XV	1887	1891	LXIII+900	112
XVI	1888	1892	CXXVIII+902	90
XXVI	1900	1901	1-570	1+VII
XXVII	1901	1902	VI+844	37
XXVIII	1902	1904	III+549	88
Annual Bulletin				
Vol. XIX	1899	1901	VI+501	44+XXXIV
Vol. XX, first part	1900	1902	XV+524	52, 17+IV+XXXVIII
Vol. XX, second part	1900	1902	VIII+416	A+XII
Vol. XXI	1901	1902	VII+476	22, XLIV+A

PAMPHLET PUBLICATIONS.

Serial
No.

3. Report on the condition of the sea fisheries of the south coast of New England in 1871 and 1872, by Spencer F. Baird. Report for 1871-72, pp. 1-XLI. 1873.
21. Cheap fixtures for hatching of salmon, by Charles G. Atkins. Report for 1878, pp. 945-966 (including 15 figs.). 1880.
40. Popular extracts from the investigation of the commission for the scientific examination of the German seas, by H. A. Meyer and others. Report for 1879, pp. 525-557 (including 17 figs.). 1882.
41. List of dredging stations of the U. S. Fish Commission from 1871 to 1879, inclusive, with temperature and other observations, by Sanderson Smith and Richard Rathbun. Report for 1879, pp. 559-601. 1882.
62. Report of the Commissioner for the year 1880, by Spencer F. Baird. Report for 1880, pp. xvii-xlvi. 1883.
65. Report of the Commissioner for 1881, by Spencer F. Baird. Report for 1881, pp. xiii-lxxi. 1884.
70. Report on the construction and work in 1880 of the Fish Commission steamer *Fish Hawk*, by Z. L. Tanner. Report for 1881, pp. 3-53, plates i-xviii (including 3 figs.). 1884.
73. Annual report on the electric lighting of the U. S. F. C. steamer *Albatross*, December 31, 1883, by G. W. Baird. Bulletin for 1884, pp. 153-158 (including 8 figs.). 1884.
131. Report of operations at the Wytheville Station, Va., from January 1, 1885, to June 30, 1887, by Marshall McDonald. Report for 1886, pp. 793-800, plates i-vi. 1889.
137. Suggestions for the employment of improved types of vessels in the market fisheries, with notes on British fishing steamers, by J. W. Collins. Bulletin for 1888, pp. 175-192, plates xvi-xxvii. 1890.
138. Notes on the fishes collected at Cozumel, Yucatan, by the U. S. Fish Commission, with descriptions of new species, by Tarleton H. Bean. Bulletin for 1888, pp. 193-206, plates xxviii-xxix. 1890.
141. A report upon the fishes of Kalamazoo, Calhoun, and Antrim counties, Mich., by Charles H. Bollman. Bulletin for 1888, pp. 219-225. 1891.
142. Notes on the fishes from the lowlands of Georgia, with a description of a new species (*Opsopæodus bollmani*), by Charles H. Gilbert. Bulletin for 1888, pp. 225-229. 1891.
145. Report on the proposed introduction of the Jamaica mountain mullet into the United States, by Tarleton H. Bean. Bulletin for 1888, pp. 443-451. 1891.
151. The artificial propagation of sturgeon in Schleswig-Holstein, Germany. Bulletin for 1889, pp. 81-90. 1891.
163. The giant-scallop fishery of Maine, by Hugh M. Smith. Bulletin for 1889, pp. 313-335, plates cxii-cxvi. 1891.
172. Report of the operations of the U. S. Fish Commission schooner *Grampus* from March 15, 1887, to June 30, 1888, by J. W. Collins and D. E. Collins. Report for 1887, pp. 491-598, plates i-xvi. 1891.
174. On some Lake Superior entomostraca, by S. C. Forbes. Report for 1887, pp. 701-718, plates i-iv. 1891.
179. Report of distribution of fish and eggs from July 1, 1888, to June 30, 1889. Report for 1888, pp. 379-394. 1892.
181. Report of operations at the laboratory of the U. S. Fish Commission, Woods Hole, Mass., during the summer of 1888, by John A. Ryder. Report for 1888, pp. 513-522. 1892.
182. Notes on entozoa of marine fishes, with description of new species (part III), by Edwin Linton. Report for 1888, pp. 523-542, plates liii-lx. 1892.
183. On the anatomy of *Thysanocephalum crispum* Linton, a parasite of the tiger shark, by Edwin Linton. Report for 1888, pp. 543-556, plates lxi-lxvii. 1892.
186. Observations on the aquaria of the U. S. Fish Commission at Central Station, Washington, D. C., by William P. Seal. Bulletin for 1890, pp. 1-12 (including 2 figs.), plates i-iv. 1892.
189. Notes on a collection of fishes from the lower Potomac River, by Hugh M. Smith. Bulletin for 1890, pp. 63-72, plates xviii-xx. 1892.
191. Report upon the participation of the U. S. Fish Commission in the Centennial Exposition held at Cincinnati, Ohio, in 1888, by J. W. Collins. Report for 1888, pp. 869-885, plate xc. 1892.

192. Report of the Commissioner for fiscal year ending June 30, 1889, including the reports of the divisions of fish-culture, scientific inquiry, and fisheries, by Marshall McDonald. Report for 1888, pp. ix-cxxviii. 1892.
194. Report on an investigation of the fisheries of Lake Ontario, by Hugh M. Smith. Bulletin for 1890, pp. 177-215, plates XXI-L. 1892.
195. A report upon the fisheries of Iowa, based upon observations and collections made during 1889, 1890, and 1891, by Seth E. Meek. Bulletin for 1890, pp. 217-248. 1892.
196. Report of an examination of the rivers of Kentucky, with lists of the fishes obtained, by Albert J. Woolman. Bulletin for 1890, pp. 249-288, plate I. 1892.
197. Notes on the streams and fishes of Clinton County, Ky., with a description of a new darter, by Philip H. Kirsch. Bulletin for 1890, pp. 289-292 (including 1 fig.). 1892.
