

Accession No.: 81-12

PROCESSING RECORD
SCRIPPS INSTITUTION OF OCEANOGRAPHY ARCHIVES

Scripps Institution of Oceanography

SIO Lantern Slides, 1920-1940

BULK DATES: 1922-1939

PHYSICAL DESCRIPTION: 968 lantern slides

ARRANGEMENT: subject classification: Apparatus; Bacteria; Fungi; Diagrams, Tables, etc.; Chemistry; Chordates; Peromyscus; Fish; Fish Color Change; Geography – Collecting Trips; Expeditions; Biogeography; Geography; Geology; Earth Physics; Topography and Bottom Configuration; Erosion; Foraminifera; Marine Sediments; History of Science – SIO; Other Institutions; Oceanographers; Biography; Marine Invertebrates; Marine Plankton; Zooplankton; Phytoplankton; Meteorology; Physical Oceanography; Theory, Dynamics, Mechanics; Circulation; Temperature and Salinity; Light; High Waves; Tides; Marine Plants; Map Making Projections; Map Making Historical; Fouling Organisms; Wood Boring Organisms; Hydrology

DESCRIPTION: This slide collection includes images on marine life, physical oceanography, submarine geology, the history of oceanography and the expeditions and history of the Scripps Institution of Oceanography. Images documenting the work of Martin W. Johnson, George F. McEwen, Francis P. Shepard and Claude Zobel1 are included in the collection. The lantern slides were collected by the SIO Library's Ruth Ragan. The slides include original photographs and images copied from books and articles. Each slide is identified and labeled, although date is only occasionally given. Ragan arranged the slides into broad subject categories and a subject index card file was maintained by Ruth Ragan.

Numerical list of slides by Ruth Ragan was annotated to indicate missing and damaged slides as of 9/17/81. It is possible that some of the missing slides are among the unidentified lantern slides since the adhesive on labels is loose. Significant numbers of slides are missing from III Chemistry; IVB Peromyscus; VIA Collecting trips; VIIF Foraminifera Living; IX Marine Invertebrates

SIO Lantern Slides, 1920-1940
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BOX	FOLDER TITLE
	I-A APPARATUS
1	<ol style="list-style-type: none">1. Hot-air dryer2. Van Slyke blood-gas apparatus3. Recording current meter4. Apparatus attached to sounding line5. Captain Belknap's sounding cylinder no. 26. Pettersson-Nansen closing water bottle7. Helland-Hansen's deep-sea photometer8. Three coring devices. Trask.9. Bottom sampler10. Diagram of apparatus for collecting plankton and water samples and measuring temperature and currents, at same level.11. Apparatus for measuring specific gravity12. Sampling net. Being hauled13. Sigsbee wire sounding apparatus. Diagram.14. Sigsbee apparatus15. Sigsbee apparatus (and sailor)16. Sigsbee apparatus, attached to boat17. Nansen-Pettersson water bottle. (open)18. Gee bacteriological water sampler

BOX**FOLDER TITLE****I-A APPARATUS (cont.)**

- 1
19. Wilson bacteriological water sample
 20. Whipple bacteriological water sample (Missing)
 21. Smith-ZoBell bacteriological water sampler (Great Salt Lake) (Broken/Damaged)
 22. Snapper type bottom sampler
 23. Cork-pull bacteriological water sampler.
 24. Prince Rupert bacteriological water sampler (Bedford)
 25. Three early microscopes
 26. Kircher's early compound microscope
 27. Hooke's compound microscope
 28. Nansen water bottle, closing
 29. ZoBell bacteriological water sampling bottle
 30. Zobell vacuum mud sampler (Missing)
 31. Zobell-Feltham water sampling device
 32. Smith's slide-rack for holding micro-slides (Smith-Zobell) (Great Salt Lake)
 33. Diagram of Zobell's slide-rack for holding micro-slides (Zobell-Allen)
 34. Ekman's reversing water bottle. Ekman's water bottle, large pattern.
 35. Specific gravity apparatus (Missing)
 36. Reversing thermometer
 37. Boron determination apparatus (Missing)
 38. Boron determination apparatus. Electrodes (Missing)

BOX**FOLDER TITLE****II-A BACTERIA**

1. Lohmansi disneum oplanthum. Bakterien u. Chroococcaceum (Broken/Damaged)
2. Cocci, steps in formation of various groupings
3. Bacilli, different shape and groupings
4. Spiral bacteria, types
5. Capsulated bacteria, types
6. Bacterial sheaths
7. Trichobacteria: true, false branching
8. Sarcina
9. Staphylococcus
10. Flagella of bacteria
11. Bacteria, orders of: in relation to each other and to other groups of plants and animals
12. Stab cultures: types of growth
13. Streak cultures: forms of growth
14. Spirilla types
15. Vinegar bacteria
16. Azotobacter vinelandii
17. Escherichia coli.
18. Eberthella typhosa
19. Serratia marcescens
20. Bacillus mycoides

BOX**FOLDER TITLE****II-A BACTERIA (cont.)**

1

21. Diplococcus pneumoniae
22. Streptococcus lactis
23. Vibrio cholera
24. Treponema pallidum
25. Treponema pallidum
26. Treponema pallidum from syphilitic fetus
27. Treponema pallidum. Ten views of cultures
28. Treponema macrodentium, x 1000
29. Treponema microdentium
30. Treponema pallidum and T. Microdentium (reversed)
31. Achromobacter ichthyodermis (ZoBell and Wells)
32. Achromobacter ichthyodermis, dermatitis in Fundulus parvipinnis caused by
33. Bacillus acidophilus from milk. Lactobacillus
34. Brucella abortus. Microphotograph
35. Bacillus anthracis with endospores
36. B. (Cl.) chaucei showing spores
37. Bacillus (Clostridium) welchii. Capsules
38. Bacillus coli
39. Brucella melitensis (microphotograph)
40. Diphtheria bacilli, type A
41. Diphtheria bacilli, type C, pure culture. Shows polar bodies

BOX**FOLDER TITLE****II-A BACTERIA (cont.)**

- 1
- 42. Diplococcus pneumoniae showing capsules
 - 43. Diplococcus tetragenus
 - 44. Gonococcus in urethral pus. Intracellular. Meisseria gonorrhoeae
 - 45. Nenfeld capsule swelling test for typing Pneumococci (Lederle)
 - 46. B. mucosus capsulatus (may be Friedlander's bacillus) (Broken)
 - 47. Bacterium (Pasteurella) pestis (Broken)
 - 48. Pneumococcus, type II, with capsules
 - 49. Pneumococcus, type II, with capsules
 - 50. Giant Spirillum
 - 51. Spirochaeta refringens, five views
 - 52. Vincent spirochaetes and fusiform bacilli in Vincent's Angina
 - 53. Oral microflora. Sporochaetes and fusiformis. (Smith, Oral Spirochaetes, p. 115)
 - 54. Mixed microflora from mouth. Fusiform bacilli and Vincent's Spirochaetes
 - 55. Spirochaetes from saliva with long bacilli and streptococci
 - 56. Streptococcus hemolyticus from blood. Long chains
 - 57. B. subtilis, showing endospores
 - 58. B. (Cl.) tetani, showing spores
 - 59. Vincent's Angina organisms before and after treatment
- 2
- 60. Vibron septiqua, vegetative cells (Missing)
 - 61. Vibrio cone (Spirillum cholerae asiaticae) (Missing)
 - 62. Microphotographs of small bacteria

BOX**FOLDER TITLE****II-A BACTERIA (cont.)**

- 2 63. Morphological types of bacteria. Staph., Cl. Botulinum, Sp. Undula, Strept., Sarcina, B. anthracis
64. Types of bacteria. Rods, spores, flagella. From Waksman, "Soil Microbiology"
65. Removing smallpox vaccine from calf
66. Periphytic bacteria of different types. Henrici: Freshwater bacteria
67. Types of periphytic bacteria. Fouling and bacteria (Henrici-J.B.)
68. Marine periphytic bacteria
69. Salt encrusted on slide carrier from Great Salt Lake (Smith-ZoBell)
70. Salt-covered slides from Great Salt Lake (Smith-Zobell)
71. Salt-encrusted piles in Great Salt Lake (Smith-ZoBell). Halophilic bacteria (Broken)
72. Salt-encrusted piles in Great Salt Lake (Smith-ZoBell). Halophilic bacteria. (2)
73. Bacteria. General forms and comparative sizes of micro-organisms
74. Coccidioides immitis, the etiological agent of coccidioidal granuloma. Colony and cells. (Gay)
75. Life cycle of malarial parasites in mosquito (Gay)
76. Blastomyces dermatitidis, etiological agent of blastomycosis. Colony and cell (Gay) (Missing)
77. Life cycle of malaria Plasmodium

II-B FUNGI

1. Penicillium, common species of genus
2. Penicillium camembertii

BOX**FOLDER TITLE****II-B FUNGI (cont.)**

- 2
3. Aspergillus, principal species of genus
 4. Aspergillus, septate mycelium on agar plate culture
 5. Sporangia with spores, longitudinal sections of types
 6. Mucor, nonseptate mycelium
 7. Conidiophores, types
 8. Yeast cells, types of budding yeast cells
 9. Mycelia of molds, septate and non-septate
 10. Torulae from pickle brine
 11. Rhizopus, Absidia, Mucor, Zygorhynchus, Spinellus, Mortierella, Thamnidium, Dicranophora
 12. Pilaira, Pilobolus, Cunninghamella, Poptocephalus, Oospora, Monilia, Hyalopus, Cephalosporium
 13. Acremoniella, Dematium, Hormodendrum, Mesobotrys, Diccocum, Cladosporium, Scolecobasidium, Helminthosporium
 14. Isaria, Stysans, Hymenula, Voluntella, Fusarium, Epicoccum, Thyrococum
 15. Spondylocladium, Acrothecium, Tetracocco sporium, Stemphylium, Macrosporium, Dactlosporium, Alternaria, Tilachlidium
 16. Actinomycosis. Actinomyces bovis
 17. Alternaria, showing oemidis (Missing)
 18. Soil Actinomyces colony and mycelium types (Waksman)
 19. Actinomyces, showing mycelium, fragmentation, and angular growth
 20. Systematic relationships of yeasts

BOX**FOLDER TITLE****II-C DIAGRAMS, TABLES etc.**

- 2
1. Effect of volume on multiplication of marine bacteria (ZoBell-Anderson) (Missing)
 2. Growth curves during storage in different volumes of stored sea water (ZoBell-Anderson)
 3. Effect of volume of stored sea water on oxygen consumption (ZoBell-Anderson) Chart (Missing)
 4. Graph showing effect of volume of stored sea water on oxygen consumption (ZoBell-Anderson)
 5. Effect of solid surface on bacterial multiplication in stored sea water (ZoBell-Anderson) (1) (Missing)
 6. Effect of solid surface on bacterial multiplication in stored sea water (ZoBell-Anderson)(2)
 7. Diagram showing relative size of erythrocyte, yeast, coccus and bacillus
 8. Food value of milk shown diagrammatically
 9. Diagrams showing course of smallpox vaccination (Rosenau)
 10. Change occurring during pasteurization of milk
 11. Number of periphytic bacteria in Great Salt Lake (Smith-ZoBell) (Missing)
 12. Salinity requirements of Great Salt Lake bacteria (Smith-ZoBell) Halophiles (Missing)
 13. Bacteriostatic action of Great Salt Lake water (Smith-ZoBell) (Missing)
 14. Bactericidal action of Great Salt Lake water (ZoBell-Smith) (Missing)
 15. Tolerance of Fundulus to germicides (Missing)
 16. Importance of bacteria in the sea, Outline
 17. Graph showing seasonal distribution of bacteria in the sea and insolation

