

LIST OF ILLUSTRATIONS.

	Facing page.
A REVISION OF MALACLEMYS, A GENUS OF TURTLES:	
Plate I. <i>Malaclemmys centrata concentrica</i>	3
II. <i>Malaclemmys centrata</i>	20
III. <i>Malaclemmys centrata</i>	20
IV. <i>Malaclemmys centrata concentrica</i>	20
V. <i>Malaclemmys centrata concentrica</i>	20
VI. <i>Malaclemmys macrospilota</i>	20
VII. <i>Malaclemmys macrospilota</i>	20
VIII. <i>Malaclemmys littoralis</i>	20
IX. <i>Malaclemmys littoralis</i>	20
X. (1) <i>Malaclemmys centrata</i> . (2) <i>Malaclemmys centrata concentrica</i>	20
XI. (1) <i>Malaclemmys macrospilota</i> . (2) <i>Malaclemmys pilcata</i>	20
XII. (1) <i>Malaclemmys centrata</i> , young. (2) <i>Malaclemmys littoralis</i> , young. (3) <i>Malaclemmys littoralis</i> , adult.....	20
MEDUSÆ OF THE WOODS HOLE REGION:	
Plate I. (1) <i>Syncoryne producta</i> . (2) <i>Dipurena strangulata</i> . (3) <i>Dipurella clavata</i> . (4) <i>Lizzia grata</i> . (5) <i>Willia ornata</i>	80
II. (1) <i>Ectopleura ochracea</i> . (2) <i>Hybocodon prolifer</i> . (3) <i>Hybocodon pendula</i> . (4) <i>Bougainvillia carolinensis</i>	80
III. <i>Pennaria tiarella</i>	80
IV. (1) <i>Eutima mira</i> . (2) <i>Tima formosa</i> . (3) <i>Euchelota duodecimalls</i> . (4) <i>Euchelota ventricularis</i> . (5) <i>Podocoryne carnea</i>	80
V. (1) <i>Syncoryne mirabilis</i> . (2) <i>Oceania languida</i> . (3) <i>Epenthesis folleata</i> . (4) <i>Liriope cerasiformis</i> . (5) <i>Charybden verrucosa</i>	80
VI. (1) <i>Gonionemus murbachii</i> . (2) <i>Aurelia flavidula</i>	80
VII. (1) <i>Pelagia cyanella</i> . (2) <i>Dactylometra quinquecirra</i>	80
BLOOD-VASCULAR SYSTEM OF THE TILE-FISH:	
Plate I. (16) Diagram of arterial system. (17) Venous system. (18) First branchial arch.....	114
SEAWEED INDUSTRIES OF JAPAN:	
Plate I. <i>Kanten</i> , or seaweed isinglass.....	135
II. The manufacture of funori, or seaweed glue.....	142
III. The manufacture of funori, or seaweed glue.....	144
IV. Views at an Osaka kombu factory.....	150
UTILIZATION OF SEAWEEDS IN THE UNITED STATES:	
Plate V. Views of the Irish-moss industry of Massachusetts.....	169
CULTIVATION OF MARINE AND FRESH-WATER ANIMALS IN JAPAN:	
Plate I. (1) View of a turtle farm. (2) View in a gold-fish breeder's establishment.....	259
II. (1) Egg deposits of <i>Trionyx</i> covered with wire baskets. (2) Second-year young of <i>Trionyx</i>	264
III. (1) Arrangement for collecting young turtles just hatched. (2) Crushing shells for food of turtles.....	266
IV. Varieties of gold-fish.....	268
V. Varieties of gold-fish.....	268
VI. Varieties of gold-fish.....	268
VII. (1) View in carp-culture establishment. (2) Chitose salmon hatchery.....	274
VIII. Oyster grounds.....	278
IX. (1) Spat collectors. (2) "Toya" ground and living ground.....	280
X. (1) General view of Nihojima Inlet, showing oyster grounds. (2) Oyster grounds near Tamsui, Formosa.....	282
XI. (1) Culture pearls. (2) "Agemaki" shells.....	286
PARASITES OF FISHES OF BEAUFORT, N. C.:	
Plate I. (1-5) <i>Echinorhynchus sagittifer</i>	428
II. (6-7) <i>Echinorhynchus sagittifer</i> . (8-11) <i>Echinorhynchus pristis</i>	428
III. (12-14) <i>Echinorhynchus pristis</i> . (15-16) <i>Echinorhynchus</i> sp. (17) <i>Filaria galenta</i>	428
IV. (18-20) <i>Filaria galenta</i> . (21) <i>Ichthyonema globiceps</i> . (22-23) <i>Ascaris brevicapitata</i> . (24) <i>Heterakis</i> sp.....	428
V. (25) <i>Heterakis</i> sp. (26-30) Immature nematodes.....	428
VI. (31-35) Immature nematodes.....	428
VII. (36-45) Minute nematodes.....	428
VIII. (46-54) Minute nematodes. (55-56) Sporozoa. (57-58) Parasitic copepod.....	428

