

GENERAL INDEX.

	Page.
Adams, A. C., and W. C. Kendall. Investigation of the Fishing Grounds off the West Coast of Florida.....	312
Bean, Tarleton H. The Salmon and Salmon Rivers of Alaska, with notes on the conditions, methods, and needs of the Salmon Fisheries.....	208
Gilbert, Charles H. Explorations made in Alabama during 1889, with notes on the fishes of the Tennessee, Alabama, and Escambia Rivers.....	159
Henshall, James A. Report upon a Collection of Fishes made in Southern Florida during 1889.....	389
Jordan, David Starr. Explorations in Colorado and Utah during the summer of 1889, with an account of the fishes found in each of the river basins examined.....	37
Jordan, David Starr. A reconnoissance of the streams and lakes of the Yellowstone National Park, Wyoming, in the interest of the U. S. Fish Commission.....	63
Meek, Seth Eugene. Explorations made in Missouri and Arkansas during 1889, with an account of the fishes observed in each of the river basins examined.....	141
Smith, Hugh M. The Giant Scallop Fishery of Maine.....	335

{ NOTE.—The following index contains general references to the entire volume; more detailed }
 indexes to the papers in the above list will be found at the pages indicated. }

	Page.			Page.
Abyles.....	412		Benedict, J. E.....	317, 327, 330
Adams, A. C.....	289, 371, 394		Beroe.....	412
Alabama explorations, report on.....	143		Black Rock.....	285
Alabama River fishes.....	143		Blob.....	5, 22, 23, 42, 53, 55, 59
Alamitos Bay, Cal.....	95, 97		Blackfish.....	209
Alaska salmon and salmon rivers.....	165		Black Will.....	209
<i>Albatross</i>	97, 281, 282, 284, 286		Black Harry.....	209
dredged pearl shells.....	93		Bothriocephalus.....	65
investigations in 1889.....	279-288		Bony-tail.....	22, 24, 27
Alexander, A. B.....	93		Booth, F. D.....	337, 354
Algodones Lagoons.....	97		Boston Society of Natural History.....	210
<i>Allena L. Gray</i> , schooner.....	323		Boutelle, Capt. FA.....	337, 355
Amak Island.....	280		Brachyura, Mollusca, and Fishes, lists of.....	303-310
Anaheim Bay.....	96		Bradly, F. H.....	338
Annemessex River, Little.....	105		Bristol Bay, description of.....	279
Anomia ephippium.....	476		fishing grounds.....	279-288
Arkansas explorations, report on.....	113		Brooks, Prof. W. K.....	393
Artificial propagation of sea bass.....	209		Brooks, W. K., report upon zoölogical col- lections made by the <i>Grampus</i>	411-412
Atlanta.....	412		Bull-head.....	24, 29
Atwater, Prof. W. O.....	330			
Baird Bank.....	287		Callinectes hastatus.....	104
Bayley, W. B.....	392		Canoes, crab.....	106
Bay of Mulege pearls.....	93		Cape Constantine.....	285
Bean, Tarleton H., on Alaskan salmon.....	165		Cape Grey.....	283
Beaver-dam obstruction.....	45, 57		Cape Peirce.....	286