BOX**FOLDER TITLE****II-C DIAGRAMS, TABLES etc. (cont.)**

18. Graph showing seasonal distribution of marine bacteria in 1932 and water temperatures
19. Vertical distribution of bacteria in the sea, showing also diatoms, PO₄, NO₃, light, temperature (ZoBell).
20. Graph showing seasonal distribution by weekly averages
21. Bacteria per cc. of sea water, O₂ consumption, and periphytes per sq. cm. (volume effect). ZoBell.
22. Oxygen content and bacterial population of different volumes of stored sea water.
23. Relation of nitrite to temperature and density in Gulf of Maine. After Rakestraw
24. Vertical distribution of nitrites, nitrates, and phosphates at deep marine stations. After Rakestraw

III CHEMISTRY

1. Vertical distribution of chemical constituents of sea water (Missing)
2. Vertical variation and chemical constituents, 15 ms. sw of Point Loma, March, 1926
3. Apparatus for determining boron in sea water (Missing)
4. Boron, variation with depth in sea water off Point Loma (Missing)
5. Boron, variation with depth in sea water of Kaheelame (Missing)
6. Boron content, surface sea water from various localities (Missing)
7. Relation of boron to chlorine in sea water (Missing)
8. Vertical distribution, carbon dioxide and titratable base in sea water (Missing)
9. Relation of CO₂ and pH in sea water (Missing)
10. Calcium carbonate, spherulitic grains Revelle

BOX**FOLDER TITLE****III CHEMISTRY (cont.)**

- 2
11. Two calcium carbonate precipitation equations (Missing)
 12. Graph showing weekly means of pH and temperature, SIO pier.
 13. Graph showing relation of pH and temperature to depth, 2 off-shore stations, June, 1924
 14. Temperature and oxygen of surface and bottom water, SIO pier, September, 1925 (Missing)
 15. Temperature and oxygen about 10 mis. off La Jolla
 16. Temperature and oxygen, 30-50 mis. off coast, southern California
 17. Temperature and salinity gradients at two CARNEGIE stations (Missing)
 18. Oxygen in cc per liter, CARNEGIE stations 130-134 (Missing)
 19. Oxygen in cc per liter, CARNEGIE stations 135-139 (Missing)
 20. Comparison of oxygen distribution, Atlantic and Pacific
 21. Oxygen distribution, Panama to New Caledonia (Missing)
 22. Oxygen desert, phosphate desert. Moberg. CARNEGIE
 23. Vertical section, North Pacific (between 0-34 N and ca. 145 E. Long)
 24. Vertical section, North Pacific (between 127 E and 151 at about 70N Lat.)
 25. Vertical distribution of dissolved oxygen in the southwestern North Pacific (Missing)
 26. Relation between pX^2 and pH in sea water (Missing)
 27. Dissociation of borate in sea water (Missing)
 28. Oxygen distribution, Honolulu to San Francisco (Missing)
 29. Oxygen content of water, Scripps Institution pier. (Missing)
 30. Oxygen, Seasonal Variation, SIO pier

BOX**FOLDER TITLE****III CHEMISTRY (cont.)**

- 2
31. Oxygen in the Atlantic Ocean. After Helland-Hansen (Missing)
 32. Oxygen distribution, Atlantic Ocean between 60N and 50S after Helland-Hansen (Missing)
 33. Oxygen section across Atlantic after Wattenberg (Missing)
 34. Longitudinal oxygen section across Atlantic. After Wattenberg (Missing)
 35. Plant nutrients, diatoms, off La Jolla. Vertical section
 36. Chemical, physical conditions off La Jolla. Variations with depth
 37. The buffer mechanism of sea water (Missing)
 38. Correlation between concentration of nitrate and oxygen in western Atlantic (Missing)
 39. Correlation between concentration of nitrate and phosphate in Barents Sea, and south Atlantic (Missing)
 40. Correlation between concentration of nitrate and phosphate in Atlantic, Indian, Pacific Oceans (Missing)
 41. Correlation between concentration of nitrate and phosphate in western Atlantic (Missing)
 42. Relation of boron to chloride in sea water
 43. Boron-chloride ratio against chlorinity in Pacific, Gulf of Catalina, Atlantic
 44. Boron-Chloride ratio and base-chloride ratio, Atlantic and Pacific

IV-A GENERAL

1. Hypobythius calycodes
2. Ascidians
3. Ascidia rudis (Missing)
4. Ascidia clementea

BOX**FOLDER TITLE****IV-A GENERAL (cont.)**

- 2
5. Humpback (Megaptera boops). Cachalot or sperm-whale *Physeter macrocephalus*)
 6. Greenland whale (*Balaena mysticetus*); Bluefin whale *Balaenoptera musculus*); cross-section, head of fin-whale
 7. *Ichthyosaurus quadriscissus* (outline, skeleton); *Plesiosaurus dolichodeirus* Conyb. Restoration, *Geosaurus suevicus*

IV-B PEROMYSCUS

- 1-38 noted as missing in 1981 inventory
39. Distribution, subspecies of *Peromyscus maniculatus* in North America (after Osgood)

V- FISH -A GENERAL

1. Siphonophore, Pteropod, Sagitta, Fish
2. *Cladoselache fleri* Newb. Restoration by Dean
3. *Aleposomus copei*
4. *Regalecus glesne*
5. *Gonostoma grande* Collett
6. Devonian fishes
7. *Malacosteus niger*
8. *Labichthys carinatus*
9. Moray. *Gymnothorax*
10. Half-beak (*Euleptorhanipus longirostis*)
11. Porcupine fish, diamond sole, anglers
12. Angler fish (*Antennarius leprosus*)

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

2

13. Angler fish
14. *Macrostemia longibarbatus*. Brauer. (Missing)
15. Pilot fish (*Nucrates doctor*) and flying fish
16. Flatfish
17. Flying gurnard (*Dactylopterus*)
18. *Lentipes* Gunther
19. *Solenostomus cyanopterus*
20. Trumpet fishes (*Aulostomidae*)
21. *Aectis ciliaris* (Bloch) Threadfish; cobbler fish; sunfish. Tropical America
22. Teleost fish, eternal
23. Largest fish known: whale shark (*Rineodon typicus*)
24. Smallest fish known: *Mistichthys luzonensis*

3

25. Various conditions of unpaired fins
26. Three species of Marsipo branches: *Myxine glutinosa*, *M. australis*, *Petromyzon marinus*
27. 4 kinds of sharks: *Scilliorhinus profundum*, *Pseudotricacis microdon*, *Spinax niger*, *Cetorhinus maximus*
28. Chimaeroids: *C. monstrosa*, *C. antarcticus*
29. Lung-fishes, distribution: *Protopterus aethiopicus*, *Lepidosiren paradoxa*, *Epiceratodus forsteri*
30. Polypterus and sturgeon (*Acipenser ruthenus*)
31. Modifications of form of fish body
32. Modifications of head region

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

- 3
33. Modifications of form of fishes: mackerel, trunk-, sunglobe-fish, sea horse, eel
 34. Apparatus for clinging to other objects
 35. Remora
 36. Different kinds of flat fish (Pleuronectids)
 37. Sea horses
 38. Skeleton of Nile perch (*Lates niloticus*)
 39. Skull of *Salmo*
 40. *Salmo fario*, interior bones of skull
 41. Shark, cartilaginous cranium
 42. Shark (*Heptanchus maculates*), Skull
 43. Dog-fish (*Scyllium canicula*) Skull
 44. Probable origin of pelvic girdle
 45. Pectoral, pelvic fins of shark (*Hemiscyllium*)
 46. Pelvic fin of *Ceratodus forsteri*
 47. Caudal region of *Lepidosteus* and *Salmo*
 48. Different types of scales
 49. Scales of teleost fish: lines of growth in scales
 50. Transverse section of a fish, diagrammatic
 51. Diagram, vascular system of a fish
 52. Diagram, early circulation of vertebrate
 53. Modifications of aortic arches in different vertebrates

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

- 3
54. Different stages, differentiation of vertebrate heart
 55. External gill-openings, different groups of fishes
 56. Elasmobranch, horizontal section through head.
 57. Gill filaments, gill rakers, different kinds of fishes
 58. Accessory breathing organs
 59. Air-bladder and lung, different fishes
 60. Air-bladder of protopterus
 61. Air-bladder of Otolithus and of Corvina lobata
 62. Salmo, internal organs
 63. Viscera of a shark (Heptanchus maculates)
 64. Viscera of a dog-fish (Scyllium)
 65. Alimentary canal of a shark (Heptanchus maculates)
 66. Valvular intestine of a shark (Raja) (Broken)
 67. Upper surface, brain of ray (Raia); also of cod (Gadus callarius)
 68. Salmo fario, vertical section of eye
 69. Eyes: Sphyrna zygaena, Gigantura chuni, Stylophthalmus paradoxus, Anableps tetrophthalmus
 70. Otoliths, showing lines of growth (Broken)
 71. Sensory canals, Gadus vivens, left side of head
 72. Modifications, lateral-line system Chlamydoselachus anguileus, Amia calya, Perca fluviatilis, Heterotis niloticus
 73. Gymnotus electricus, electric organs

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

3

74. Torpedo, electric organs

75. Light organ of *Vinciguerria lucetia*76. Ceratioid angler-fishes: *Linophryne arborifer*, *Melanocetus johnsoni*, *Lasiognathus saccostoma*77. Deep-sea fishes: *Chiasmodon niger*, *Borophryne apogon*, *Eurypharynx peleconoides*, *Argyropelecus*, *Malacosteus indicus*, *Paralparis*, *Saccopharynx ampullaceus*.78. Tactile organs of deepsea fish: *Eustomias*, *Photonectes intermedius*, *Chiostomias pliopterus*79. *Astronesthes niger*, *A. gemmifer*, *A. richardsonii*80. *Aethroprora metopoclampa*, *Ae. Lucida*, *Ae. Effulgens*81. *Macrurus berglax*, *M. bairdii*, *Coelorhynchus carminatus*, *C. occa*.