201. Observations on the hatching of the yellow perch, by S. G. Worth. Bulletin for 1890, pp. 331-334, plate LXI. 1892.
202. The physical and biological characteristics of the natural oyster grounds of South Carolina, by Bashford Dean. Bulletin for 1890, pp. 335-361, plates LXII-LXVIII. 1892.
203. The present methods of oyster-culture in France, by Bashford Dean. Bulletin for 1890, pp. 363-388 (including 2 figs.), plates LXXIX-LXXXVIII. 1892.
207. Description of a new sucker, *Pantosteus jordani*, from the Upper Missouri Basin, by Barton W. Evermann. Bulletin for 1892, pp. 51-56 (including 1 fig.). 1893.
211. Notes on a collection of fishes from the southern tributaries of the Cumberland River in Kentucky and Tennessee, by Philip H. Kirsch. Bulletin for 1891, pp. 259-267. 1893.
214. Report upon the European methods of oyster-culture, by Bashford Dean. Bulletin for 1891, pp. 357-406 (including 2 figs.), plates LXXV-LXXXVIII. 1893.
229. List of fishes collected at Sea Isle City, N. J., during the summer of 1892, by H. F. Moore. Bulletin for 1892, pp. 357-380. 1894.
230. Economic and natural-history notes on fishes of the northern coast of New Jersey, by Hugh M. Smith. Bulletin for 1892, pp. 365-380. 1894.
232. Notes on two hitherto unrecognized species of American white-fishes, by Hugh M. Smith. Bulletin for 1894, pp. 1-13, plate 1. 1894.
233. Extension of the recorded range of certain marine and fresh-water fishes of the Atlantic coast of the United States, by W. C. Kendall and Hugh M. Smith. Bulletin for 1894, pp. 15-21. 1894.
235. Report upon explorations made in Eel River Basin, in the northeastern part of Indiana, in the summer of 1892, by Philip H. Kirsch. Bulletin for 1894, pp. 31-41. 1894.
237. World's Fisheries Congress. Report of the secretary of the general committee, by Tarleton H. Bean. Bulletin for 1893, pp. 1-14. 1894.
240. The sea and coast fisheries, by Daniel T. Church. Bulletin for 1893, pp. 37-38. 1894.
241. Our ocean fishes and the effect of legislation upon the fisheries, by J. M. K. Southwick. Bulletin for 1893, pp. 39-45. 1894.
243. The relation of scientific research to economic problems, by G. Brown Goode. Bulletin for 1893, pp. 49-58. 1894.
246. The investigation of rivers and lakes with reference to fish environment, by B. W. Evermann. Bulletin for 1893, pp. 69-73. 1894.
250. Some observations concerning fish parasites, by Edwin Linton. Bulletin for 1893, pp. 101-126, plates 1-8. 1894.
253. The aquarium of the U. S. Fish Commission at the World's Columbian Exposition, by S. A. Forbes. Bulletin for 1893, pp. 143-158. 1894.
253. Description of the fresh and salt water supply and pumping plants used for the aquarium, by I. S. K. Reeves. Bulletin for 1893, pp. 159-161. 1894.
253. Observations and experiments on *Saprolegnia* infesting fish, by G. P. Clinton. Bulletin for 1893, pp. 163-172. 1894.
253. Report on a parasitic protozoan observed on fish in the aquarium, by Charles Wardell Stiles. Bulletin for 1893, pp. 173-190, plates 11, 12. 1894.
257. History and methods of white-fish culture, by Frank N. Clark. Bulletin for 1893, pp. 213-220. 1894.
260. Fish and fishing in British Guiana, by J. J. Quelch. Bulletin for 1893, pp. 237-240. 1894.
261. Fish-cultural investigations at St. Andrews Marine Laboratory, Scotland, by W. C. McIntosh. Bulletin for 1893, pp. 241-256. 1894.

261. Description of the marine hatchery at Dunbar, Scotland, by T. Wemyss Fulton. Bulletin for 1893, pp. 257-262. 1894.
262. The past, present, and future of the oyster industry of Georgia, by A. Oemler. Bulletin for 1893, pp. 263-272. 1894.
264. Breeding natural food artificially for young fish artificially hatched, by A. Nelson Cheney. Bulletin for 1893, pp. 277-279. 1894.
269. Recent experiments in sturgeon hatching on the Delaware River, by Bashford Dean. Bulletin for 1893, pp. 335-339 (including 1 fig.). 1894.
270. The fisheries of Canada, by L. Z. Joncas. Bulletin for 1893, pp. 341-348. 1894.
275. Fish nets: Some account of their construction and the application of the various forms in American fisheries, by C. H. Augur. Bulletin for 1893, pp. 381-388. 1894.
278. On pearls and the utilization and application of the shells in which they are found in the ornamental arts, as shown at the World's Columbian Exposition, by George Frederick Kunz. Bulletin for 1893, pp. 439-457, plates 18-41. 1894.
279. Report on a collection of fishes from the rivers of central and northern Mexico, by Albert J. Woolman. Bulletin for 1894, pp. 55-66, plate 2. 1894.
283. Report of the Commissioner for the fiscal year ending June 30, 1892, including the reports of the divisions of fish culture, scientific inquiry, and fisheries, by Marshall McDonald. Report for 1892, pp. vii-cciv. 1894.
292. Notes on fishes collected in Florida in 1892, by James A. Henshall. Bulletin for 1894, pp. 209-221. 1894.
293. Notes on a reconnaissance of the fisheries of the Pacific coast of the United States in 1894, by Hugh M. Smith. Bulletin for 1894, pp. 223-288. 1894.
294. Feeding and rearing of fishes, particularly trout, under domestication, by William F. Page. Bulletin for 1894, pp. 289-314. 1895.
295. Report upon the investigations in the Maumee River Basin during the summer of 1893, by Philip H. Kirsch. Bulletin for 1894, pp. 315-337. 1895.
296. A statistical report on the fisheries of the Middle Atlantic States, by Hugh M. Smith. Bulletin for 1894, pp. 339-467. 1895.
297. The fishes of the Colorado Basin, by Barton W. Evermann and Cloudsley Rutter. Bulletin for 1894, pp. 473-486. 1895.
297. A list of species of fishes known from the vicinity of Neosho, Mo., by Barton W. Evermann and W. C. Kendall. Bulletin for 1894, pp. 469-472. 1895.