	Page.		Page.
Cape Seniavin.....	283	Coregonus fera.....	99, 101, 361
Carpenter, Mr.....	93	Cottus bairdi.....	352
Carp in Colorado.....	6	Crab boats.....	106
pond in Salt Lake Basin.....	30	buckler.....	104
Carrington, Campbell.....	338, 343	buster.....	104
Castine Packing Company.....	319	comer.....	104
Catfishes desired in Colorado.....	6, 25, 35	dealers.....	108
Catostomus ardens.....	65, 77, 339, 343, 352	dip-nets.....	107
teres.....	359	dredge.....	106
Cavolina tridentata.....	412	mortality.....	108
Chesapeake oysters in deep water.....	161	paper-shell.....	104
Clark's Point.....	284	peeler.....	104
Carinaria cymbium.....	412	fishery.....	109, 110
Chestakof Island.....	283	Crab fishery, condition of.....	105
Chipman, S. and D.....	463	statistics.....	111
Chub.....	20, 33, 34	of Crisfield.....	103
Chubs destroy trout.....	6	Crab fishing grounds.....	105, 110
eaten by trout.....	60	season.....	106
of Yellowstone Park.....	46	Crab fleet.....	107
Clams taken in deep water.....	163	floats.....	108
Cliona sulphurea.....	318	long-comer.....	104
Clio virgula.....	412	markets.....	109
Coal mine in Herendeen Bay.....	282	meat, preparation of.....	111
Coast from Port Möller to Kuskokwim		natural history of.....	104
River.....	283	shedder.....	104
Unimak Pass to Port Möller.....	280	shedding its shell.....	104
Cockles in Alamitos Bay.....	95	short-comer.....	104
Codfish, abundance of.....	287	yield.....	107
banks of Bristol Bay, extent.....	287	Crabs, abundance of.....	106
enemies of.....	287	capture of.....	106, 110
parasites of.....	287	disposition of.....	107
Collection of fishes made in southern Flor-		hard.....	110
ida, by James A. Henshall, M. D.....	371-389	nocturnal in habits.....	107
Collins, Capt. J. W.....	106, 314, 329, 332	shipment of.....	109
Collins, J. W., notes on the oyster fishery		prices of.....	108, 109, 110
of Connecticut.....	461-497	Crepidula fornicata.....	476
Colorado described.....	3	Crisfield crab fishery.....	103
explorations.....	1	Croaker Strait.....	95
Conley, F. S.....	394	Crooked Island.....	285
Constituents of certain mollusks.....	331	Crystal Falls.....	55
Contribution to the life history of <i>Dibothrium</i>		Ctenophore.....	412
<i>cordiceps</i> Leidy, a parasite infesting the		Cyclosalpa.....	411
trout of Yellowstone Lake.....	337-358	Cymbuliopsis calceola.....	412
Introduction.....	337	Cyprinodon.....	99
Bibliography.....	337-339	variegatus.....	101, 102, 361
Larval stage.....	339-343	excrescences on.....	99
Adult stage.....	344-348	Cyprinus erythrophthalmus.....	99
Remarks on cestods.....	348-350	leuciscus.....	99
Reasons for regarding the pelican as the		rutilus.....	99
final host of <i>D. cordiceps</i>	350, 351	Dall, Prof. Wm. H.....	315
Considerations relating to the parasitism		Dammeron marshes.....	105
among the trout of Yellowstone Lake.....	351-355	Decker, Peter.....	465
Remedy.....	355, 356	Dibothria from Yellowstone Park.....	65
Explanation of plates.....	357, 358		