PARASITES OF FISHES OF BEAUFORT, N. C.—Continued.	Facing page.
Plate IX. (59-66) Rhinebothrium sp.	428
X. (67-71) Rhinebothrium sp.	428
XI. (72-75) Rhinebothrium sp. (76-79) Scolex polymorphus.	428
XII. (80) Calliobothrium sp. (81) Blastocyst. (82-84) Larval cestodes. (85-86) Tænia. (87-88) Rhyncho- bothrium sp.	428
XIII. (89-100) Rhynchobothrium sp.	428
XIV. (101) Rhynchobothrium tenuispine. (102-109) Otophthirium sp. (110-111) Otophthirium erenacolle	428
XV. (112-115) Otophthirium erenacolle. (116-118) Synbothrium sp.	428
XVI. (119-124) Dibothrium tortum	428
XVII. (125) Anthobothrium pulvinatum. (126) Anthobothrium laciniatum. (127) Onchobothrium uncinatum. (128) Acanthobothrium paulum. (129-130) Rhynchobothrium sp.	428
XVIII. (131) Rhynchobothrium sp. (132-138) Rhynchobothrium plicatum.	428
XIX. (139-140) Rhynchobothrium plicatum. (141-145) Otophthirium insigne. (146) Rhynchobothrium hispi- dum.	428
XX. (147-150) Microcotyle sp. (151) Dactylocotyle sp. (152-153) Distomum appendiculatum.	428
XXI. (154-155) Distomum monticellii. (156-157) Distomum tornatum.	428
XXII. (158) Distomum monticellii. (159) Distomum globiporum. (160) Distomum appendiculatum. (161-167) Distomes.	428
XXIII. (168-172) Distomes. (173) Distomum globiporum. (174-175) Distomum bothryophoron.	428
XXIV. (176-178) Distomum vitellosum. (179) Distomum sp.	428
XXV. (180-182) Distomum corpulentum.	428
XXVI. (183-187) Distomum inconstans.	428
XXVII. (188) Distomum vibex. (189-194) Distomum imparispine. (195-197) Distomum aduncum.	428
XXVIII. (198-199) Distomum globiporum. (200-201) Distomum pectinatum.	428
XXIX. (202-203) Distomum pectinatum. (204-209) Distomum sp.	428
XXX. (210-215) Distomum sp. (216) Monostomum sp.	428
XXXI. (217-226) Monostomum sp.	428
XXXII. (227-229) Monostomum sp. (230-232) Gasterostomum gracilescens. (233-234) Gasterostomum baculum. (235) Gasterostomum arcuatum.	428
XXXIII. (236-239) Gasterostomum gracilescens. (240-242) Gasterostomum gorgon.	428
XXXIV. (243-249) Aspidogaster ringens.	428
AMPHIPODA OF SOUTHERN NEW ENGLAND:	
Plate I. (1) Hyperia galba. (2) Euthemisto bispinosa. (3) Phronima sedentaria.	530
II. (1) Talorchestia longicornis. (2) Talorchestia megalophthalma. (3) Orchestia agilis.	530
III. (1) Orchestia palustris. (2) Hyale littoralis. (3) Anonyx nugax.	530
IV. (1) Hoplonyx cicada. (2) Hippomedon serratus. (3) Tryphosa pinguis.	530
V. (1) Lysianopsis alba. (2) Haustorius arenarius. (3) Byblis serrata.	530
VI. (1) Ampelisca compressa. (2) Stegocephalus inflatus. (3) Metopa groenlandica.	530
VII. (1) Leucothoë spinicarpa. (2) Parædiceros lynceus. (3) Pleustes panoplus.	530
VIII. (1) Paramphithoë pulchella. (2) Sympleustes latipes. (3) Epimeria loricata.	530
IX. (1) Acanthozone cuspidata. (2) Lafystius sturionis. (3) Eusirus cuspidatus.	530
X. (1) Calliopius læviusculus. (2) Gammarellus angulosus. (3) Gammarus locusta.	530
XI. (1) Gammarus marinus. (2) Gammarus annulatus. (3) Melita nitida.	530
XII. (1) Elasmopus lævis. (2) Mæra danæ. (3) Ptilocheirus pinguis.	530
XIII. (1) Amphithoë rubricata. (2) Amphithoë longimana. (3) Ischyrocerus anguipes.	530