82. Distribution of Cyprinodontidae, Amblyopsidae, Percopsidae-Columbia as Percopsis

83. Distribution of Characinidae, Cyprinidae, and Gymnotidae

84. Distribution of Dipnoi and Crossopterygii

85. Distribution of Galaxiidae and Hapochitonidae

86. Distribution of Anabantidae

87. Distribution of Ophiocephalidae

88. Distribution of Centrarchidae, Aphredoderidae, Kuhliidae, Toxotidae

89. Distribution of Perca

90. Distribution of Halibut and *Platysomatichthys*91. Distribution of fresh-water *Lota*, and of genus *Molva*92. Distribution of *Gastrosteidae*

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

3

93. Distribution of Salmonidae
94. Distribution of Holostei
95. Distribution of Chondrostei
96. Different types of egg capsules in fishes
97. Egg of whiting, general growth of embryo
98. Different types of egg-segmentation in fishes
99. Development of shark and bony fish. (*Squalus acanthias*, *Salmo salar*)
100. *Ceratodus forsteri*, development of egg
101. *Leptocephalus* stages and metamorphosis of eel (*Anguilla anguilla*)
102. Breeding grounds of European and American eels (*Anguilla anguilla* and *A. rostrata*)
103. Metamorphosis of Plaice (*Pleuronectes platessa*)
104. Transition from dermal spines to teeth on jaw of young shark (*Scyllium*)
105. Development of dermal spine in embryo shark
106. Young stages, *Lepidosiren paradoxa*, and *Polypterus endlicheri*
107. Spawning of the Brook-Lamprey (*Petromyzon wilderi*)
108. Archer-fish (*Taxotes jaculator*), supposed method of catching insects
109. Walking goby and Remora
110. Frog-fish (*Pterophryne tumida*) in Sargasso weed
111. Angler fish (*Photichthys argenteus*), and parasitic male (Missing)
112. Embryos of fresh-water fish *Rhodeus* in gill cavities of *Unio*
113. *Fierasfer acus* and Holothurians

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

- 3 114. Studies in locomotion of teleost fish (1)
 115. Studies in locomotion of teleost fish (2)
- 4 116. Studies in locomotion of teleost fish (3)
 117. Studies in locomotion of teleost fish (4)
 118. Studies in locomotion of teleost fish (5)
 119. Phylogenetic “tree” of the class Selachii
 120. Phylogenetic “tree” of the class Pisces
 121. Restorations of Silurian and Devonian Marsipobranches
 122. Lamprey and supposed head of Rhyncholepis
 123. Restoration of Placoderms
 124. Evolution of fins, hypothetical
 125. Cladoselache (after Dean)
 126. Cladoselache, pectoral and pelvic fins
 127. Pleuracanthus (Xenacanthus) decheni, restoration
 128. Mouth of gigantic fossil shark
 129. Dipterus valenciennesi, restoration
 130. Restoration, *Holoptychius flemingi*, *Eusthenopteron fordi*
 131. *Rhizodopsis sauroides*, restoration
 132. Restoration, *Palaeoniscus macropomus*
 133. Restoration, *Cheirodus granulosus*
 134. Restoration, *Chondrosteus aacipenseroides*

BOX**FOLDER TITLE****V -FISH-A GENERAL (cont.)**

- 4
- 135. Restoration, *Leptolepis dubius*
 - 136. Pectoral fin, *Sauripterus taylori*
 - 137. Eel. *Anguilla vulgaris* L. Seven stages of development
 - 138. *Chiasmodon niger*, Johns. Having swallowed a larger specimen
 - 139. *Gastrotomus bairdii*
 - 140. *Argyropelacus hemigumnus*
 - 141. *Chimaera mirabilis*. *Macrurus aequalis*

V-B COLOR CHANGE

- 1. Apparatus for relation of shade to apparent source of illumination
- 2. *Fundulus parvipinnis*: two specimens with celluloid goggles, one control
- 3. Head of *Lebistes*, kept 2 ½ mos. On white. Killed directly
- 4. Head of *Lebistes*, kept 2 ½ on black. Killed directly
- 5. Dorsal surface, trunk, *Lebistes*, kept 3 mos. on white. Killed directly
- 6. Dorsal surface, trunk, *Lebistes*, kept 3 mos. on black. Killed directly
- 7. Snout region, *Lebistes*, kept 2 ½ mos. on white, killed directly (higher magnification)
- 8. Snout region, *Lebistes*, kept 2 ½ mos. on black, killed directly (higher magnification)
- 9. *Fundulus*; chromatophores on scales, subjected to urethane (Missing)
- 10. *Fundulus*, Chromatophores on scales, under influence of adrenalin
- 11. Chromatophores, *Lebistes* kept 3 mos. on white, killed directly. Seen by transmitted light

BOX**FOLDER TITLE****V-B COLOR CHANGE (cont.)**

- 4
12. Chromatophores, Libistes kept 3 mos. on white, killed directly. Seen by surface illumination (same group, 11) (Missing)
 13. Dorsal view, white-adapted Lebistes subjected to adrenalin Showing halos (1) (Missing)
 14. Dorsal view, white-adapted Lebistes subjected to adrenalin. Showing halos (2)
 15. Dorsal View, head Lebistes 3 mos. on white, subjected to adrenalin (Missing)
 16. Dorsal view, head Lebistes 3 mos. on black, subjected to adrenalin (Missing)
 17. Trunk, Lebistes 3 mos. on white, subjected to adrenalin
 18. Trunk, Lebistes 3 mos. on black, subjected to adrenalin
 19. Trunk, Lebistes 3 mos. on white, subjected to urethane
 20. Trunk, Lebistes, born on white, 35 minutes on black, killed directly
 21. Chromatophores, Lebistes kept 3 mos. on white, subjected to urethane (Missing)
 22. Chromatphores, Lebistes kept 3 mos. on black, subjected to urethane. Higher magnification (Missing)
 23. Fundulus, single scale. Six(?) weeks on white, subjected to adrenalin
 24. Single scale, Fundulus, six(?) weeks on black, subjected to adrenalin
 25. Single scale, Fundulus, six(?) weeks on white, subjected to urethane
 26. Single scale, Fundulus, six(?) weeks black, subjected to urethane
 27. Snout, Lebistes, reared on white, subjected to adrenalin, living (Missing)
 28. Snout, Lebistes, reared on black, subjected to adrenalin, living
 29. Snout, Lebistes, reared on white, then 25 days on black, subjected to adrenalin, living (Missing)

BOX**FOLDER TITLE****V-B COLOR CHANGE (cont.)**

- 4
30. Dorsal view, trunk Lebistes 3 mos. on white, subjected to adrenalin
 31. Dorsal view, trunk Lebistes 3 mos. on white, then 10 days on black, subjected to adrenalin
 32. Snout, Lebistes, reared on black, then 8 days on white, subjected to adrenalin, living
 33. Snout, Lebistes, reared on black, then 26 days on white, subjected to adrenalin
 34. Dorsal view, trunk Lebistes reared on black, then 8 days on white, subjected to adrenalin, living
 35. Dorsal view, trunk Lebistes reared on black, then 26 days on white, subjected to adrenalin, living
 36. Snout, Lebistes reared on black, then 8 days on white, subjected to adrenalin, living
 37. Snout, Lebistes reared on black, then 26 days on white, subjected to adrenalin, living
 38. Dorsal view, trunk Lebistes reared on black, subjected to adrenalin, living
 39. Dorsal view, trunk Lebistes reared on black, then 26 days on white, subjected to adrenalin
 40. Dorsal view, trunk Lebistes reared on black, then 8 days on white, subjected to adrenalin, living
 41. Dorsal view, trunk Lebistes reared on black, then 26 days on white, subjected to adrenalin
 42. Dorsal view, trunk Lebistes reared on black, kept 40 minute on white, killed directly
 43. Dorsal view, trunk Lebistes born on white, killed directly
 44. Dorsal view, trunk Lebistes reared on black 3 mos. kept on white 10 days, subjected to adrenalin

BOX**FOLDER TITLE****V-B COLOR CHANGE (cont.)**

- 4
45. Dorsal View, trunk *Lebistes* reared on white 3 mos. kept on black 10 days, subjected to adrenalin
 46. Dorsal view, head *Lebistes* reared 3 mos. on black, subjected to adrenalin
 47. Snout, *Lebistes* reared on black 3 mos. subjected to adrenalin
 48. Dorsal view, head *Lebistes* reared on white 3 mos. subjected to adrenalin
 49. Snout, *Lebistes* reared on white 3 mos. subjected to adrenalin
 50. Head, *Lebistes* reared on white, then 26 days on black, subjected to adrenalin
 51. Head, *Lebistes* born on white, kept 35 minutes on black, subjected to adrenalin

VI- GEOGRAPHY – A COLLECTING TRIPS

1-82 missing

VI- GEOGRAPHY -B EXPEDITION

1. Routes of the *CARNEGIE* during 1928-33 for oceanographic investigations (Broken)
2. Oceanographic stations of the *CARNEGIE* in Pacific, Oct. 1928-Nov. 1929
3. Track of the *CARNEGIE* between San Francisco and Honolulu with positions of stations
4. Norwegian Antarctic Expedition o1930-31, field of operation
5. U.S.C.G.C. *GENERAL GREENE*, Northern oceanographic cruise, No. Atl., July 4-Aug. 18, 1931
6. Projected expeditions in the Pacific Ocean, May, 1929
7. Expeditions in the Pacific 1926-1933
8. *DISCOVERY II*, circumpolar navigation during 1932
9. Status of oceanographic exploration of Pacific Basin, December, 1933

BOX**FOLDER TITLE****VI- GEOGRAPHY -B EXPEDITION (cont.)**

- 4
10. Stations occupied by WILLEBRORD SNELLIUS in E. Indies, and MANSHIU in west Pacific
 11. Southeastern Pacific, northern part. Stations occupied for temperature, salinity
 12. Southeastern Pacific, southern part. Stations occupied for temperature, salinity
 13. Eastern pacific. Stations occupied for temperature, salinity
 14. Antarctica. Stations occupied for temperature, salinity
 15. Oceanographic stations, occupied by Scripps Institution, off southern Calif.
 16. Southeastern Pacific. Off the west coast of northern South America. Stations occupied up to 1934 for temperature and salinity
 17. Central North Pacific. Stations occupied by U.S.S. BUSHNELL in 1934 for temperature and salinity (Missing)

VI-C BIOGEOGRAPHY

1. Distribution of animal kingdom, with reference to land and water (Missing)
2. Diagram showing oceanic faunal and floral areas (after Murray)
3. Abundance of animal life on sea bottom (after Murray)

VI-D GENERAL

1. Channel Islands: San Pedro Channel, outer Santa Barbara Channel
2. Channel islands Santa Barbara Channel
3. Los Angeles harbor and vicinity
4. La Jolla, San Diego, Coronado islands (Missing)
5. Arctic, map showing limits of political sovereignty and claims
6. Pacific off southern California, showing islands, Point Concepcion to Punta Banda

BOX**FOLDER TITLE****VI- GEOGRAPHY -D GENERAL (cont.)**

- 4 7. Pacific Coast, U.S.A.

VII- GEOLOGY -A GENERAL

- 5 1. Geological time-scale as indicated by stratified rocks (Broken)
2. Table of British strata, showing approximate thickness
3. Fauna of the Lower Cambrian Zone. (Walcott, 1889). Lamellibranchiata, Gastropoda
4. Medusites lindstromi and radiates. (Walcott, 1889)
5. Brachiopoda. Lingulella, Acroteta, Iphidea, (Walcott, 1889)

VII-B EARTH PHYSICS

1. The interior of the earth
2. Fig. 4. Surface relief and specific volume (1)
3. Surface relief and specific volume (2)
4. Isostatic equilibrium in the earth's crust
5. A simple case of isostatic equilibrium
6. Diagram, segregation of iron toward center, zone of pallasite surrounding central core
7. Diagram, deformation of a continent
8. Fig 272. Diagram: Gravity and figure of the earth (1)
9. Fig. 273. Diagram: Gravity and figure of the earth
10. Earthquake epicenters, Aleutian Ids. To Philippines. By N. H. Heck
11. Earthquake epicenters, coast Central America, Mexico. 26-yr. period N.H. Heck
12. Relation of geoid and spheroid

BOX**FOLDER TITLE****VII-B EARTH PHYSICS (cont.)**

- 5 13. Density of earth at various depths, compared with Gold-smith's distribution, LaPlace's density law
14. Pressure as a function of depth
15. Continental and oceanic densities and altitudes
16. Densities and altitudes of land areas
17. Relation between surface of solid earth (FF'), idea ellipsoid, and geoid
18. Measurement of curvature of the earth's surface. Fig. 1
19. Measurement of curvature of the earth's surface. Fig. 3
20. Effect of centrifugal force on direction of the plumb line. Fig. 112.