	Page.		Page.
Dibothrium	65, 66, 73	Fishes of Alabama and Tennessee	143
cordiceps	66, 70, 72, 78, 337-358	Colorado and Utah	1
anatomy of	73, 346	Missouri and Arkansas	113
calcareous bodies of	74	<i>Fish Hawk</i>	318
distribution of	339	Fish in hot water	44
superficial characters	344	Fishing grounds of Bristol Bay	279-288
muscles of	73	Fish parasites	65
reproductive organs of	74	Flounders in Bering Sea	288
vessels of	73	Forbes, Edward	484
young of	75	Forbes, Prof. S. A.	48, 337
ligula	65, 66	Frog, red-bellied	58
rugosum	75	Fungoid mass on minnow	99
Diesing	65	Gammarus in Twin Lakes	9
Dimick, F. F.	334	Gardiner River water analyzed	45
Diphyes	412	German Fishery Association circular	85, 87
Diving suits for pearls	92	Giant Scallop Fishery of Maine	313-335
Dogfish destroy trout	26	Gilbert, Charles H.	93, 310
Dohrn, Mr.	81	on oyster-planting	95
Doliolum, n. sp.	411	report by	143
Donnadieu	65	Goode, Prof. G. Brown	391
Duchamp	65	Gott, L. F.	313, 318
		<i>Grampus</i>	289, 371
Earll, R. Edward	364, 365	Grayling	46, 49, 50
Echinorhynchus from trout	76	Gray, S. D.	313, 317, 327
Edwards, Vinal N.	102, 209	Gregarinidæ	99
Eel, new species	310	Green, Seth	81
Ekuk Village	284, 285	Gulf of California pearl fishery	91
Elsner, B.	82, 86, 87, 89, 90	Hagemeister Island	285
Embryology of the Sea Bass	209-277	Hagemeister Channel	286
Segmentation	210	Hague Channel	281
Formation of the periblast	215	Hahn, E. E.	394
Invagination	218	Halibut on Baird Bank	288
Notochord; mesoderm; entoderm	222	Hannahills	209
Formation of the alimentary canal	230	Hansen, Friedrich	88
Neural chord; surface ectoderm; eye	237	Hatching-box for sturgeon	84, 88
Ear; branchial sense organ; lateral line	244	Hayden, Dr. F. V.	337, 352
Organs formed from the mesoderm	253	Heart Lake fishes	60
Heart; aorta; subnotochordal rod	258	Headquarters Creek	95
General morphological questions	260	Heath, W. W. A.	313, 317, 320, 327
List of papers referred to	271-272	Hedalgo, Pablo	94
Common reference letters used in the figures	272, 273	Henshall, Dr. James A.	289, 303, 371
Explanation of plates	274-277	Herendeen Bay entrance	281
Entozoa from Yellowstone Park	65	Herring, Mountain	34
Escambia River fishes	143	Heteropoda	412
Evans, Jeremiah	94	Hidalgo, Señor	92
Excrescences on short minnow	99	High Island	285
		Hot water not fatal to fish	58
False Bay	97	Hofer, Elwood	337, 353
Feddersen, P.	90	Howell, E. S.	364, 365, 369, 370
Fewkes, Dr. J. Walter	210	Hubbard, Prof. J. S.	397
Firehole River water analyzed	45	Idyopsis	412
Firoidia desmaresti	412	Ingersoll, E.	319, 491
		Irrigating ditches destroy trout	5, 19, 30

	Page.		Page.
Itzehoe Sturgeon Fishery Association	81	Linton, Edwin	337
Izenbek Bay	280	on dibothria	65
Jackson, Herman	81	on excrescences	99
<i>John Hancock</i> , schooner	93	on protozoan parasites	359
Johnston Channel	282	Lockwood, W. F.	465
Jones, William A.	338	Loch Leven trout in Firehole River	59
Jordan, Dr. David S. 41, 65, 72, 289, 340, 343, 359, 372	372	Los Bolsos Creek	96
explorations by	1	Lower Algodones Lagoon	97
reconnaissance by	41	Lucioperca	99
Kelly, John E.	313	Lunt, F. W.	313, 318
Kendall, W. C.	289, 371	Lynch, William H.	392, 394
King-crab Fishery of Delaware Bay	363-370	Lynde & Hough	93
Introduction	363	Magie, Prof. Wm. F.	392, 393
Habits, reproduction, etc	363-364	report upon atmos-	
Fishing season	364	pheric electricity	408-410
Fishing centers in New Jersey	364	Margelis, sp.	412
Apparatus and methods	364-366	Mark, Dr. E. L.	102
Decrease in abundance of crabs	366-367	Marks, A.	81
Output in New Jersey	367	Maxwell, John	392
Fishery in Delaware	367-368	Marsh, Charles L.	163, 329
Output in Delaware	368	McCormick, L. M.	359
Fertilizer factories	368-369	McDonald, Hon. Marshall	209, 337, 391
Prices of crabs	369	McNeill, Prof. Malcolm	392
Statistical data	369-370	Meduse	412
Khudiakof Islands	280	Meek, Seth Eugene, report by	113
Khudubin Islands	281	Meleagrina margaritifera	92
Köser, Mr.	82	Meteorological conditions of Bristol Bay	283
Kuhnerti, Mr.	87	Miller, N. B.	95
Kunners, crab	106	Miller's Thumb	5, 42, 53, 59
Kuskokwim River	286	Mine Harbor	281
Lake Abundance	55	Minnow	28
Landon, John	105	excrescences on	99
Lau, J.	82, 83, 88, 89	fungus	99
Leidy, Dr. Joseph, quoted	338	Leather-side	32
Leuciscus atrarius	48, 352	mountain	5
hydrophlox	48	parasites on	102
the generic name	20	Silver-side	32
Libbey, Prof. Wm., report by	391	Minnows of Yellowstone Park	46
Life history of a trout parasite	337-358	Missouri explorations, report on	113
Ligula monogramma	65, 66	Mohr, J.	83, 87, 88, 89
calcareous bodies of	71	Mother-of-pearl	92
catostomi	66, 70, 73, 77	Moxostoma macrolepidotum	359
from trout	72	Mud Creek	95
digramma	65	Mullet	31, 35
histology of	67	Mya arenaria	331
muscles of	68	Mytilus edulis	318
remarks on	65, 66	Myxospores	101
reproductive organs of	71	Naknek River	284
simplicissima	65, 66	Nematods from trout	76
vascular system of	69	Newport Bay, Cal.	95, 96, 97
Ligulae from suckers	65	oysters	96
		New San Gabriel River	95, 96
		Nichol's Hills	284