TEXT CUTS.

MEDUSÆ OF THE WOODS HOLE REGION:	Page.
Perigonimus jonesii.	33
Protiara haeckeli.	35
Stomotoca apicata, male.	35
Stomotoca apicata, female.	35
Turris vesicaria.	36
Turris episcopalis.	36
Turritopsis nutricula.	37
Dysmorphosa fulgurans.	38
Bougainvillia superciliaris.	40
Nemopsis bachel.	41
Laodicea calcarata.	43
Staurostoma laciniata.	43
Orchistoma tentaculata.	44
Clytia bicophora.	46
Obelia diaphana.	48
Tiaropsis diademata.	49
Rhegmatodes tenuis.	52
Rhopalonema typicum.	54
Aglaura hemistoma.	55
Aglantha digitalis.	55

LIST OF ILLUSTRATIONS.

VII

	Page.
MEDUSÆ OF THE WOODS HOLE REGION—Continued.	
Aglantha conica	56
Glossocodon tenuirostris	57
Ægina pachyderma	58
Solmaris tetranema	58
Diphyes bipartita	59
Diphyopsis campanulifera	60
Sphæronectes gracilis	61
Halielystus auricula	63
Scyphostomæ of Aurelia flavidula	67
Beroe ovata	78
OSTEOLOGY AND IMMEDIATE RELATIONS OF THE TILE-FISH:	
Cranium of Lopholatilus, superior aspect	84
Cranium of Lopholatilus, left lateral aspect	85
Cranium of Lopholatilus, posterior aspect	85
BLOOD-VASCULAR SYSTEM OF THE TILE-FISH:	
Efferent branchial vessels of tile-fish, with circulus cephalicus	90
Efferent branchial and head arteries, with circulus cephalicus, in conger eel	91
Cranial portion of arterial system in hickory shad	92
Second efferent branchial artery in hickory shad	92
Fourth efferent branchial artery in hickory shad	92
Efferent branchial vessels of tile-fish, with circulus cephalicus	93
Cranial portion of arterial system in swell-fish	94
Cranial portion of arterial system in sculpin	95
Cranial portion of arterial system in tomcod	97
Cranial portion of arterial system in toad-fish	98
Cranial portion of arterial system in flounder	99
Ventral ends of efferent branchial vessels and their branches in tile-fish	101
Ventral ends of efferent branchial vessels and their branches in tomcod	102
Ventral ends of efferent branchial vessels and their branches in goose-fish	103
Diagrammatic cross section of body of tile-fish	104
FISH PARASITES OF THE GENUS ARGULUS:	
Argulus aloæ, female	122
Argulus aloæ, male	122
Argulus catostomi	123
Newly hatched larva of Argulus catostomi	124
A single cluster of eggs of Argulus catostomi	125
A single egg of Argulus catostomi	125
Argulus funduli	126
Argulus laticauda	127
Argulus latus	128
Argulus megalops	129
Newly hatched female larva of Argulus megalops	130
Eggs of Argulus megalops about ready to hatch	130
SEAWEED INDUSTRIES OF JAPAN:	
"Tengusa" (Gelidium corneum)	137
Furnace and tub for the boiling of Gelidium	138
Press for straining crude seaweed jelly	139
Pouring liquid kanten into cooling trays	139
Articles used in cutting seaweed jelly into sticks and bars	140
"Funori" (Gloiopeltis coliformis)	144
A roll of funori	145
Kelps used in preparing kombu	147
Kelps used in preparing kombu	147
Forms of hooks used in gathering kelp in Hokkaido	148
Kelp fishermen of Hokkaido	149
Drying kelp on the beach in Hokkaido	150
Gathering kelp with poles and drags	151
Gathering kelp	152
"Amanori" or laver (Porphyra laciniata)	155
Preparing brush for laver cultivation	156
Bundle of brush and conical frame used in planting brush on soft bottom	157
Planting bundles of brush on which laver is to grow	158