VII-C TOPOGRAPHY AND BOTTOM CONFIGURATION

1. Topography of sea bottom off La Jolla
2. The depths (after Murray) (chart VI)
3. Florida and Bahamas: configuration
4. Shoal north of Cuyo Island, 1914, 1916
5. Shoal north of Cuyo Island, P. I.
6. Submarine crater near Prince of Wales Island
7. Submerged crater 12 nautical mis. west of C. Addington
8. Map illustrating geological history of the Atlantic Ocean
9. Land bridges across the Pacific during the Kainozoic era
10. California and Nevada, geomorphic map
11. Diagram showing average contour of lithosphere. Murray
12. Scripps Submarine Canyon, picture of model. Shepard (Missing)

BOX**FOLDER LIST****VII-C TOPOGRAPHY AND BOTTOM CONFIGURATION (cont.)**

- 5
13. Scripps Submarine Canyon, description. Shepard
 14. Submarine valleys of Georges Bank, contour map of the three canyons
 15. Bottom configuration, Pt. La Jolla. U.S.C. & G.S. Hydro sheet 4809. 1928
 16. Vertical extent of trows on the canon walls (3 canyons)
 17. Topographic map of ocean floor and some adjacent land along the coast of San Diego County
 18. Deep sea soundings by vessels of U.S. Coast & Geodetic survey in 1919 and 1922
 19. Diagram showing relative areas of the lithosphere at various levels above and below sea-level

VII-D EROSION

1. Topographic map, La Jolla to Delmar region. (Broken)
2. Faults, Soledad Valley south of Delmar
3. Bulkhead, seafront, cliff, south of Scripps Institution. (Missing)
4. Angle in bulkhead, Scripps Institution
5. Cliff line, SIO pier north to Torrey Pines
6. Cliffs and jointed sandstone north of SIO pier
7. Graph, cliff recession as function of height of cliff
8. Table of cliff heights and rates of recession per year
9. Landslide about 2 ½ mis. north of SIO pier
10. Landslide south of second arroyo mouth south of Flat Rock
11. Landslide at Pebble Beach
12. Torrey Pines Cliff, north end: Delmar formation, Torrey sands

BOX**FOLDER TITLE****VII-D EROSION (cont.)**

- 5
13. Torrey Pines cliff, north end: detail of Delmar formation
 14. Torrey Pines cliff, south end: sapping below Delmar formation
 15. Torrey Pines cliff, south end: detail, Delmar formation, vertical foliation
 16. Torrey Pines cliff, south end: greater detail, Delmar formation, vertical foliation
 17. Torrey Pines cliff, north end, rock masses on beach
 18. Torrey Pines cliff, north end, spalling off of sandstone beds.
 19. Torrey Pines cliff face, showing cleavage cracks in Torrey sand at top of cliff
 20. Torrey Pines cliff, Delmar formation, spalling off
 21. Torrey Pines cliff base, spalled material, edge of beach
 22. Torrey Pines cliff, second canyon south of Lodge, erosion and cracks
 23. Rock slide south of San Juan Capistrano
 24. Rock slide south of San Juan Capistrano. Near View.
 25. Arroyo mouth south of San Juan Capistrano (1)
 26. Arroyo mouth south of San Juan Capistrano (2)
 27. Rock slide west of San Juan Capistrano
 28. North of Santa Monica, removal of slidden rock from highway
 29. North of Santa Monica, slidden rock
 30. North of Santa Monica, Slidden rock along highway
 31. Cliff recession, Scripps Institution, 1918-1936
 32. Hampton Beach, N.H., showing granite curb, groynes along beach

BOX**FOLDER TITLE****VII-D EROSION (cont.)**

- 5
33. Meander lines erosion near St. Augustine, Fla.
 34. Shore line of New Jersey, Beach Erosion Board, location map
 35. Coney Island, Rockaway beach, 1835 and 1908
 36. Shoreline changes at Barnegat Inlet, N.J. 1839-1932
 37. Assateague Island, inlet, and anchorage. 1849, 1914
 38. Cape Hatteras, change in shoreline; shoreline movement, Assateague anchorage
 39. Barnegate Inlet, cross section changes, 1839-1932
 40. Sea wall in Florida

VII-F FORAMINIFERA (LIVING)

1-25 missing

VII-G MARINE SEDIMENTS

1. Western North Atlantic and Caribbean Sea: bottom deposits
2. Histograms showing average mechanical composition Globigerina cozes, Blue Muds, Red Clays
3. Pteropod ooze (Murray and Renard)

VIII - HISTORY OF SCIENCE -A SCRIPPS INSTITUTION OF OCEANOGRAPHY

1. Scripps IO, early view (Missing)
2. SIO Early view showing pier
3. ALEXANDER AGASSIZ
4. SIO from south. New library building. Duplicate
5. SIO. Library

BOX**FOLDER TITLE****VIII - HISTORY OF SCIENCE -A SCRIPPS INSTITUTION OF OCEANOGRAPHY (cont.)**

- 5
6. SIO from north, showing Director's house
 7. SIO from road north of Director's house
 8. SIO: Library and Ritter Hall
 9. Ritter Hall. Plan of basement
- 6
10. Ritter Hall, First-floor plan
 11. Ritter Hall, Second-floor plan
 12. Scripps Institution bldgs., initial work on Ritter Hall
 13. Entrance, main bldgs, SIO (Missing)
 14. SIO, plan of grounds, main bldgs (Missing)
 15. SIO: first building, George H. Scripps, and salt-water tower.
 16. SIO: early view from top of cliffs on north (Missing)
 17. Scripps Institution: early view of buildings and pier
 18. Scripps Institution: early view of library and George H. Scripps Laboratory (Broken)
 19. Scripps Institution: library and George H. Scripps Laboratory, rounds improvements
 20. Boat SCRIPPS. McEwen reading reversed thermometer
 21. Boat SCRIPPS. Moberg making plankton collection
 22. Boat SCRIPPS, side view 1933
 23. Boat SCRIPPS, oblique side view 1933
 24. SIO, gen'l viewL 3 bldgs, pier, salt water tank. From hill S.E.
 25. SIO, Ritter Hall, Museum-Library, Front view

BOX**FOLDER TITLE****VIII - HISTORY OF SCIENCE -A SCRIPPS INSTITUTION OF OCEANOGRAPHY (cont.)**

- 6
26. Scripps Institution. Early air view of bldg., pier
 27. Scripps Institution. Three bldgs., grounds improvement, from southeast corner
 28. On the AGASSIZ
 29. Boat operations on the AGASSIZ
 30. Boat SCRIPPS, summer of 1935 (Broken)
 31. Boat SCRIPPS, summer of 1935, bottom sampling
 32. Boat SCRIPPS, summer of 1935. Net for zooplankton (Broken)
 33. Boat SCRIPPS, summer of 1935. Attaching Nansen bottle to cable
 34. Boat SCRIPPS, summer of 1935. Reading reversing thermometers
 35. Boat SCRIPPS, summer of 1935. Visiting investigator
 36. Scripps Institution: near view of first building, G. H. Scripps, and water tower
 37. Scripps Institution: floor plan, 1912, G.H. Scripps laboratory. First floor
 38. Scripps Institution: floor plan, 1912, G.H. Scripps laboratory. Second floor
 39. ALEXANDER AGASSIZ: 1908 before remodeling
 40. ALEXANDER AGASSIZ 1912

VIII-B INSTITUTIONS IN GENERAL

1. Japan: Asamushi M.B. Sta. (1)
2. Japan: Asamushi M.B. Sta. (2)
3. Japan: Asamushi M.B. Sta. (3)
4. Japan: Asamushi M.B. Sta. Main entrance

BOX**FOLDER TITLE****VIII-B INSTITUTIONS IN GENERAL (cont.)**

- 6
5. Japan: Asamushi M.B. Sta. Aquaria
 6. Japan: Asamushi M. B. Sta. Morphology class room
 7. Japan:Asamushi M.B. Sta. Physiology class room
 8. Japan: Asamushi M.B. Sta. Biochemical laboratory
 9. Japan: Asamushi M.B. Sta. Caudina. Holothurian
 10. Japan: Asamushi M.B. Sta. Boat landing
 11. Japan: Asamushi M.B. Sta. Terrestrial magnetism & seismology laboratory
 12. Japan: Asamushi M.B. Sta. Shrine
 13. Japan: Asamushi M.B. Sta. Official boarding house
 14. Japan: Asamushi M.B. Sta. Residence
 15. Japan: Asamushi M.B. Sta. Boat landing (2)
 16. Street Scene (Broken)
 17. Japan: Asamushi M.B. Sta. Asasmushi, from shrine garden
 18. Japan: Asamushi M.B. Sta. Water scene from Station
 19. Japan: Asamushi m M.B. Sta. General view from distance
 20. Monaco, La Cote d'Azur
 21. Monaco. Oceanographic Museum
 22. Monaco, Le Rocher
 23. Monaco. Interior of port, le Rocher
 24. Monaco. Oceanographic Museum from the sea side
 25. Moaco. Oceanographic Museum, north façade

BOX**FOLDER TITLE****VIII-B INSTITUTIONS IN GENERAL (cont.)**

- 6 26. Marine Biological Laboratory, Citadel Hill, Plymouth
27. SALPA, Marine Biological Laboratory, Plymouth, England

VIII-C OCEANOGRAPHERS

1. Captain James Cook
2. Matthew Fontaine Maury
3. Lt. M.F. Maury
4. Prince Albert I of Monaco
5. Sir John Murray
6. Karl Alfred Ritter von Zittel
7. Alexander Agassiz
8. Sir Wyville Thomson
9. Major J.W. Powell, 2nd director, U.S.G.S.; Chas. E. Walcott, 3rd director; Sir Archibald Geikie, Director, British Geol. Survey. About 1892
10. Michael Sars
11. Rear-Admiral John E. Pillsbury
12. Sir James Clark Ross
13. Ernst Haeckel
14. Anton Dohrn
15. E. L. Mark
16. Prof. Victor Hensen
17. Prof. Carl Chun
18. Charles Hedley

BOX**FOLDER TITLE****VIII-C OCEANOGRAPHERS (cont.)**

- 6
19. Alfred G. Mayor
 20. Joseph Barrell
 21. Alfred Merz
 22. William Emerson Ritter
 23. Prof. N. Yamasaki
 24. Alfred Merz, in tropical clothes on the "Meteor," April, 1925. His last photo
 25. Emmanuel de Margerie
 26. G.A.F. Molengraaff
 27. V.W. Ekman
 28. V.W. Ekman
 29. Cyril Crossland
 30. Johannes Schmidt
 31. Prof. and Mrs. Johannes Schmidt
 32. Prof. Edward Forbes
 33. Robert T. Hill
 34. Henry M. Barnard
 35. Staff of METEOR. L. to r., Meyer, Wattenberg, Wust, Pratje, Spiess, Kuhlbrodt, Schumacher, Hentschel, Reger, Bonnecke (1927)
- 7
36. Staff of DANA
 37. Sir Matthew Nathan
 38. Otto Pettersson
 39. V. Bjerknes

BOX**FOLDER TITLE****VIII-C OCEANOGRAPHERS (cont.)**

7

40. Rear Admiral Charles Sigsbee

41. Fridtjof Nansen

42. Commdr. Charles Wilkes

43. Martin Knudsen

44. E. J. Allen

45. J. P. Jacobsen

46. Albert Defant

47. Gerhard Schott

48. E. van Everdingen, Jr.

49. E. C. Andrews

50. P.M. van Riel

51. G. Wust

52. Com. On Physical and Chemical Oceanography of the Pacific. Tokyo, 1926

53. Harald U. Sverdrup

54. Johan Hjort

55. H. Boschma

56. Hans Pettersson

57. Kurt Buch

58. H. Yabe

59. S. Hanzawa

BOX**FOLDER TITLE****VIII-C OCEANOGRAPHERS (cont.)**

- 7 60. L. to r.: Prof. Thoulet, F. de Buen, Odon de Buen, Alfonso Chaver, Prof. Richard
61. L. to r.: Gorton, G. Schott, T. Wayland Vaughan, George F. McEwen
62. L. to r.: Rakestraw, Fleming, Buch, Revelle, Moberg
63. H.H. Gran
64. B. Helland-Hansen
65. Sir John Murray
66. Sir Wyville Thomson
67. Prof. Louis Agassiz
68. K. Martin
69. Staff of H.M.S. CHALLENGER
70. Names of staff of H.M.S. CHALLENGER
71. B. Helland-Hansen, G.F. McEwen
72. L. to r.: Sumner, McEwen, Revelle, B. Lloyd, Fleming, Helland-Hansen, Vaughan, Moberg, Allen

VIII-D GENERAL BIOGRAPHY

1. Dr. Robert Koch
2. M.W. Beijerinck
3. S. Winogradsky

IX- MARINE INVERTEBRATES -A GENERAL

- 1-24 missing
25. Phyllosoma of Panulirus (?)