298. Report of the Commissioner for the fiscal year ending June 30, 1893, including the reports of divisions of fish culture, scientific inquiry, and fisheries, by Marshall McDonald. Report for 1893, pp. 1-138. 1896.
301. A preliminary report upon salmon investigations in Idaho in 1894, by Barton W. Evermann. Bulletin for 1895, pp. 253-284. 1896.
302. Notes on an investigation of the menhaden fishery in 1894, with special reference to the food fishes taken, by Hugh M. Smith. Bulletin for 1895, pp. 285-302. 1896.
303. The fishes of the Neuse River Basin, by Barton W. Evermann and Ulysses O. Cox. Bulletin for 1895, pp. 303-310. 1896.
304. Notes on intensive pond culture at Sandfort, by S. Jaffé. Bulletin for 1895, pp. 311-316. 1896.
304. Notes on the rearing of yearling trout at Sandfort, by S. Jaffé. Bulletin for 1895, pp. 317-319. 1896.
304. Fish-cultural methods at the Agricultural School at Freising. Anonymous. Bulletin for 1895, pp. 320-321, plate 55. 1896.
304. The course of instruction of the Bavarian Fishery Association. Anonymous. Bulletin for 1895, pp. 321-324. 1896.
305. Report on a reconnaissance of the oyster-beds of Mobile Bay and Mississippi Sound, Alabama, by Homer P. Ritter. Bulletin for 1895, pp. 325-339, plates 56-63. 1896.
306. A list of fishes and mollusks collected in Arkansas and Indian Territory in 1894, by Seth Eugene Meek. Bulletin for 1895, pp. 341-349. 1896.
307. The sources of marine food, by James I. Peck. Bulletin for 1895, pp. 351-368. 1896, plates 64-71. 1896.
308. Contributions toward the improvement of the culture of salmonoids and crawfish in small water-courses, by Karl Wozelka-Iglau. Bulletin for 1895, pp. 369-378, plate 72. 1896.
309. A review of the history and results of the attempt to acclimatize fish and other water animals in the Pacific States, by Hugh M. Smith. Bulletin for 1895, pp. 379-472, plates 73-83. 1896.

310. Report upon the work of the U. S. Fish Commission steamer *Albatross* for the year ending June 30, 1893, by Z. L. Tanner. Report for 1893, pp. 305-341, plates 15-18. 1896.
311. Report of the representative of the U. S. Fish Commission at the World's Columbian Exposition, by Tarleton H. Bean. Report for 1894, pp. 177-196, plates 1-5. 1896.
312. Report upon ichthyological investigations in western Minnesota and eastern North Dakota, by Albert J. Woolman. Report for 1893, pp. 343-373, plate 19. 1896.
313. The food of the oyster, clam, and ribbed mussel, by John P. Lotsy. Report for 1893, pp. 375-386 (including 4 figs.). 1896.
314. Establishment of stations for the propagation of salmon on the Pacific coast, by John J. Brice. Report for 1893, pp. 387-392. 1896.
316. The Russian fur-seal islands, by Leonard Stejneger. Bulletin for 1896, pp. 1-148, plates 166. 1896.
317. Remarks on the movements and breeding grounds of the fur-seal, based on observations made while on the United States naval patrol of Bering Sea in 1894, by John J. Brice. Report for 1894, pp. 573-577. 1896.
319. The artificial propagation of the rainbow trout, by George A. Seagle. Bulletin for 1896, pp. 237-256, plates 88-94. 1896.
321. Report upon the operations of the U. S. Fish Commission steamer *Albatross* for the year ending June 30, 1894, by Z. L. Tanner and F. J. Drake. Report for 1894, pp. 197-278, plates 6-8. 1896.
322. Description of a closing tow net for submarine use at all depths, by C. H. Townsend. Report for 1894, pp. 279-282, plates 9, 10. 1896.
323. The whitefishes of North America, by Barton W. Evermann and Hugh M. Smith. Report for 1894, pp. 283-324, plates 11-28. 1896.
324. A report upon the fishes of the Missouri River Basin, by Barton W. Evermann and Ulysses O. Cox. Report for 1894, pp. 325-429. 1896.
325. A review of the foreign fishery trade of the United States, by Charles H. Stevenson. Report for 1894, pp. 431-571. 1896.
326. The ichthyological collections of the U. S. Fish Commission steamer *Albatross* during the years 1890 and 1891, by Charles H. Gilbert. Report for 1893, pp. 393-476, plates 20-35. 1896.
327. An annotated catalogue of the fishes known from the State of Vermont, by Barton W. Evermann and W. C. Kendall. Report for 1894, pp. 579-604.
328. A report upon the fishes of southwestern Minnesota, by Ulysses O. Cox. Report for 1894, pp. 605-616. 1896.
329. List of publications of the U. S. Commission of Fish and Fisheries from its establishment, in 1871, to February, 1896, by Charles W. Scudder. Report for 1894, pp. 617-706. 1896.
331. Report of the Commissioner for the fiscal year ending June 30, 1895, including the reports of the divisions of fish-culture, scientific inquiry, and fisheries, by Marshall McDonald. Report for 1895, pp. 1-123. 1896.
332. Report upon the investigations of the U. S. Fish Commission steamer *Albatross* for the year ending June 30, 1895 (abstract), by F. J. Drake. Report for 1895, pp. 125-168. 1896.
333. Notes on Biscayne Bay, Florida, with reference to its adaptability as the site of a marine hatching and experiment station, by Hugh M. Smith. Report for 1895, pp. 169-191. 1896.
334. The transplanting of eastern oysters to Willapa Bay, Washington, with notes on the native oyster industry, by C. H. Townsend. Report for 1895, pp. 193-202, plate 1. 1896.
335. Description of a new species of shad (*Alosa alabamae*) from Alabama, by Barton W. Evermann. Report for 1895, pp. 203-205. 1896.
336. A check-list of the fishes and fish-like vertebrates of North and Middle America, by David Starr Jordan and Barton Warren Evermann. Report for 1895, pp. 207-584. 1896.