Washing laver prior to sorting and cutting	158
Sorting and cutting laver	159
Preparing laver sheets	159
The preparation of Porphyra	160
"Kajime" (Ecklonia cava)	161
"Arame" (Ecklonia bicyclis)	161

	Page.
UTILIZATION OF SEAWEEDES IN THE UNITED STATES	
Irish moss (<i>Chondrus crispus</i>).....	170
Dulse (<i>Rhodomenia palmata</i>).....	172
Giant kelp (<i>Nereocystis lütkeana</i>).....	173
Rockweed (<i>Fucus vesiculosus</i>).....	175
Sea lettuce (<i>Ulva latissima</i>).....	179
"Badderlocks" (<i>Alaria esculenta</i>).....	180
Dulse (<i>Schizymenia edulis</i>).....	180
ISOPODS FROM THE ALASKA SALMON INVESTIGATION:	
<i>Aega symmetrica</i>	212
<i>Rocinela belleiceps</i>	213
<i>Rocinela angustata</i>	214
<i>Rocinela propodialis</i>	215
<i>Tole holmesi</i>	217
First incubatory lamella of <i>Bopyroides hippolytes</i>	218
Sixth leg of <i>Bopyroides hippolytes</i>	219
Adult female of <i>Holophryxus alaskensis</i>	221
Maxilliped of <i>Holophryxus alaskensis</i>	221
Terminal segment of first lamella of incubatory plates of <i>Holophryxus alaskensis</i>	221
FISHES FROM BOULDER COUNTY, COLORADO:	
<i>Leuciscus evermanni</i>	226
FISH FAUNA OF THE TORTUGAS ARCHIPELAGO:	
<i>Holocentrus tortuga</i>	236
<i>Etelides aquilionaris</i>	241
<i>Eviota personata</i>	251
<i>Gnathypops aurifrons</i>	252
<i>Execestides egregius</i>	253
<i>Execestides egregius</i> , front view.....	253
CULTIVATION OF MARINE AND FRESH-WATER ANIMALS IN JAPAN:	
Plan of a turtle farm.....	261
Section and plan of a turtle pond.....	262
Diagram of the tail of a gold-fish.....	267
"Demé-ranchu".....	269
Diagram of typical oyster farm, Kaida Bay.....	279
Diagram of well-developed oyster farm.....	279
Bamboo collectors for oyster spat.....	280
Ground plan of a "toya".....	281
Map of oyster and seaweed concessions in an estuary of Nihojima.....	282
PHYSIOLOGICAL STUDIES OF THE CHINOOK SALMON:	
Diagram of normal blood pressure from ventral aorta.....	435
Diagram of a type of blood pressure from ventral aorta when affected by respiratory movements.....	437
Diagram of blood pressure from ventral aorta showing rhythmic interference of respiratory movements with pulse pressure.....	438
Diagram of blood pressure from dorsal aorta.....	441
Diagram showing maximal blood pressure in ventral aorta when that vessel is completely occluded.....	442
Diagram showing fall in ventral aortic pressure and the irregular heart rate following cutaneous stimulation.....	443
Diagram showing effect on blood pressure in ventral aorta and on heart rate following stimulation of the vagus nerve.....	444
AMPHIPODA OF SOUTHERN NEW ENGLAND:	
<i>Hyperia galba</i>	464
<i>Talorchestia longicornis</i>	468
<i>Talorchestia megalophthalma</i>	469
<i>Orchestia agilis</i>	470
<i>Orchestia palustris</i>	471
<i>Allorchestes littoralis</i>	472
<i>Anonyx nugax</i>	473
<i>Tryphosa pinguis</i>	473
<i>Hippomedon serratus</i>	474
<i>Lysianopsis alba</i>	475
<i>Pontoporeia femorata</i>	476
<i>Haustorius arenarius</i>	476
<i>Phoxocephalus hölbölli</i>	477
<i>Paraphoxus spinosus</i>	478
<i>Ampelisca macrocephala</i>	479
<i>Ampelisca spinipes</i>	480
<i>Ampelisca compressa</i>	481
<i>Ampelisca agassizi</i>	482
<i>Byblis serrata</i>	482
<i>Metopa grønlandica</i>	483