BOX**FOLDER TITLE****IX- MARINE INVERTEBRATES -A GENERAL (cont.)**

7

26-36 missing

X - MARINE PLANKTON -A GENERAL

1. Volkszahl, syst. Struktur des Planktons, Atlantischen Ozean.
DEUTSCHLAND, 1911

2. Wechsel, Planktonpflanze. Geogr. Breite in d. verschiedenen

3. Vertikale Verteilung im Atlantischen Ozean nach Bewölkerungsdichte u. sst.
Struktur

4. Outline, Pacific Coast, Brit. Columbia, Alaska, sections covered in 1923
(Missing)

5. Distribution, logarithms of diatom numbers, Alaska cruise in 1923 (Missing)

6. Microplankton at Southern California piers, 1921

7. Plankton, Chemical data, five-mile station, 1922

8. Plankton, chemical data, ten-mile station, 1922

9. Weekly averages, orders of magnitude. Diatoms, 1920-29

10. Population and temperature of water at 0 and 50 m (Missing)

11. Relative size of organisms and meshes of collecting net. To show loss of
small organisms (Missing)

12. Plankton diatoms, La Jolla, 1926, Stations 1 and 2 (Missing)

13. Plankton diatom, Station 1, 10-miles off (Missing)

14. Plankton diatoms, 1927, Station 2, 5-miles off (Missing)

15. Diatoms, 10-year series La Jolla, Hueneme, orders of magnitude, nos. per
week

16. Ten years dinoflagellates, 1920-1929, orders of magnitude of weekly
averages (Missing)

BOX**FOLDER TITLE****X - MARINE PLANKTON -A GENERAL (cont.)**

- 7
17. Ten years temperature, 1920-1929, weekly averages
 18. Bacteria, Insolation, and microplankton by months in 1933 (Missing)
 19. Plankton survey, South Georgia, Dec. Jan. 1926-27, showing average phosphate content (Missing)
 20. Phytoplankton in South Georgia Dec. Jan., 1926-27
 21. General distribution of diatoms, South Georgia, Jan.-Feb, 193
 22. General distribution of diatoms, South Georgia, November, 1930 (Missing)

X- MARINE PLANKTON -B ZOOPLANKTON

1. Radiolaria: Nassellaria: Cyrtoidea 1 (Missing)
2. Radiolaria: Nassellaria: Cyrtoidea 2(Missing)
3. Radiolaria: Nassellaria: Cyrtoidea 3
4. Radiolaria: Nassellaria: Cyrtoidea 4 (Missing)
5. Radiolaria: Nassellaria: Cyrtoidea 5 (Missing)
6. Radiolaria: Nassellaria: Cyrtoidea 6 (Missing)
7. Radiolaria: Nassellaria: Cyrtoidea 7
8. Radiolaria: Nassellaria: Cyrtoidea 8
9. Radiolaria: Nassellaria: Spyroidea (Missing)
10. Radiolaria: Nassellaria: Stephoidea (Missing)
11. Radiolaria: Phaedaria: Corgonetta (Missing)
12. Radiolaria: Phaedaria: Beduattidea (Missing)
13. Radiolaria: Nassellaria: Phaegromia (Missing)
14. Radiolaria: Spumellaria: Sphaeroidea, 1 (Missing)

BOX**FOLDER TITLE****X- MARINE PLANKTON -B ZOOPLANKTON (cont.)**

- 7
15. Radiolaria: Spumellaria: Sphaeroidea, 2
 16. Radiolaria: Spumellaria: Sphaeroidea, 3
 17. Radiolaria: Spumellaria: Sphaeroidea, 4 (Missing)
 18. Radiolaria: Spumellaria: Sphaeroidea, 5
 19. Radiolaria: Spumellaria: Sphaeroidea, 6
 20. Radiolaria: Spumellaria, Sphaeroidea (Missing)
 21. Radiolaria: Spumellaria: Prunoidea, 2(Missing)
 22. Radiolaria: Spumellaria: Prunoidea, 1
 23. Radiolaria: Spumellaria: Prunoidea, 2 (Missing)
 24. Radiolaria: Spumellaria: Discoidea 1(Missing)
 25. Radiolaria: Spumellaria: Discoidea 2 (Missing)
 26. Radiolaria: Spumellaria: Discoidea, 3.
 27. Radiolaria: Spumellaria: Discoidea 4. (Missing)
 28. Siphonophore (Missing)
 29. Stephalia Corona
 30. Pleurobrachia, distribution surface hauls by months
 31. Vertical distribution, Chaetognatha, San Diego region
 32. Relative number specimens, Sagitta, 20 hours hauling
 33. Surface distribution of *S. Bipunctata*
 34. Vertical distribution of *S. bipunctata*
 35. Vertical distribution, *S. bipunctata*, Aug., Nov., ec., 1911

BOX**FOLDER TITLE****X- MARINE PLANKTON -B ZOOPLANKTON (cont.)**

7

36. Distribution of *S. bipunctata* in relation to temperature
37. Distribution of *S. bipunctata* in relation to temperature, three depths
38. Surface distribution of *S. bipunctata* with respect to temperature
39. Surface distribution of *S. bipunctata* in relation to salinity and temperature
40. Surface distribution of *S. bipunctata* in relation to salinity
41. Evening distribution of *S. bipunctata* on surface
42. Effect of day and night on distribution of *S. bipunctata*
43. Surface distribution of *S. bipunctata* with respect to time of day
44. Copepods: list of species studied singly, occurrence in different sorts of hauls
45. *Calanus finmarchicus* Gunner
46. Distribution, *C. finmarchicus*, hourly averages, depths, time of day. Nets compared
47. Totals per hour, 10 species at surface at night
48. Numbers at different depths, day and night compared
49. Tunicates, hydromedusa
50. Ctenophora, Medusa, Cladoera, Tunicate (Missing)
51. Radiolaria, Ctenophore, Tunicate, larval crustacean (Missing)
52. *Octaneus berdonni* (Missing)
53. *Challengeria*
54. *Oikopleura*
55. Animal with filtering net. Appendicularia, *Kowalevskia*

BOX**FOLDER TITLE****X- MARINE PLANKTON -B ZOOPLANKTON (cont.)**

- 7
56. Oikopleura albicans,: fully expanded filtering net (Missing)
 57. Copepod (Missing)
 58. Euchaeta norvegica
 59. Radiolaria: Spumellaria: Sphaeroidea, Prunoidea (Missing)

X- MARINE PLANKTON -C PHYTOPLANKTON

1. Mesodinium rubrum
2. (Missing)
- 3-5 (Moved to X Marine Plankton - A General)
6. Diatoms from oyster stomach, Chesapeake Bay (Missing)
7. Diatoms from oyster stomach, Colon, Panama (Missing)
8. Diatoms from St. Peter, Hungary
9. Diatoms from oyster stomach, St. Peter, Hungary, 2 (Missing)
10. Diatoms from oyster stomach, Madagascar (Missing)
11. Chaetoeras, Corethros, Bidulphia, Rhizoselenis, Monterey Bay, California (Missing)
12. Rhizoslenia, Synedra
13. Melosira nummuloides Ag. var. Cosmop., chiefly N. Atlantic
14. Melosira sulcata Her. Cosmopolitan
15. Melosira undulate Kutz. Cosop. San Francisco Bay
16. Hyalodiscus propelanus Mann. Philippines
17. Hyalodiscus crepitans Mann. Antarctic
18. Stephanopyxis turris (Grev.) Ralfs. Cosmopolitan

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 7
19. *Stehanopyxis teissflogii* A. Sch. Locality unknown (Missing)
 20. *Thalassiosira gravida* Cl. N. Atl., Pacific, Arctic
 21. *Thalassiosira gravida*, auxospore formation
 22. *Coscinodiscus excavates* Grev. Nottingham earth, Md.; Arctic
 23. *Coscinodiscus oculus-iridus* Her. Cosmop (Missing)
- 8
24. *Coscinodiscus scitulus* Mann. Philippines
 25. *Coscinodiscus ciliatus* Mann. Philippines
 26. *Anisodiscus adeei* Mann. Philippines
 27. *Stictodiscus parallelus* (Grev.) V.H. approaching *S. harrisonianus* (norm.) V.H. Cosmop
 28. *Stictodiscus californicus* Grev. Var. called *S. truanii* Witt. Cosmopolitan, mainly Pacific
 29. *Arachoidiscus ornatus* Ehr. Cosmopolitan; frequent Calif. Coast
 30. *Archnoidiscus ehrenbergii* Bail. (Approaching *A. indicus* Ehr.) Cosmop., abundant in California
 31. *Actinoptychus bismarckii* A. Sch. Sychelle Isl.
 32. *Actinoptychus splendens* Shad. Cosmopolitan
 33. *Actinoptychus heliopelta* Grun. Nottingham earth, Md. , Va. (Broken)
 34. *Actinoptychus wittianus* Jan. Fossil, N. Zeal. Barbados, etc.
 35. *Actinoptchus supersplendens* Mann. Monterey Bay, Calif. (Broken)
 36. *Asteromphalus heptactis* (Brev.) Ralfs
 37. *Aulacodiscus rogersii* (Bail) Ralfs Cosmopolitan
 38. *Aulacodiscus rogersii* (Bail) Grun. Cosmopolitan

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8
39. *Aulacodiscus oregonus* Bail. Pacific
 40. *Aulacodiscus atulus* Grun. Fossil, N. Zealand
 41. *Aulacodiscus multispadix* Br. Fossil, Sendai, Japan
 42. *Auliscus priunosus* Bail var. *sansibarica* Grun. Fossil, Bory, Hungary
 43. *Auliscus spinosys* F. Chris. Fossil. Maryland, Barbados; Atlantic City, N.J.
 44. *Auliscus caelatus* Bail. Cosmopolitan
 45. *Auliscus hauckii* Pant. Fossil. St. Peter, Hungary
 46. *Auliscus hardmanianus* Grev. Fossil, N. Zealand
 47. *Pseudo-auliscus Petitii* Leud. Forb. Ceylon; tropical Pacif.
 48. *Pseudoauliscus (Eupodiscus) Oculatus* (Grev.) Sch. At. 14910
 49. *Caetoceros (Bacteriastrum) variana* (Laud.) V.H. Cosmop., especially N. Atlantic (Missing)
 50. *Chaetoceros atlanticum* Cl. Cosmopolitan
 51. *Pseudo-stictodiscus angulatus* Grun. Fossil, Jutland Barbados, Russia
 52. *Trigonium venosum* (Bright) Cl. Fossil, Barbados
 53. *Trigonium arcticum* (Bright) Cl. Hexagonal form (Missing)
 54. *Trigonium arcticum* (Bright) Cl. Biangular var. known as *Biddulphia baldena* (Ehr.) Pacific Ocean, general
 55. *Biddulphia (amphitetras) antediluviana* (Ehr.) V.H. Atlantic, (Pacific?); also fossil
 56. *Biddulphia mollis* Mann. Antarctic
 57. *Biddulphia trisculca* (Bail) Boyer Campeche Bay (fossil at Brunn, Moravia.)
 58. *Biddulphia spiculifera* Mann. Philippines