	Page.
Northwest Cape of Unimak	280
Notice of the occurrence of Protozoan Parasites (psorosperms) on Cyprinoid Fishes in Ohio. By Edwin Linton	359-362
Notropis megalops	359
Noturus miurus	359
Nushagak Packing Company	285
Nushagak River	284
On Yiek Company	93
Oyster beds in deep water	161, 163
Gulf of California	97
Oyster-planting in southern California	95, 97
Oysters of Gulf of California	98
Oyster tongs for deep water	161, 162
improved form of	161
Pancreitius, Dr	85, 86
Pearl-divers' methods	91
perils	93
Pearl fishery, Gulf of California	91
Lower California	93
fleet	92
Pearl-fishing season	91
Pearl oyster	92
Pearls	92
Pearl-Shell Company	91, 92
Pearl, valuable	94
Pecten brunneus	314
clintonius	314
fuscus	314
irradians	314
islandicus	314, 319, 476
magellanicus	314, 319
principoides	314
tenuicostatus	314
Pelagia cyanella	412
Pelecanus erythrorhynchus	344
Perenyi's fluid	210
Physical investigations off the southern coast of New England, made during the summer of 1889 by the U. S. Fish Commission schooner <i>Grampus</i>	391-459
Purpose and plan of the investigation	391-393
Description of the <i>Grampus</i>	393-394
Appliances used in the work	395-397
The sounding apparatus	394-395
Meteorological instruments	395-396
Instruments for serial temperature observations	396
Instruments for specific-gravity observations	397
Instrumental corrections, reduction of observations, etc.	397-398

	Page.
Physical investigations, etc.—Continued.	
Discussion of the records	399-407
Manner of keeping the records	399
The meteorological records	399-407
Report upon atmospheric electricity, by W. F. Magie	408-410
Report upon the zoölogical collections, by W. K. Brooks	411-412
Record of serial temperatures and densities	413-427
Tables of meteorological records	428-450
Tables of water-temperature curves	451-459
<i>Pinnotheres maculatum</i>	318
<i>ostreum</i>	318
Port Haiden	283
Polar capsules of Bütschli	100
Port Möller entrance	281
Port Möller, Herendeen Bay and vicinity	281
Programnoi Volcano	280
Protection Point pilot station	284
Protozoans, parasitic	99, 359
Psorospermia, bibliography of	102
Psorosperms causing excrescences	99, 101
filaments of	101
Pteropoda	412
Pyrosoma	411, 412
Rainbow trout in Gibbon River	58
<i>Rana septentrionalis</i>	58
Rathbun, Richard	318, 366
Rettger, Louis	372
Rhizophysa	412
<i>gracilis</i>	412
Rockwood, Prof. C. G.	392
Roelker, Passed Assistant Engineer C. R., quoted	282
Round Island	285
Round-Tail	6, 22, 24, 27
Rogers, James B.	392, 394
Rowe, H. C.	467
Ryder, Prof. John A.	485
Salario, S. Z.	93
<i>Salmo mykiss</i>	65, 72, 78, 79, 339, 340, 344, 352
Salmon and salmon rivers of Alaska	165
fisheries of Alaska	165
land-locked	6
white (<i>Ptychocheilus</i>)	22, 24, 28
Salpa	411, 412
<i>caboti</i>	411
<i>clotho</i>	411
<i>n. sp.</i>	411
<i>pinnata</i>	411
San Joaquin Bay	96
Santa Ana River	96