AMPHIPODA OF SOUTHERN NEW ENGLAND—Continued.	Page.
<i>Stenothoë cypris</i>	484
<i>Stenothoë minuta</i>	485
<i>Leucothoë spinicarpa</i>	486
<i>Parædiceros lynceus</i>	487
<i>Monoculodes edwardsi</i>	487
<i>Pleustes panoplus</i>	488
<i>Paramphithoë pulehella</i>	489
<i>Sympleustes laticus</i>	490
<i>Sympleustes glaber</i>	491
<i>Acanthozone cuspidata</i>	491
<i>Lafystius sturionis</i>	492
<i>Eusirus cuspidatus</i>	493
<i>Calliopius læviuseculus</i>	494
<i>Halirages fulvocinctus</i>	495
<i>Apherusa gracilis</i>	496
<i>Pontogenia inermis</i>	497
<i>Dexamine thea</i>	498
<i>Batea secunda</i>	499
<i>Gammarus locusta</i>	501
<i>Gammarus annulatus</i>	502
<i>Gammarus marinus</i>	502
<i>Carinogammarus mucronatus</i>	503
<i>Melita dentata</i>	504
<i>Melita nitida</i>	505
<i>Melita parvimana</i>	506
<i>Elasmopus lævis</i>	507
<i>Gammarellus angulosus</i>	508
<i>Chelura terebrans</i>	509
<i>Amphithoë longimana</i>	509
<i>Amphithoë rubricata</i>	510
<i>Grubia compta</i>	511
<i>Jassa marmorata</i>	512
<i>Ishyrocerus anguipes</i>	513
<i>Microdeutopus gryllotalpa</i>	514
<i>Microdeutopus danmonensis</i>	515
<i>Autonoë smithi</i>	516
<i>Cerapus tubularis</i>	517
<i>Eriethonius rubricornis</i>	518
<i>Eriethonius minax</i>	519
<i>Unciola irrorata</i>	520
<i>Corophium cylindricum</i>	521
<i>Ptilocheirus pinguis</i>	523
<i>Podocercopsis nitida</i>	524
<i>Æginella longicornis</i> , var. <i>spinississimus</i>	525
<i>Caprella linearis</i>	526