338. Report of the representatives of the U. S. Fish Commission at the Cotton States and International Exposition at Atlanta, Ga., in 1895, by W. de C. Ravenel. Report for 1896, pp. 147-167 (including 3 figs.), plates 11-21. 1897.
339. Notes on the extension of the recorded range of certain fishes of the United States coast, by Hugh M. Smith and William C. Kendall. Report for 1896, pp. 169-176. 1897.
340. Notes on the food of four species of the cod family, by William C. Kendall. Report for 1896, pp. 177-186. 1897.

341. The fisheries of Indian River, Florida, by John J. Brice et al. Report for 1896, pp. 223-262, plates 22-60. 1897.
342. Report on the fish and fisheries of the coastal waters of Florida, by John J. Brice. Report for 1896, pp. 263-342. 1897.
343. Report of a survey of the oyster regions of St. Vincent Sound, Apalachicola Bay, and St. George Sound, Florida, by Franklin Swift. Report for 1896, pp. 187-221, plate 21. 1897.
344. Report of the Commissioner for the fiscal year ending June 30, 1897, including the reports of the divisions of fish-culture, scientific inquiry, and fisheries, by John J. Brice. Report for 1897, pp. i-CLXXI. 1898.
346. Artificial propagation of the Atlantic salmon, rainbow trout, and brook trout. Report for 1897, pp. 17-90 (including 14 figures), plates 11-29. 1897.
347. Artificial propagation of the black bass, crappies, and rock bass. Report for 1897, pp. 147-163 (including 2 figures), plates 47-50. 1897. Revised edition, 1900.
348. Notes on the edible frogs of the United States and their artificial propagation, by F. M. Chamberlain. Report for 1897, pp. 249-261 (including 6 figures). 1897.
349. Oysters and methods of oyster-culture, with notes on clam-culture, by H. F. Moore. Report for 1897, pp. 263-340 (including 6 figures), plates i-xviii. 1897.
351. The fishes of the Klamath River Basin, by Charles H. Gilbert. Bulletin for 1897, pp. 1-13 (including 6 figures). 1898.
353. The fishes found in the vicinity of Woods Hole, by Hugh M. Smith. Bulletin 1897, pp. 85-111 (including 1 figure), plate 3. 1898.
355. Report of observations made on board the U. S. Fish Commission steamer *Albatross* during the year ending June 30, 1896. Report for 1896, pp. 357-386. 1897.
356. Observations upon the herring and herring fisheries of the northeast coast, with special reference to the vicinity of Passamaquoddy Bay, by H. F. Moore. Report for 1896, pp. 387-442, plates 60-62. 1897.
357. The salmon fishery of Penobscot Bay and River in 1895 and 1896, by Hugh M. Smith. Bulletin for 1897, pp. 113-124, plates 4 and 5. 1898.
358. Descriptions of new or little-known genera and species of fishes from the United States, by Barton W. Evermann and William C. Kendall. Bulletin for 1897, pp. 125-133, plates 6-9. 1898.
359. Notes on the halibut fishery of the northwest coast in 1896, by A. B. Alexander. Bulletin for 1897, pp. 141-144. 1898.
360. The herring industry of the Passamaquoddy region, Maine, by Ansley Hall. Report for 1896, pp. 443-489. 1897.
361. Statistics of the fisheries of the interior waters of the United States, by Hugh M. Smith. Report for 1896, pp. 489-574. 1898.
362. Notes on the fisheries of the Pacific coast in 1895, by William A. Wilcox. Report for 1896, pp. 575-659. 1898.
363. Proceedings and papers of the National Fishery Congress. Bulletin for 1897, pp. 145-371. 1898.
364. Proceedings of National Fishery Congress. Bulletin for 1897, pp. 147-168. 1898.
365. Methods of plankton investigation in their relation to practical problems, by Jacob Reighard. Bulletin for 1897, pp. 169-175. 1898.
366. The importance of extended scientific investigation, by H. C. Bumpus. Bulletin for 1897, pp. 177-180. 1898.
367. The utility of a biological station on the Florida coast in its relations to the commercial fisheries, by S. E. Meek. Bulletin 1897, pp. 181-183. 1898.
368. Establishment of a biological station on the Gulf coast, by W. Edgar Taylor. Bulletin for 1897, pp. 185-188. 1898.
369. Some notes on American shipworms, by Charles P. Sigerfoos. Bulletin for 1897, pp. 189-191. 1898.
370. An economical consideration of fish parasites, by Edwin Linton. Bulletin for 1897, pp. 193-199. 1898.
371. The fish fauna of Florida, by B. W. Evermann. Bulletin for 1897, pp. 201-208. 1898.
372. The lampreys of central New York, by H. A. Surface. Bulletin for 1897, pp. 209-215, plates 10 and 11. 1898.
373. The protection of the lobster fishery, by Francis H. Herrick. Bulletin for 1897, pp. 217-224. 1898.
375. On the feasibility of raising sponges from the egg, by H. V. Wilson. Bulletin for 1897, pp. 241-245. 1898.

376. The Hudson River as a salmon stream, by A. Nelson Cheney. Bulletin for 1897, pp. 247-251. 1898.
377. A plea for the development and protection of Florida fish and fisheries, by James A. Henshall. Bulletin for 1897, pp. 253-255. 1898.
378. International protection for the denizens of the sea and waterways, by Bushrod W. James. Bulletin for 1897, pp. 257-263. 1898.
379. The restricted inland range of shad due to artificial obstructions, and its effect upon natural reproduction, by Charles H. Stevenson. Bulletin for 1897, pp. 265-271. 1898.
380. The green turtle and the possibilities of its protection and consequent increase on the Florida coast, by Ralph M. Munroe. Bulletin for 1897, pp. 273-274. 1898.
381. Some factors in the oyster problem, by H. F. Moore. Bulletin for 1897, pp. 275-284. 1898.
382. The oyster grounds of the west Florida coast; their extent, condition, and peculiarities, by Franklin Swift. Bulletin for 1897, pp. 285-287. 1898.