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8 59. *Biddulphia grunowii* Jan. GARELLS Exped. No locality (Missing)
60. *Biddulphia cuspidate* (Jan.) Distinct from *B. Favus* of which a quadrate var. in Pacific Cosmop. (Missing)
61. *Biddulphia peruviana* Grun. S. Francisco; Peruvian guano
62. *Biddulphia exacta* Mann. Philippines (Missing)
63. *Biddulphia pulchella* Gray. Cosmopolitan
64. *Biddulphia extensa* Mann. Pacific, esp. S. Francisco Bay (Missing)
65. *Biddulphia* (*Triceratium*) *pontesrinns* (Bhr.) Boyer. Cosmop. (also fossil) (Missing)
66. *Biddulphia* (*Triceratium*) *norlandii* Gr. & St. approaching *Entosenia Davyana* Grev Fossil, N. Zealand (Missing)
67. *Biddulphia* (*Triceratium*) *campechiana* (Grun.) Boyer. Gulf of Mexico, Philippines
68. *Odontotropis carinata* Grun. Fossil, Jutland
69. *Isthmia minima* Bail & Harv. Philippines (perhaps Cosmop) (Broken)
70. *Grammatophora marina* (Lyng.) Kutz. Cosmopolitan
71. *Grammatophora macilenta* W. Sm. Cosmopolitan
72. *Meridion circulare* Ag. (and *Ceratoneis arcus* Kutz). Cosmopolitan
73. *Dimerogramma opulens* Mann. Philippines
74. *Synedra nitzschioides* (Grun.) V.H. *Thalassiothrix nitz.* N. Atl. & Pacific; Arctic
75. *Achnanthes crenulata* Grun Philippines.
76. *Achnanthes tenuistanros* Mann. Philippines & Borneo
77. *Achnanthes longipes* Ag. Cosop. (Missing)

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8 78. *Camploneis* (*Cocconeis*) *grevillei* (W. Sm.) Grun. Cosmop
79. *Cocconeis* *os-pristis* Mann. Philippines (Missing)
80. *Cocconeis* *kamchatkiensis* Mann. Arctic
81. *Navicula* *californica* Grev. Pacific, Campeche Bay, etc.
82. *Navicula* *smithii* Breb. Cosmopolitan (also fossil)
83. *Naicula* *crabro* Her. Cosmopolitan
84. *Navicula* *gemmata* Grev. (the var. called *N. Grunowii* Ra.) Philippines
85. *Navicula* *permagua* (Bail) Ralfs. Cosmopolitan
86. *Navicula* *lyra* Ehr. Var. *intermedia* Grun. Perhaps Cosmop(Missing)
87. *Navicula* *soectabilis* Greg. Variety peculiar to the Philippines
88. *Navicula* *controversa* Mann. Nom. Nov. Arctic & northern Pacific (Missing)
89. *Navicula* *aiberica* Grun. Arctic (Missing)
90. *Navicula* *asper* Ehr. Cosmop (Missing)
91. *Navicula* *bombus* Ehr. Cosmop (Missing)
92. *Amphiprora* *o'swaldii* var. Philippines
93. *Mastogloia* *angulata* Lewis. Cosmopolitan
94. *Mastogloia* *jelenickiana* Grun. Pacific So. Amer. & Philippines (Missing)
95. *Mastogloia* *splendida* (Greg.) Cl. Cosmopolitan
96. *Cymbella* *mexicana* (Ehr) Cl. Narrow variety. Cosmopolitan
97. *Amphora* *compacta* Mann. Philippines
98. *Amphora* *dura* Mann. Philippines

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8
99. *Amphora magnifica* Grev. Philippines, etc.
100. *Amphora sima* Mann. Philippines
101. *Amphora nodosa* Br. Variet. Philippines
102. *Amphora anceps* Mann Philippines
103. *Surirella fastuesa* Ehr. Cosmop. (Missing)
104. *Surirella patens* A. Sch. Port Townsend, Wash.
105. *Surirella baldjickii* Norm. Mediterranean (fossil, Hungary)
106. *Surirella fabigerii* Lewis. Cosmop. (Missing)
107. *Campylodiscus perspicuus* Mann. Philip. (Missing)
108. *Campylodiscus echeneis* Ehr. Atlantic, Pacific, temperate
109. *Chaetoceros concavicornis* (top); *C. atlanticus* var. *Neapolitana* (l. Left); *C. atlanticus* var. ? (l. right)
110. *Chaetoceros similis* (top); *C. Dadayi* (l. Center); *C. messanensis* (furca) (rt. Center); *C. danicus* (btm).
111. *Chaetoceros decipiens* (left); *C. Lorenzianus* (right)
112. *Chaetoceros constrictus* (up. Rt.); *C. compressus* (l. left); *C. diadema* (rt.)
113. *Chaetoceros didymus*; spores of same, (l. Left).
114. *Chaetoceros lacinosus* (left); *C. affinis* (up. rt.); *C. costatus* (center btm.); *C. cinctus*- chain and valve view (lower rt.)
115. *Chaetoceros debilis* (upper left & center); *C. curvisetus* (upper & lower rt.); *C. socialis* (center & lower rt.)
116. *Chaetoceros radicans* (scolopendra) (Missing)
117. *Bacteriastrum delicatulum* (up. left & lower rt. & left); *B. elongatum* (upper rt.)

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8 118. *Rhizosolenia setigera* (left); *R. semispina* (2nd from left); *R. stolterfothii* (upper center). *R. styloformis* (lower center); *R. fragilissima* (2nd from rt.); *R. delicatula* (right)
119. *Rhizosolenia robusta* (2 at top); *R. alata* (3 at lower rt.) *R. imbricate* var. *shrubsolei* (center lower); *R. calcar-avis* (2nd from rt.) *R. alata* var. *curvirostrus* (rt.).
120. *Biddulphia mobiliensis* (upper left); *B. aurita* (lower left); *B. extensa* (*longicruris*) (center, upper & lower rt.)
121. *Thalassiosira gravid* (upper left); *T. nordenskioldii* (2 – center & upper center); *T. decipiens* (upper rt.); *T. aestivalis* (lower rt.); *T. subtilis* (lower center); *T. rotula* (l. rt.)
122. *Coscinosira polychorda* (upper left); *Lithodesmium undulatum* (2 chains & valve view); *Cerataulina bergoni* (2 cells – lower left); *Eucampia zoodiacus* (3 chains – rt. Top & center); *Streptothecha thamesis* (btm.)
123. *Corethron valdiviae* (upper left); *C. criophilum* (upper rt.); *Skeletonema costatum* (4 chains- lower left & center), *Ditylum brightwelli* (2-lower rt. & center)
124. *Lauderua bireakus* (upper left) *Leptocylindrus danicus* (2nd from left top); *Dactyliosolen mediterraneus* (3rd, 4th, from left top); *Hemiaulus hauckii* (3 – upper, upper & lower 2nd from rt.); *H. sinensis* (Heibergii) (center btm.); *Schroderella delicatula* (2-lower left)
125. *Astarionella japonica* (top left); *Thalassiothrix nitzechicoides* (top rt.); *Istericonella kariana* (2-center, rt. Center); *Striatella unipumetata* (lower left); *Bacillaria paradoxa* (lower rt.); *Nitzechia seriata* (btm) (Missing)
126. *Thalassiothrix heteromorpha* (*acuta*)? (girdle view of left; valve view, 2nd from left; colony, upper center); *Pleuronigma* species (2nd from rt. top); *Grammatophora marina* (top rt.), *Bragiaria crotonenais* (center); *Synedra undulate* (2nd from btm); *Nitzahia longissima* (btm.) *Diatoma* from Sea of Java; *Chastoeros diversus* (upper left); *C. laeyis* (upper rt.) *Rhizosolenia elevei* (lower left) *R. cylindrus* (lower center); *R. arafurens* (lower rt.) (Missing)

BOX**FOLDER TITLE****X- MARINE PLANKTON -C PHYTOPLANKTON (cont.)**

- 8 127. Diatoms from Sea of Java: *Chaetoceros diversus* (upper left); *C. laevis* (upper rt.); *Rhizosolenia clevei* (lower left); *R. cylindrus* (lower center); *R. arafurensis* (lower rt.)
128. Diatoms from Sea of Java: *Bacteriastrum comosum* (left); *Ditylum sol* (upper rt.); *Biddulphia sinensis* (lower rt.)
129. Diatoms from Sea of Java: *Chaetoceros peruvianus* (top left); *Surirella gemma* (top rt.); *Rhaphonesis amphiceros* var.? (center left); *Nitzschia panduriformis* var. *continua* (center); *Mastogloia minuta* (center rt.); *Nitzschia sigma* var. *interedens* (3rd from btm. rt.); *N. Lorenziana* var. *incurve* (2nd from btm. rt.); *N. sigma* var. *indica* (btm.)
130. Diatoms from Australia: *Chaetoceros coarctatus* (top); *C. rostratus* (center); *C. denticulatus* (lower left); *C. Lauderii* (lower center), *C. anastomosans* (lower rt.)
131. Diatoms from Australia: *Stephanopyxis palmeriana* (u. left, up. center); *S. turris* (rt. top); *Chaetoceros pseudourvisetus* (3- lower left & center) *Cerataulina compacta* (3rd from rt. center); *Ditylum brightwelli* (2nd from rt. center); *Bacteriastrum hyalinum* (2nd from rt. btm.); *Rhizosolenia fragilissima* (lower rt.)
132. Diatoms from Australia: *Rhizosolenia Styliformis* var. *latissima* (top left); *R. Bergonii* (2nd, 3rd from left top); *R. hyaline* (2-2d from rt.) *R. acuminate* (top, rt.); *R. imbricate* (lower left). *Lauderia borealis* (2nd from left lower); *Guinardia flaccid* (center) *Cerataulina Bergoni* (2nd from bt., center); *Eucampia cornuta* (btm.center); *Climacodium Frauenfeldianum* (btm., rt.)
133. *Ceratium*, *Gonyaulax*, *Dinophysis*
134. *Coccolithophoridae*, different types
135. Cell-wall of a diatom, *Coscinodiscus*
136. *Coscinodiscus rex*; pelagic diatoms of ribbon type
137. *Chaetoceras decipiens*
138. Pelagic diatom of the hair type. *Rhizosolenia hebetatasemispina*
139. *Lauderia annulata.*, cell, chain, chromatophores

BOX**FOLDER TITLE****XI METEOROLOGY**

- 9
1. Temperature, humidity, at La Jolla, Eureka, Berkeley, Mojave Desert
 2. Temperature, Victorville, Berkeley, Eureka. Nov., 1914
 3. Temperature, Victorville, Berkeley, Eureka Nov., 1914
 4. Humidity, Victorville, Berkeley, Eureka. Nov. 1914
 5. Humidity, Victorville, Berkeley, Eureka. June, 1915
 6. Temperature, humidity: Victorville, Eureka, May, 1915
 7. Velo cloud over San Diego Bay
 8. Dissipation, velo cloud over San Diego Bay (1)
 9. Dissipation, velo cloud over San Diego Bay (2)
 10. Barometric pressure gradient, ocean and surface temperature
 11. Chart of isobaric lines for July. After Buchan
 12. Isothermal chart for January. After Buchan
 13. Isothermal chart for July. After Buchan
 14. Januar-Isobaren. After Hann
 15. Juli-Isobaren. After Hann
 16. Ferrel's scheme of atmospheric circulation
 17. Distribution of atmospheric temperature in latitude for year, for January, for July
 18. Ferrel's scheme of distribution of pressure with elevation and latitude
 19. Condition of atmosphere under elementary hypothetical conditions. Gravitation and the ideal sphere
 20. Curves of solar constant and sun-spot numbers. C.G. Abbot