Remnant

	Page.		Page.
Savin, Napoleano	94	The Twins	285
Scallop, anatomy of	315	Tittman, O. H.	397
Scallops in Alamitos Bay	95	Tongs for deep-water oysters	161, 162, 163
Schleswig-Holstein Fishery Association	82	Townsend, Capt. C. H.	363
Sea bass	209	Townsend, Charles H., on pearl fishery	91
artificial propagation of	209	Trout, Arkansas River	15
Seal Islands	283	black-spotted	50
Serranus atrarius	209	brook	6, 23
Silver Cord	55	Colorado River	14
Shrimp of Great Salt Lake	31	cut-throat	14
Siphonophoræ	412	exterminated	10
Slime Bank	287	food of	54
Smith, Hugh M., on crab-fishery	103	green-back	12
giant scallop fishery		hatchery at Los Pinos	26
of Maine	313	in geyser water	44
king-crab fishery of		Lake Tahoe	14
Delaware Bay	363-370	parasites	50, 51, 65, 337-358
oyster tongs	161	planted in Gardiner River	57
Soft-crab fishery	104, 105	Glen Creek	58
Söth, Mr.	83	Lava Creek	57, 61
Stearns, Dr. R. E. C., quoted	315	Yellowstone Park	46
Stemann, Mr. von	85, 90	rainbow	6
Stepnetch, Mr.	87	red-throated	46, 50
Stephenson, Charles H.	461	Rio Grande	14, 22
St. George's Island, Md.	163	Rocky Mountain	46, 50
Solomon's Island, Md.	163	Upper Missouri	14
Sphagebranchus kendalli, new species of eel.	310	Utah Lake	14, 34
Stör River sturgeon experiments	81	Waha Lake	15
Sturgeon culture, difficulties of	88, 89, 90	yellow-finned	11, 15
need of	84	Yellowstone Park	46
report on	85, 87	Twinned vesicles of Balbiani	100
eggs, number of	84	Ugashik River	283
transported	89	Upper Algodones Lagoon	97
habits of	86	Utah explorations	1
hatching, method of	90	Venus mercenaria	163
hatching on Hudson River	81	Verrill, Prof. A. E., quoted	314, 315
in captivity	83	Vogell, J. M.	313, 317, 320, 323, 327, 332
nets, meshes of	84	Walrus group	285
planted in the Elbe	85	Whitefish	34
propagation in Germany	81	mountain	49
sea life of	86	planted in Twin Lakes	59
Sucker	31, 34	Yellowstone Park	46
blue-head	24, 27	Yellowstone River	60
flannel-mouth	24, 26	Wilson, Henry V.	209
hump-back	24, 26	Winslow, Lieut. Francis	313
mountain	31	Witch Creek fishes	60
parasites	52, 60, 65	Wonson, C. H.	394
razor-back	24, 26	Worm parasitic in sucker	47, 66
red horse	31	Yaqui River	97, 98
webbug	31, 34	Yellowstone Park Dibothria	65
Suckers destroy trout	5	described	43
of Yellowstone Park	46	explorations	41
Tanner, Lieut. Commander Z. L.	279	waterfalls	44
Tennessee River fishes	143	Zschokke, Dr. F.	66, 101