383. The oyster and oyster beds of Florida, by John G. Ruge. Bulletin for 1897, pp. 289-296. 1898.
384. The Louisiana oyster industry, by F. C. Zacharie. Bulletin for 1897, pp. 297-304. 1898.
385. The oyster bars of the west coast of Florida, their depletion and restoration, by H. A. Smeltz. Bulletin for 1897, pp. 305-308. 1898.
386. Notes on the fishing industry of eastern Florida, by John Y. Detwiler. Bulletin for 1897, pp. 309-312. 1898.
387. Oysters and oyster culture in Texas, by I. P. Kibbe. Bulletin for 1897, pp. 313-314. 1898.
388. The methods, limitations, and results of white-fish culture in Lake Erie, by J. J. Stranahan. Bulletin for 1897, pp. 315-319. 1898.
389. A brief history of the gathering of fresh-water pearls in the United States, by George F. Kunz. Bulletin for 1897, pp. 321-330. 1898.
390. The red-snapper fisheries; their past, present, and future, by Andrew F. Warren. Bulletin for 1897, pp. 331-335. 1898.
391. Some brief reminiscences of the early days of fish-culture in the United States, by Livingston Stone. Bulletin for 1897, pp. 337-343. 1898.
392. The relations between State fish commissions and commercial fishermen, by W. E. Meehan. Bulletin for 1897, pp. 345-348. 1898.
393. Possibilities for an increased development of Florida's fishery resources, by John N. Cobb. Bulletin for 1897, pp. 349-351. 1898.
394. The utility and methods of mackerel propagation, by J. Percy Moore. Bulletin for 1897, pp. 353-361. 1898.
395. The large-mouthed black bass in Utah, by John Sharp. Bulletin for 1897, pp. 363-368. 1898.
396. Florida fur farming, by J. M. Willson, jr. Bulletin for 1897, pp. 369-371. 1898.
399. Report on mackerel investigations in 1897, by J. Percy Moore. Report for 1898, pp. 1-22. 1899.
400. Reports on fishes obtained by the steamer *Albatross* in the vicinity of Santa Catalina Island and Monterey Bay, by Charles H. Gilbert. Report for 1898, pp. 23-29, plates 1 and 2. 1899.
401. Notes on the extent and condition of the alewife fisheries of the United States in 1896, by Hugh M. Smith. Report for 1898, pp. 31-43. 1899.
402. Report on the oyster beds of Louisiana, by H. F. Moore. Report for 1898, pp. 45-100, plate 3. 1899.
403. The shad fisheries of the Atlantic coast of the United States, by Charles H. Stevenson. Report for 1898, pp. 101-269. 1899.
404. List of fishes collected at the Revillagigedo Archipelago and neighboring islands, by David Starr Jordan and Richard Crittenden McGregor. Report for 1898, pp. 273-284, plates 4-7. 1899.
405. Report on investigations by the U. S. Fish Commission in Mississippi, Louisiana, and Texas in 1897, by Barton Warren Evermann. Report for 1898, pp. 285-310, plates 8-36. 1899.
407. Report upon exhibit of the U. S. Fish Commission at the Tennessee Centennial Exposition in 1897, by W. de C. Ravenel. Report for 1898, pp. 329-339, plate 37. 1899.
409. List of fishes known to inhabit the waters of the District of Columbia and vicinity, by Hugh M. Smith and Barton A. Bean. Bulletin for 1898, pp. 179-187. 1899.
410. Notes on a collection of tide-pool fishes from Kadiak Island in Alaska, by Cloudsley Rutter. Bulletin for 1898, pp. 189-192. 1899.

411. The southern spring mackerel fishery of the United States, by Hugh M. Smith. Bulletin for 1898, pp. 193-271. 1899.
412. Notice of a file-fish new to the fauna of the United States, by Hugh M. Smith. Bulletin for 1898, pp. 273-278, plate 64. 1899.
413. The pearly fresh-water mussels of the United States; their habits, enemies, and diseases, with suggestions for their protection, by Charles T. Simpson. Bulletin for 1898, pp. 279-288. 1899.
415. The peripheral nervous system of the bony fishes, by C. Judson Herrick. Bulletin for 1898, pp. 315-320. 1899.
416. The reappearance of the tile-fish, by Hermon C. Bumpus. Bulletin for 1898, pp. 321-333. 1899.
417. The preservation of fishery products for food, by Charles H. Stevenson. Bulletin for 1898, pp. 335-563, plates I-XLIII. 1899.
419. Check list of the fishes of Florida, by Barton Warren Evermann and William Converse Kendall. Report for 1899, pp. 35-103. 1899.
420. Statistics of the fisheries of the Gulf States, by division of statistics, C. H. Townsend, assistant in charge. Report for 1899, pp. 105-169. 1899.
421. Statistics of the fisheries of the South Atlantic States, by division of statistics, C. H. Townsend, assistant in charge. Report for 1899, pp. 171-227. 1899.
422. An inquiry into the feasibility of introducing useful marine animals into the waters of Great Salt Lake, by H. F. Moore. Report for 1899, pp. 229-250, plate 7. 1899.
423. A review of the fisheries in the contiguous waters of the State of Washington and British Columbia, by Richard Rathbun. Report for 1899, pp. 251-350, plates 8-16. 1899.
424. Experiments in photography of live fishes, by R. W. Shufeldt. Bulletin for 1899, pp. 1-5, plates 1-9. 1899.
425. Notes on the tide-pool fishes of California, with a description of four new species, by Arthur White Greeley. Bulletin for 1899, pp. 7-20. 1899.
426. The synaptas of the New England coast, by Hubert Lyman Clark. Bulletin for 1899, pp. 21-31, plates 10 and 11. 1899.
427. Descriptions of new genera and species of fishes from Porto Rico, by Barton Warren Evermann and Millard Caleb Marsh. Report for 1899, pp. 351-362. 1899.
428. Descriptions of two new species of darters from Lake Maxinkuckee, Indiana, by Barton Warren Evermann. Report for 1899, pp. 363-367. 1900.