BOX**FOLDER TITLE****XI METEOROLOGY**

- 9
21. Precipitation for 1921. Graph
 22. Illustration, "Forecast of floods" H.H. Clayton in "System," Jan., 1927
 23. Formation of a secondary cyclone as a wave on the cold front of mother cyclone
 24. Life cycle of a cyclone. (1) V. Bjerknes
 25. Radiation and circulation. Table of thermo values for various stations
 26. Mean annual temperature, west coast U.S. and Mexico
 27. Januar-isothermen. After Hann
 28. Juli-isothermen. After Hann
 29. Mean isobars, prevailing winds over Pacific Ocean, July
 30. Stratus cloud below Mt. Wilson
 31. Cumulus clouds
 32. Soaring under clouds at the Wasserkuppe, Germany. (1)
 33. Soaring under clouds at the Wasserkuppe, Germany (2)
 34. Life cycle of cyclones (2)
 35. German sail-plane "Fafnir"
 36. Point Dume, vertical section east and west, showing isotherms
 37. Bjerknes theory
 38. Bjerknes polar front theory. Idealized cyclone
 39. Vertical sections through cyclones in different stages of development
 40. Winds of northern Indian Ocean for July and January
 41. Barometric pressure and winds XI in Atlantic in February

BOX**FOLDER TITLE****XI METEOROLOGY**

- 9
42. Isobaric lines for January, After Buchan
 43. Average pressure distribution over N.E. Pacific, Jan., 1926
 44. Average pressure distribution over N.E. Pacific, Jan. 25 to Feb. 3, 1926
 45. Departure of pressure gradients, La Jolla ocean surface temperature, seasonal rain.
 46. Meteorology. List of equations for reference
 47. Five-six year cycles for San Diego, Sacramento, Tennessee River, Boston, Rio
 48. Sun-spots, 1840-1920, and rainfall cycles, S.D., Baltimore, Susquehanna, Tennessee, etc.
 49. Accumulated departures from average rain for different localities. Showing Bruckner and secular cycles
 50. Comparison of lake levels and Wolf numbers
 51. San Diego rainfall, three-season overlapping sums. Sunspot numbers
 52. Relation between surface temperature at La Jolla, 1916 to 1929, & rainfall south coast; correlation coefficients in northern & southern California. 2 tables
 53. Mid-Pacific temperatures in Aug. – Oct., and La Jolla sea temperatures, inverted Aug. 1- Oct. 15
 54. Ocean surface temperature at La Jolla, Aug. 1-Oct. 15, & seasonal rainfall at various stations
 55. Luftdruck und Winde Über den Indischen Ozean im Januar
 56. Luftdruck und Wind Über dem Indischen Ozean im Juli
 57. Winderhältnisse des Stillen Ozeans im Januar und Februar. Deutsche Seewarte
 58. Windverhältnisse des Stillen Ozeans im Juli und August. Deutsche Seewarte

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY -A GENERAL**

- 9
1. Deep-sea soundings. General data
 2. Distribution of number of observations, No. Pac. U.S. Hydrographic Office, 1932
 3. Distribution of number of observations. Chart, No. Pac., U.S. Hydrographic Office 1932
 4. Hydrographische Reihenmessungen seit 1870 im Atlantischen Ozean. Over 1,000 m.
 5. Hydrographische Reihenmessungen seit 1870 im Atlantischen Ozean. Over 3,000 m.
 6. Hydrographische Reihenmessungen seit 1870 im Indische Ozean 1,000-30,000 m.
 7. Northeast tropical Pacific. Showing stations for vertical sections of temperature and salinity before 1934
 8. Lage der Stationen, westlichen u. zentralen Langeschnitte durch Pazifischen Ozean
 9. Profiles, Gulf of Alaska, McEwen. Intern. Fish. Commission, 1927-28
 10. Lage der Stationen, west-lichen, ostlichen Langschnitt durch den Atlantischen Ozean
 11. Hydrographische Reihenmessungen seit 1870 im Stillen Ozean, 1000-3000 m. (without "Carnegie lines": see VI-B 6)
 12. Oceanographic data rec'd at Scripps Institution March 15, 1935, to March, 15, 1936
 13. Series of Stations in the Atlantic between Cape Henry and Habana
 14. Illustration of table showing series of observations

XII - PHYSICAL OCEANOGRAPHY --B THEORY

1. Gravitation and centrifugal force

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --B THEORY (cont.)**

9

2. Temperature-salinity relations
3. Equation: ocean temperature
4. Formula for normal sea temperature. Equation
5. Analysis, time rate of temperature change at series of depths, Pac. Ocean near San Diego. July
6. Diagram, distribution: small water masses according to temperature reductions
7. Equation: surface and ocean temperature
8. Ausdehnung v. Troposphäre u. Stratosphäre an der Meeresoberfläche, u. Lage d. Langsschnitte
9. Formula for upwelling velocity. Equation
10. Diagrams of cyclonic and anticyclonic currents
11. Lage d. Polargrenzfläche zwischen Polarstrom u. Westwinddrift auf der Nordhemisphäre
12. Lagerung der Wassermassen im äquatorialen Stromsystem
13. Meridionalschnitt durch den hydrosphärischen zirkulären Wirbel
14. Current from center of production to center of consumption in oceanic layer; schematic diagram, surface water, Gulf Stream
15. Schematische Darstellung d. Temperaturabnahme mit der Tiefe u. der ozeanischen Schichten
16. Dynamical calculation of currents
17. Diagrammatic front-view, relative positions of major elements of a steady gradient current
18. Section illustrating Bjerknes theory

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --B THEORY (cont.)**

- 9
19. Meridionalen Komponenten d. Tiefenzirkulation in einem symmetrisch aufgebauten Ozean, (schematische Darstellung)
 20. Diagrammatic section, inflowing, outflowing currents, Mediterranean, No. Atl.; Med., Black Sea
 21. Distance from Coast plotted against depth of water. Upwelling circulation
 22. Wind-driven current in relation to temperature. Table
 23. Curves, theoretical relation, temperature to depth
 24. Velocity of surface water, forces that determine
- 10
25. Diagram, general circulation of waters of Atlantic Ocean
 26. Meridional section showing isobaric surfaces, isotheric surfaces, deduced directions
 27. Diagram, effect of wind of lee and windward shores
 28. Convergence and divergence in the Indian Ocean. January
 29. Convergence and divergence in the Indian Ocean. July
 30. Analysis, time rate of temperature change at series of depths, Pac. Ocean near San Diego. Month of June
 31. Formulae and meaning of symbols in XII-B, 5, 30

XII - PHYSICAL OCEANOGRAPHY --C CIRCULATION

1. Stromungen der Meeresoberflache (Nordischer Winter) Eisgrenzne. Atlatischer Ozean
2. Chart of nontidal currents for Pacific Ocean, July to September
3. Current systems of Indian Ocean
4. Main current systems, North Atl., So.Atl., No. Pac., So. Pac., Indian Ocean
5. Kurosiwo, Oyasiwo, No. Pac. Wust, Uda

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --C CIRCULATION (cont.)**

10

6. Section, Kurosiwo in August, normal ear. Uda
7. Velocity of horizontal ocean currents in relation to distance from coast, series of depths, Ocean Cape, Dec. 1927
8. Velocity of horizontal ocean currents in relation to distance from coast, series of depths, Ocean Cape, Jan. 1928
9. Circulation, Atlantic Ocean. North winter, summer. Deutsche Seewarte
10. Velocity of horizontal ocean currents in relation to distance from coast, series of depths, Cape Cleare, Jan. 1928 (Broken)
11. Velocity of horizontal ocean currents in relation to distance from coast, series of depths, Cape Chiniak, Jan. 1928
12. Antarctic Ocean, bathymetric chart, showing flow of Antarctic, warm, mixed waters
13. Beobachtungsmaterial und die Lage d. Profile und Stromkonvergenzen. Indian Ocean
14. Pacific Ocean, bathymetric chart. After Murray
15. Computation of surface currents from temperature and winds between Panama and Seattle, Dec. 1925 to May, 1926
16. Compuation of surface currents from temperature and winds, between Panama and Seattle, Jan., Feb., 1926 (2nd method)
- 17-20 Moved to XII – PHYSICAL OCEANOGRAPHY - G TIDES
21. Schematic representations of the Kuro-Shiwo and the Gulf Stream (Wust)
22. Schematic representations of distribution of water masses of different densities in the equatorial region (Sverdrup)
23. Computed currents through Drake Passage at approximate depth of 600 eters (Clowes)
24. Schematic representation of north-south circulation in the Atlantic (Wust)

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --C CIRCULATION (cont.)**

- 10 25. Computation of surface currents from surface temperatures and winds from San Diego southwest, March, 1925. Table 4
26. Computation of current velocities in Japan Stream from temperatures. Table 8.
27. Explanation of symbols in tables 4, 5, 8
28. Chart of non-tidal currents for the Pacific Ocean, January to March
29. Die Stromungen des subtropischen Ronvergenzgebieten im sudindischen Ozean (Januar)
30. Die Stromungaen des subtropischen Konvergenzgebieten im sudindischen Ozean (Juli)
31. Indischer Ozean. Wasserbewegung an der Oberflache im Januar
32. Indischer Ozean. Wasserbewegung an der Oberflache im Juli
33. Oberflachenstromungskarte des Atlantischen Ozeans. Februar. (H.H. Meyer)
34. Pazifische Stromungen im Nordsommer nach einem vorlaufigen Entwurfe. Merz
35. Antarctic Convergence, two surface currents influencing South Georgia
36. Probable average positions of Antarctic, sub-tropical, and tropical convergences in the South Atlantic
37. South Georgia, surface-water movements around, in Dec.-Jan., 1926-27

XII - PHYSICAL OCEANOGRAPHY --D TEMPERATURE AND SALINITY

1. Curves, showing observed serial temperatures in a region approx. 8 mis. west of Coronado Islands. Figs. 10-15
2. Curves, showing observed temperatures in a region approx. 8 mis. west of Coronado Islands. Figs. 4-9
3. Mean annual surface temperature of ocean

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --D TEMPERATURE AND SALINITY (cont.)**

- 10
4. Distribution of surface temperature, 1000 mis w. of San Diego, S.D. Bay, Madeira, off Yokohama, 1000 mis. off Pt. Concepcion. And Mendocino
 5. Surface temperatures, Cape Flattery to San Diego, U.S.S. TUSCARORA
 6. Isotherms of the surface of the sea
 7. Ocean currents and isotherms showing mean temperature of surface of ocean water for year (Davis's Atlas)
 8. Pacific Ocean, showing temperature at surface. After Schott-Schu (Missing)
 9. Isotherms for August, 1913, Channel Islands region
 10. Temperature, Pacific Ocean, Central basin, CARNEGIE
 11. Salinity, Pacific Ocean, Central Basin, CARNEGIE
 12. Salinity at surface, after Schott
 13. Distribution of salinity at surface, 5 degree zones. Krummel
 14. Point Dume, salinity plotted against depth
 15. Atlantic Ocean, east basin, after Wust
 16. Atlantic Ocean, west basin, after Wust
 17. Section across Wyville-Thomson Ridge (Missing)
 18. Surface isotherms for January. Eastern Pacific
 19. Indian Ocean, east section, after Moller
 20. Pacific Ocean, west section, after Wust
 21. Surface water temperatures. August (from H. Thorade) Eastern Pacific
 22. Isothermal lines of world at 1000 fathoms

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --D TEMPERATURE AND SALINITY (cont.)**