429. The sturgeon fishery of Delaware River and Bay, by John N. Cobb. Report for 1899, pp. 369-380, plates 18-21. 1900.
430. Report of the Commissioner for the fiscal year ending June 30, 1899, including the reports of the divisions of fish culture, scientific inquiry, and fisheries, by George M. Bowers. Report for 1899, pp. vi-clxiii, plates i-xxix. 1900.
431. The gas-bubble disease of fish, and its cause, by F. P. Gorham. Bulletin for 1899, pp. 33-37, plate 12. 1900.
432. The clam problem and clam culture, by James L. Kellogg. Bulletin for 1899, pp. 39-44, plate 13. 1900.
433. Descriptions of new species of fishes from the Hawaiian Islands belonging to the families of Labridæ and Scaridæ, by Oliver P. Jenkins. Bulletin for 1899, pp. 45-65. 1900.
434. Rotatoria of the United States, with especial reference to those of the Great Lakes, by H. S. Jennings. Bulletin for 1899, pp. 67-104, plates 14-22. 1900.
435. A report of work on the protozoa of Lake Erie, with especial reference to the laws of their movements, by H. S. Jennings. Bulletin for 1899, pp. 105-114. 1900.
436. Notes on a collection of fishes from the rivers of Mexico, with description of 20 new species, by David Starr Jordan and John O. Snyder. Bulletin for 1899, pp. 115-147. 1900.
437. Notes on the Florida sponge fishery in 1899, by Hugh M. Smith. Bulletin for 1899, pp. 149-151. 1900.
438. Some chemical changes in the developing fish egg, by P. A. Levene. Bulletin for 1899, pp. 153-155. 1900.
439. The free-swimming copepods of the Woods Hole region, by William Morton Wheeler. Bulletin for 1899, pp. 157-192. 1900.
440. Observations on the life-history of the common clam, *Mya arenaria*, by James L. Kellogg. Bulletin for 1899, pp. 193-202. 1900.
441. The natural history of the starfish, by A. D. Mead. Bulletin for 1899, pp. 203-224, plates 23-26. 1900.
442. On the movements of certain lobsters liberated at Woods Hole, by Hermon C. Bumpus. Bulletin for 1899, pp. 225-230, plate 27. 1900.

443. Improvements in preparing fish for shipment, by Ralph W. Tower. Bulletin for 1899, pp. 231-235. 1900.
444. Report of a dredging expedition off the southern coast of New England, September, 1899, by Freeland Howe, jr. Bulletin for 1899, pp. 237-240. 1900.
445. The lobster fishery of Maine, by John N. Cobb. Bulletin for 1899, pp. 241-265, plates 28-32. 1900.
446. Fish parasites collected at Woods Hole in 1898, by Edwin Linton. Bulletin for 1899, pp. 267-304, plates 33-43. 1900.
447. Biological notes, No. 1. Bulletin for 1899, pp. 305-310. 1900.
448. The skeleton of the black bass, by R. W. Shufeldt. Bulletin for 1899, pp. 311-320, plate 44. 1900.
449. The chemical composition of the subdermal connective tissue of the ocean sunfish, by Erik H. Green. Bulletin for 1899, pp. 321-324. 1900.
451. Investigations of the aquatic resources and fisheries of Porto Rico, by the U. S. Fish Commission steamer *Fish Hawk* in 1899. General report, by B. W. Evermann; the fisheries and fish trade, by W. A. Wilcox; the fishes, by B. W. Evermann and M. C. Marsh. Bulletin for 1900, vol. 1, pp. 1-350, plates 1-52. 1900.
452. A method of recording egg development, for use of fish-culturists, by Claudius Wallich. Report for 1900, pp. 185-194, plate 1. 1900.
453. Statistics of fisheries of Middle Atlantic States by division of statistics, C. H. Townsend, assistant in charge. Report for 1900, pp. 195-310. 1900.
454. Statistics of the fisheries of the New England States, by division of statistics, C. H. Townsend, assistant in charge. Report for 1900, pp. 311-386. 1900.
455. The hydroids of the Woods Hole region, by C. C. Nutting. Bulletin for 1899, pp. 325-386. 1901.
456. Description of 15 new species of fishes from the Hawaiian Islands, by Oliver P. Jenkins. Bulletin for 1899, pp. 387-404. 1901.
457. Parasites of fishes of the Woods Hole region, by Edwin Linton. Bulletin for 1899, pp. 405-492, plates i-xxxiv. 1901.
458. The Mollusca of Porto Rico, by W. H. Dall and C. T. Simpson. Bulletin for 1900, vol. 1, pp. 351-524, plates 53-58. 1901.
459. The Brachyura and Macrura of Porto Rico, by Mary J. Rathbun. Bulletin for 1900, vol. 2, pp. 1-127, +*129-*137, plates 1 and 2. 1901.
460. The Anomuran collections made by the *Fish Hawk* expedition to Porto Rico, by J. E. Benedict. Bulletin for 1900, vol. 2, pp. 129-148, plates 3-6. 1901.
461. The Stomatopoda of Porto Rico, by R. P. Bigelow. Bulletin for 1900, vol. 2, pp. 149-160. 1901.
462. Report on Porto Rican Isopoda, by H. F. Moore. Bulletin for 1900, vol. 2, pp. 161-176, plates 7-11. 1901.
463. The Cirripedia collected near Porto Rico by the *Fish Hawk* expedition in 1898-99, by M. A. Bigelow. Bulletin for 1900, vol. 2, pp. 177-180. 1901.
464. The polychaetous Annelids of Porto Rico, by A. L. Treadwell. Bulletin for 1900, vol. 2, pp. 181-210. 1901.
465. Descriptions of two new leeches from Porto Rico, by J. Percy Moore. Bulletin for 1900, vol. 2, pp. 211-222, plates 12-13. 1901.
466. The nemertean of Porto Rico, by Wesley R. Coe. Bulletin for 1900, vol. 2, pp. 223-229. 1901.
467. The echinoderms of Porto Rico, by H. L. Clark. Bulletin for 1900, vol. 2, pp. 231-263, plates 14-17. 1901.
468. The Alcyonaria of Porto Rico, by C. W. Hargitt and C. G. Rogers. Bulletin for 1900, vol. 2, pp. 265-287, plates i-iv. 1901.