- 10
23. Isohalines of surface of the oceans
 24. Observed and computed monthly temperatures at 40 meters, at surface; normal temperatures off San Diego
 25. Seasonal temperature distribution at a series of depths from surface to 500 meters
 26. Seasonal salinity at a series of depths from surface to 450 meters
 27. Surface isotherms for August. Eastern Pacific
 28. Isohalines for August. Southern California
 29. Atlantic Ocean. East basin after Wust
 30. Atlantic Ocean. West basin after Wust
 31. Indian Ocean. East section. Section along meridian 120 degrees E. After Moller
 32. Mean surface temperature in 5 degree zones, according to Krummel
 33. Indian Ocean. West section, after Moller. Temperature
 34. Indian Ocean. West section, salinity. After Moller-Merz
 35. Pacific Ocean. West section, after Wust (2)
 36. Langschnitt Sud-Nord... Indischen Ozean. Langschnitt ab Mauritius
 37. Die Verteilung der Oberflachentemperaturen im Indischen Ozean. Juni. Dez.
 38. Monthly averages of serial ocean salinities near San Diego. May-September (1)
 39. Monthly averages of serial ocean salinities near San Diego. May-September (2)
 40. Mean annual salinity, northeast Pacific. Surface

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY -- E LIGHT**

10

1. Light intensities at various depths. Table
2. Penetration of light into sea-water, English Channel. Poole and Atkins
3. Penetration of light into sea-water, La Jolla. Burt Richardson
4. Penetration of light into sea-water, Puget Sound. Shelford and Gail
5. Relation of amount of light in foot-candles to depth below the sea surface
6. Relation of intensity, light of different wave-lengths to depth below the surface
7. Intensity of radiation of different wave-lengths of sunlight compared with photoelectric cell
8. Spectral comparison of three light sources
9. Spectra of several light sources
10. Spectra of several carbon arcs
11. Spectra of several sources of light
12. Spectral transmission of a dozen commercial glasses
13. The entire gamut of electro-magnetic waves
14. Analysis of the time-rate of change of water temperature in a reservoir. 1.7 m. deep
15. Penetration of light into sea water. Table 14. Mean value of absorption coefficient

XII - PHYSICAL OCEANOGRAPHY --F HIGH WAVES

1. An area at Balboa Pier during a quiet period
2. High waves at Balboa Pier
3. High waves at Balboa Pier (2)

BOX**FOLDER TITLE****XII - PHYSICAL OCEANOGRAPHY --F HIGH WAVES**

10 4. Pool formed in same area later by water thrown over crest of beach. Balboa Pier

5. Santa Monica Breakwater

11 6. Part of Roosevelt Highway along coast near Malibu

7. Newport Beach on Oct. 10, 1934

8. Houses that had a broad expanse of protected beach in front when built

9. Houses that had a broad expanse of protected beach in front when built (2)

10. Airplane view of Newport Beach region

11. Houses on shore at Newport Beach

12. Airplane view of Newport region showing encroachment of the sea

XII - PHYSICAL OCEANOGRAPHY --G TIDES

1. Bay of Fundy. Map

2. Bay of Fundy. Passamaquoddy Bay, showing proposed tidal power development

3. Tides. Graph, illustrating oscillations in a trough

4. Tides. Graph showing tidal time of differences

5. Tides. Effect of varying declination

6. Tides. Long period variation in tide-generating force

7. Tides. Configuration for absolute maximum

XIII - PLANTS - A MARINE PLANTS IN GENERAL

1. Mature kelp plant, tip (Missing)

2. Kelp harvesting. Hopper

BOX**FOLDER TITLE****XIII – PLANTS - A MARINE PLANTS IN GENERAL (cont.)**

- 11
3. Kelp falling from conveyor onto loading barge
 4. Kelp. Hopper and conveyor
 5. Kelp harvester, showing cutting device in water, conveyor, engine
 6. Load of cut kelp
 7. Unloading freshly harvested kelp at San Pedro, Calif
 8. Alaria. Northern kelp bed (Missing)

XIV - MAP MAKING - A PROJECTIONS

1. Polar stereographic projection (fig. 70)
2. Northern hemisphere, polar stereographic projection (fig. 71)
3. equatorial stereographic projection (fig. 69)
4. Hemispheres in equatorial stereographic projection (fig. 72)
5. Stereographic projection (Missing)
6. Stereographic projection (Missing)
7. Orthographic projection (fig. 65)
8. Map-making. Polar orthographic projection (fig. 67)
9. Western hemisphere, in equatorial orthographic projection (fig. 66)
10. Polar globular projection (fig. 76)
11. World in polar globular projection (fig. 77)
12. Hemispheres in equatorial globular projection (fig. 75)
13. Conical projection (fig. 68)
14. Conical projection (fig. 73)

BOX**FOLDER TITLE****XIV - MAP MAKING -A PROJECTIONS (cont.)**

- 11
15. Conical projection (fig. 74)
 16. World in conic projection (fig. 95)
 17. North America on simple conic projection
 18. Conical equal area projection
 19. Cylindrical equal area projection. Equal spaced projection. (Figs. 16-17)
 20. Lambert equal area projection (figs. 25-26)
 21. Map-making. World in homoloraphic projection (fig. 82)
 22. Map-making. Polar gnomonic projection (fig. 79)
 23. Pacific Ocean on gnomonic projection (Broken)
 24. Part of gnomonic chart: great circle, rhumb. line (fig. 59) Part of Mercator chart: rhumb line. (fig. 58)
 25. World in Mercator projection
 26. World on Mercator projection
 27. Van der Grinten's spherical projection of the world
 28. Laying off Mercator projection
 29. laying off equatorial stereographic projection
 30. World on an equal area projection
 31. Covering for a terrestrial globe
 32. Triangulation in California re-observed in 1922-23, northern section. U.S. Coast and Geodetic Survey

XIV - MAP MAKING - B HISTORICAL

1. Waldseemuller, 1513. "Tabuli oceani occidentalis"

BOX**FOLDER TITLE****XIV - MAP MAKING -B HISTORICAL (cont.)**

- 11
2. Western half of Schoner's first globe
 3. Schoner's globe, 1515
 4. Democenet, 1552
 5. Caspar Vopell, 1543
 6. Behaim's globe, 1492
 7. Old map, heart-shaped hemispheres
 8. Route of Columbus on first voyage, use of winds and currents
 9. Zaltieri's map of North America, Mexico, 1566
 10. C. Mercator's North and South America
 11. Kaspar von Baerle's map of the world, 1622
 12. Waldseemuller map, 1509
 13. Eratosthenes map of the world
 14. Ptolemy's map, A.D. 150
 15. Ruysch (in Ptolemy)
 16. Behaim's globe, 1492. Eastern hemisphere
 17. Columbus' idea of eastern coast of Asia in relation to his fourth voyage
 18. Cantino world map, 1502
 19. The Gulf Stream, according to Governor Pownall, 1787
 20. Ptolemy's map
 21. The Gulf stream according to Benjamin Franklin
 22. E. Halley, oldest map of the winds, Atlantic Ocean, 1688

BOX**FOLDER TITLE****XIV - MAP MAKING - B HISTORICAL (cont.)**

- 11 23. From happelius Relationes Curiosae
24. Homer's world
25. Athanasius Kircher, oldest map of the circulation in the Atlantic Ocean. 1678

XV - FOULING AND WOOD BORING ORGANISMS - A FOULING

1. Prisoner scraping organisms from hull of scow (Missing)
2. Scraping hull of U.S.S. LAUB in dry dock, destroyer base, San Diego. April, 1934 (Missing)
3. Scraping propeller and shaft housing of U.S.S. LAUB in dry dock, 1934
4. Propeller of destroyer LAUB after 38 month's submergence
5. Bryozoa and sponges on hull of old scow in San Diego harbor, two years. 1934 (Missing)
6. Bryozoa and sponges on hull of old scow in harbor two years. April 1934
7. Bryzo and tunicate attached to barnacle ad covered by sponge colony, from ship's hull (Missing)
8. Barnacles, anemones on rocks at low tide. Scripps Institution. April, 1934
9. Equipment for investigations, SIO pier.
10. Equipment for investigations, SIO pier. Earliest stages of attachment
11. Hull, U.S.S. LAUB in dry dock. Hydroids and bryozoa
12. Goose-neck: barnacles from fouling organisms (Missing)
13. Barnacles. Rate of growth of Balanust tintinnabulus on submerged blocks (Missing)
14. Number of organisms which attach to clean and to bacteria-coated slides. Tables

BOX**FOLDER TITLE****XV - FOULING AND WOOD BORING ORGANISMS - A FOULING
(cont.)**

- 11 15. Frequency of attachment to blocks, of *Balanus t. californicus* 1930 (Missing)
16. Graph. Rate of growth of *Balanus t. californicus*, different seasons of the year (Missing)
17. Graph. Rate of growth of *Ostrea lurida* at different seasons of year (Missing)

**XV - FOULING AND WOOD BORING ORGANISMS - B WOOD
BORING ORGANISMS**

1. *Teredo*. Development (C.P. Sigerfoos, 1908) (Missing)
2. *Teredo*. Development (C.P. Sigerfoos, 1908) (Missing)
3. *Teredo*. Protruding siphons. (Rept. S.F.B.M.P. Comm. 1923)
4. *Teredo*. Valves (C.P. Sigerfoos, 1908)
5. *Teredo*. Showing shells and burrow. (S.F.B.M.P. Comm. 1927)
6. Setacea. Burrow in Douglas fir. (Rep. Comm. Wood Preserv. 1923)
7. Shipworm. Fender pile, Martines Calif. (S.F.B.M.P. Comm. 1927) (Missing)
8. *Limnoria*. Douglas fir piling in Oakland estuary. (S.F.B.M.P. Comm. 1927)
9. Dock failures. (S.F.B.M.P. Comm. 1927)
10. *Limnoria*. Dorsal, ventral views. (Hoek, 1893)
11. *Limnoria*, alve in burrow (S.F.B.M.P. Comm. 1927) (Missing)
12. *Limnoria*. Seasonal migrations. (M.W. Johnson)
13. *Limnoria*. Graph of seasonal migrations. (M.W. Johnson)
14. *Limnoria*. Table of seasonal migrations (M.W. Johnson)
15. *Limnoria*. Percent of total yearly settlement. Friday Harbor, figs. 1,2:1933-34; fig. 3: 1928-29 (M.W. Johnson) (Missing)

BOX**FOLDER TITLE****XV - FOULING AND WOOD BORING ORGANISMS - B WOOD BORING ORGANISMS (cont.)**

- 11 16. Limnoria. Table of temperature ranges at Friday Harbor
17. Limnoria. Seasonal settlement in 3-mo. periods, Sept. 1933 to Sept. 1934

XVI-A HYDROLOGY

- 12 1. Analysis of the time-rate of change of water temperature in a reservoir at noon (Missing)
2. Analysis of the time-rate of change of water temperature in a reservoir at two o'clock (p.m.) (Broken)
3. Analysis of the time-rate of change of water temperature in Lake Mendota, May 24-31
4. Analysis of the time-rate of change of water temperature in Lake Mendota, June 9-15
5. Weekly averages of serial temperatures, Lake Mendota
6. Weekly averages of serial temperatures, Lake Mendota (2)
7. Computation of lake or tank evaporation from pan observations
8. Computation of back radiation from a water surface and the combined solar and sky radiation received
9. Serial observations on hydrogen ion and temperatures
10. Serial observations on hydrogen ion and temperature (2)
11. Serial observations of temperature at Sweetwater and Murray Reservoirs
12. Stability in terms of energy at Lower Otay, Morena, San Dieguito Reservoirs, and Lake Hodges
13. Relative stability and temperatures, San Dieguito