469. The stony corals of Porto Rican waters, by T. Wayland Vaughan. Bulletin for 1900, vol. 2, pp. 289-320, plates i-xxxviii. 1901.
470. Actinaria from the vicinity of Porto Rico, by J. E. Duerden. Bulletin for 1900, vol. 2, pp. 321-374, plates A and I to XII. 1901.
471. The sponges collected in Porto Rico in 1899 by the U. S. Fish Commission steamer *Fish Hawk*, by H. V. Wilson. Bulletin for 1900, vol. 2, pp. 375-411. 1901.
472. Dredging and other records of the U. S. Fish Commission steamer *Albatross*, with bibliography relative to the work of the vessel, compiled by C. H. Townsend. Report for 1900, pp. 387-562, plates i-vii. 1901.
473. The French sardine industry, by Hugh M. Smith. Bulletin for 1901, pp. 1-26, plates 1-8. 1901.
474. Biological notes, No. 2, from biological laboratory at Woods Hole. Bulletin for 1901, pp. 27-33. 1901.

475. Description of a new oceanic fish found off southern New England, by Carl H. Eigenmann. Bulletin for 1901, pp. 35-36. 1901.
476. The egg and development of the conger eel, by Carl H. Eigenmann. Bulletin for 1901, pp. 37-44. 1901.
477. Investigations into the history of the young squeteague, by Carl H. Eigenmann. Bulletin for 1901, pp. 45-51. 1901.
478. A new isopod parasitic on the hermit crab, by Millet T. Thompson. Bulletin for 1901, pp. 53-56, plates 9-10. 1901.
479. The plants of western Lake Erie, with observations on their distribution, by A. J. Pieters. Bulletin for 1901, pp. 57-79, plates 11-20. 1901.
480. The Leptocephalus of the American eel and other American Leptocephali, by C. H. Eigenmann and C. H. Kennedy. Bulletin for 1901, pp. 81-92. 1901.
483. Notes on the fishes and mollusks of Lake Chautauqua, New York, by B. W. Evermann and E. L. Goldsborough. Report for 1901, pp. 169-175. 1902.
484. The foraminifera of Porto Rico, by James M. Flint. Bulletin for 1900, pp. 415, 416. 1901.
485. Description of a new species of blenny from Japan, by Hugh M. Smith. Bulletin for 1901, pp. 93, 94. 1902.
486. List of species of fishes known to occur in the Great Lakes or their connecting waters, by Barton Warren Evermann. Bulletin for 1901, pp. 95, 96. 1902.
487. Preservation of fishery products by drying and dry-salting, by Charles H. Stevenson. Bulletin for 1898, pp. 389-424. 1902.
488. Preparation of fish eggs for food, by Charles H. Stevenson. Bulletin for 1898, pp. 541-548. 1902.
489. Refrigeration, or preservation by low temperature, by Charles H. Stevenson. Bulletin for 1898, pp. 358-388. 1902.
490. Preservation of fishery products by smoking, by Charles H. Stevenson. Bulletin for 1898, pp. 474-506. 1902.
491. Notes on the tagging of four thousand adult cod at Woods Hole, Mass., by Hugh M. Smith. Report for 1901, pp. 193-208. 1902.
492. Notes on the silversides of the genus *Menidia* of the east coast of the United States, with descriptions of two new subspecies, by W. C. Kendall. Report for 1901, pp. 241-267. 1902.
493. Note on the Scotch methods of smoking haddocks, by Hugh M. Smith. Report for 1901, pp. 269-271. 1902.
494. Notes on the fishes of Lake Ontario. An annotated list of the fishes known to occur in Lake Champlain and its tributary waters. An annotated list of the fishes known to occur in the St. Lawrence River. By B. W. Evermann and W. C. Kendall. Report for 1901, pp. 209-240. 1902.
495. A report on fishes collected in Mexico and Central America, with notes and descriptions of five new species, by B. W. Evermann and E. L. Goldsborough. Bulletin for 1901, pp. 137-159. 1902.
496. The organic constituents of the scales of fish, by E. H. Green and R. W. Tower. Bulletin for 1901, pp. 97-102. 1902.
497. The reactions of copepods to various stimuli and the bearing of this on daily depth migrations, by G. H. Parker. Bulletin for 1901, pp. 103-123. 1902.
498. The gas in the swim-bladder of fishes. Biliary calculi in the squeteague. By R. W. Tower. Bulletin for 1901, pp. 125-135, plate xxi. 1902.
499. Description of a new species of shad (*Alosa ohioensis*), with notes on other food-fishes of the Ohio River, by Barton Warren Evermann. Report for 1901, pp. 273-288. 1902.
500. The reproductive period in the lobster, by Francis H. Herrick. Bulletin for 1901, pp. 161-166. 1902.
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502. Marine protozoa from Woods Hole, by Gary N. Calkins. Bulletin for 1901, pp. 413-468. 1902.
503. Notes on a species of barnacle (*Dichelaspia*) parasitic on the gills of edible crabs, by Robert E. Coker. Bulletin for 1901, pp. 399-412. 1902.
504. The fishes and fisheries of the Hawaiian Islands. A preliminary report, by D. S. Jordan and B. W. Evermann. Commercial fisheries of the Hawaiian Islands, by J. N. Cobb. Report for 1901, pp. 353-499, plates 21-27. 1902.
505. Notes on the fisheries of the Pacific coast in 1899, by William A. Wilcox. Report for 1901, pp. 501-574, plates 28, 29. 1902.
506. Statistics of fisheries of the Great Lakes. Report for 1901, pp. 575-657. 1902.
507. Statistics of the fisheries of the Mississippi River and tributaries. Report for 1901, pp. 659-740. 1902.

508. The Pan-American Exposition. Report of representative of the U. S. Fish Commission, by W. de C. Ravenel. Report for 1901, pp. 289-351, plates 6-20. 1902.
509. Notes on the boats, apparatus, and fishing methods employed by the natives of the South Sea Islands, and the results of fishing trials by the *Albatross*, by A. B. Alexander. Report for 1901, pp. 741-829, plates 30-37. 1902.
511. Observations on the herring fisheries of England, Scotland, and Holland, by Hugh M. Smith. Bulletin for 1902, pp. 1-16, plates 1 and 2. 1903.
512. Japanese oyster culture, by Bashford Dean. Bulletin for 1902, pp. 17-37, plates 3-7. 1903.
513. The habits and culture of the black bass, by Dwight Lydell. Bulletin for 1902, pp. 39-44, plate 8. 1903.
514. Hearing and allied senses in fishes, by G. H. Parker. Bulletin for 1902, pp. 45-64, plate 9. 1903.
515. Natural history of the quinnat salmon. A report on investigations in the Sacramento River, 1896-1901, by Cloudsley Rutter. Bulletin for 1902, pp. 65-141, plates 10-18. 1903.
516. Notes on fishes from streams and lakes of northeastern California not tributary to the Sacramento Basin, by Cloudsley Rutter. Bulletin for 1902, pp. 145-148. 1903.
517. Breeding habits of the yellow cat-fish, by Hugh M. Smith and L. G. Harron. Bulletin for 1902, pp. 151-154. 1903.
518. The destruction of trout fry by hydra, by A. E. Beardsley. Bulletin for 1902, pp. 157-160. 1903.
519. Artificial propagation of the salmon of the Pacific coast. Revised edition of Manual of Fish Culture, pp. 1-15, plates 3-10. 1903.
520. Artificial propagation of the lake trout, grayling, and white-fish. Revised edition of Manual of Fish Culture, pp. 91-120, plates 30-39. 1903.
521. Artificial propagation of the shad and pike perch. Revised edition of Manual of Fish Culture, pp. 121-145 and 165-179, plates 40-46 and 51-52. 1903.
522. Artificial propagation of marine species of fishes. Revised edition of Manual of Fish Culture, pp. 195-238, plates 54-63. 1903.
523. Descriptions of new genera and species of fishes from the Hawaiian Islands, by D. S. Jordan and B. W. Evermann. Bulletin for 1902, pp. 161-208. 1903.
524. Report of the Commissioner for the year ending June 30, 1902, including the reports of the divisions of fish culture, scientific inquiry, and fisheries, by George M. Bowers. Report for 1902, pp. 1-160, plates 1-5. 1903.
525. Descriptions of a new genus and two new species of fishes from the Hawaiian Islands, by David Starr Jordan and Barton Warren Evermann. Bulletin for 1902, pp. 209-210. 1903.
526. The fresh-water fishes of western Cuba, by Carl H. Eigenmann. Bulletin for 1902, pp. 211-236, plates 19-21. 1903.
527. The organ and sense of taste in fishes, by C. Judson Herrick. Bulletin for 1902, pp. 237-272. 1903.
529. The plankton algae of Lake Erie, with special reference to the *Chlorophyceae*, by Julian W. Snow. Bulletin for 1902, pp. 369-394, plates i-iv. 1903.
530. Description of a new species of darter from Tippecanoe Lake, by William J. Moenkhaus. Bulletin for 1902, pp. 395-398. 1903.
531. Notes on some fresh-water fishes from Maine, by W. C. Kendall. Bulletin for 1902, pp. 353-368. 1903.
532. Habits of some of the commercial cat-fishes, by W. C. Kendall. Bulletin for 1902, pp. 399-409. 1903.
533. A more complete description of *Bacterium truttae*, by M. C. Marsh. Bulletin for 1902, pp. 411-416, plates i and ii. 1903.
534. Report on collections of fishes made in the Hawaiian Islands, with descriptions of new species, by Oliver P. Jenkins. Bulletin for 1902, pp. 417-511, plates i-iv. 1903.
535. The sponge fishery of Florida in 1900, by J. N. Cobb. Report for 1902, pp. 161-175, plates 6-9. 1903.
536. Aquatic products in arts and industries, by C. H. Stevenson. Report for 1902, pp. 177-279, plates 10-25. 1903.
537. The utilization of the skins of aquatic animals, by C. H. Stevenson. Report for 1902, pp. 281-352, plates 26-38. 1903.
538. List of common names of the basses and sun-fishes, by Hugh M. Smith. Report for 1902, pp. 353-366. 1903.
539. The fisheries and fish trade of Porto Rico, by W. A. Wilcox. Report for 1902, pp. 367-395. 1903.
540. Statistics of the fisheries of the Middle Atlantic States. Report for 1902, pp. 433-540. 1903.

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541. Records of dredging and other collecting stations of the U. S. Fish Commission steamer *Albatross* in 1901 and 1902. Report for 1902, pp. 397-432. 1903.
542. Isopods collected at the Hawaiian Islands by the U. S. Fish Commission steamer *Albatross*, by Harriet Richardson, Ph. D. Bulletin for 1903, pp. 47-54. 1903.
543. Birds of Laysan and the Leeward Islands, Hawaiian group, by Walter K. Fisher. Bulletin for 1903, pp. 1-39, plates 1-10. 1903.
544. Notes on a porpoise of the genus *Prodelphinus* from the Hawaiian Islands, by Frederick W. True. Bulletin for 1903, pp. 41-45, plates 1 and 2. 1903.
546. A catalogue of the shore fishes collected by the steamer *Albatross* about the Hawaiian Islands in 1902, by John Otterbein Snyder. Bulletin for 1902, pp. 513-538, plates 1-13. 1904.
547. Notes on fishes collected in the Tortugas Archipelago, by David Starr Jordan. Bulletin for 1902, pp. 539-544, plates 1 and 2. 1904.
548. Report of the Commissioner for the year ending June 30, 1903, including the reports of the divisions of fish culture, scientific inquiry, and fisheries, by George M. Bowers. Report for 1903, pp. 1-122 + I-III. 1904.
549. Records of the dredging and other collecting and hydrographic stations of the U. S. Fisheries steamer *Albatross* in 1903, by Franklin Swift, compiled by Harry C. Fassett. Report for 1903, pp. 123-134. 1904.
550. The echinoderms of the Woods Hole region, by Hubert Lyman Clark. Bulletin for 1902, pp. 545-576, plates 1-14. 1904.

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