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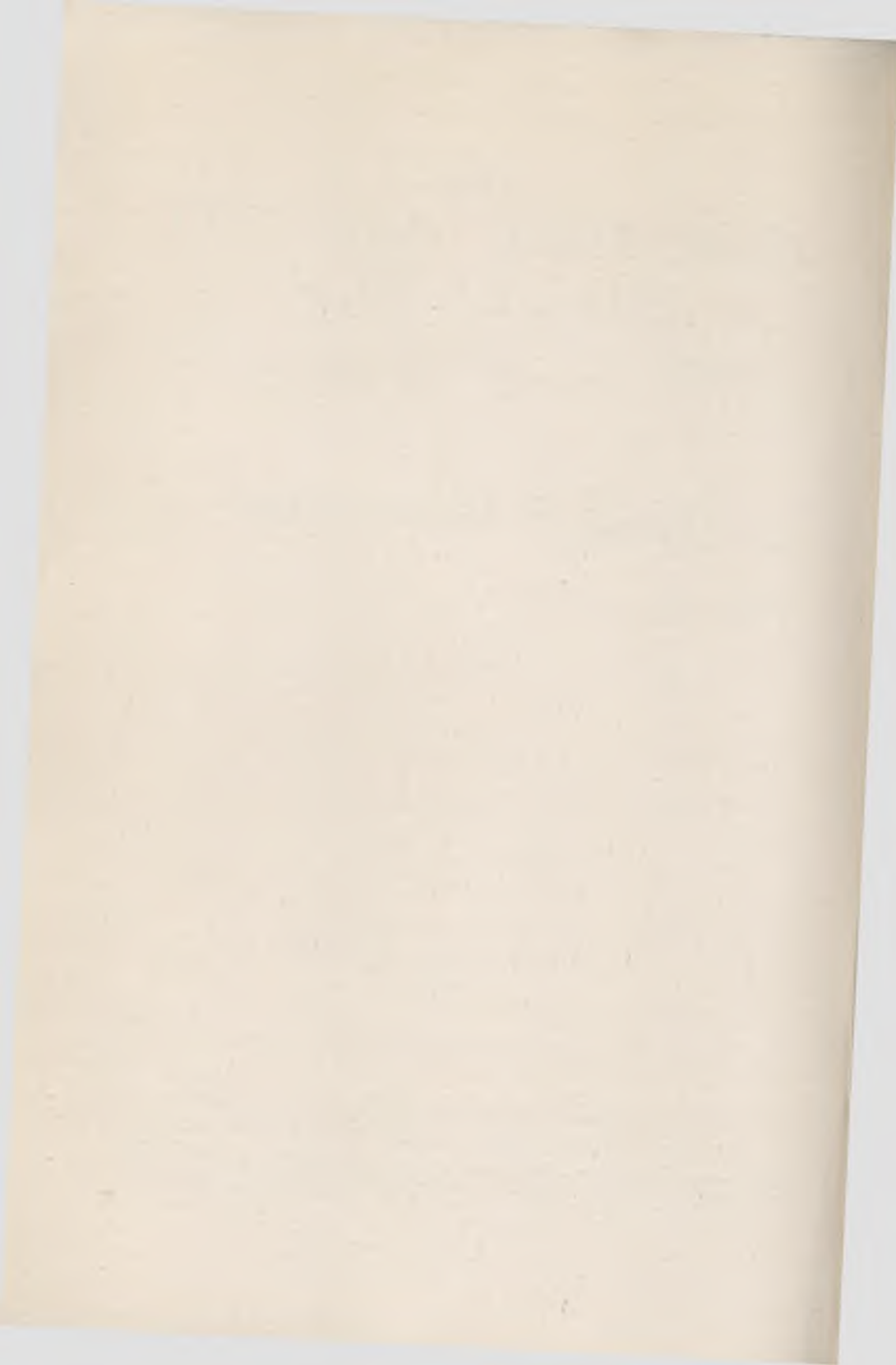
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LAKE LABORATORY

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ADAPTED FROM MOSLEY'S "SANDUSKY FLORA."

FORMER LOCATION OF LACE LABORATORY AT CEDAR POINT
 PRESENT LOCATION AT PUT-IN BAY

THE OHIO STATE UNIVERSITY

THE LAKE LABORATORY

Staff of Officers and Instructors for 1923

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CLARENCE H. KENNEDY, Ph. D.....	Entomology <i>Assistant Professor of Entomology</i>

ORGANIZATION OF THE UNIVERSITY

The Ohio State University, located at Columbus, is a part of the public educational system maintained by the State. It comprises a graduate school and ten colleges, each under the administration of a dean and college faculty as follows:

Graduate School	College of Education
College of Agriculture	College of Engineering
College of Arts, Philosophy and Science	College of Law
College of Commerce and Journalism	College of Medicine
College of Dentistry	College of Pharmacy
	College of Veterinary Medicine

The University publishes a bulletin describing the work of each of these colleges. Copies may be obtained by addressing the University Examiner, Columbus, Ohio. Persons desiring information are invited to send for the bulletin of that college in which they are interested.

This bulletin is devoted exclusively to a description of the work offered at the Lake Laboratory.

GENERAL INFORMATION

AIMS AND PURPOSES

The Lake Laboratory is designed to afford the best possible opportunity to investigators, teachers and advanced students for investigation and instruction in the biology of the Lake Erie region, with particular reference to aquatic conditions. It also provides a meeting ground for biologists. Opportunities for research work are exceptionally good. Certain courses are offered, but these are not meant to duplicate exactly what is given at the University. They are intended to give a first hand knowledge of animals and plants in their natural surroundings. They thus form an almost indispensable supplement to the more strictly laboratory type of university and college training in biology.

DATE OF THE SESSION

The course of instruction will open Monday, June 18th, and will close Saturday, July 28. The Laboratory will be open for a longer period to investigators provided special arrangements are made. Students should arrive in time to be prepared to attend classes on the opening day.

LOCATION

The Lake Laboratory is located at Put-in-Bay, which is a beautiful harbor on South Bass Island in Lake Erie. This island lies about five miles off the south shore of Lake Erie and twenty miles north of Sandusky, Ohio. It is only a few hours by lake steamer from Cleveland, Toledo and Detroit. South Bass Island is one of the group of three Bass Islands, the others being Middle Bass and North Bass. Nearby are Green Island and Rattlesnake Island. Scattered about in the immediate vicinity are several other smaller islands. The map on the inside page of the back cover shows the relations well. This situation offers an excellent location for a Great Lakes Biological Station. Lake Erie is probably the richest in flora and fauna of any of the Great Lakes. The islands offer a varied environment of rocky shore, sandy beach and woodland. On the mainland, within easy reach, are extensive sand dunes, large marshes, woodlands and streams.

FACILITIES

The Laboratory has excellent quarters in the Fish Hatchery Building, owned by the State of Ohio. The second floor of this building furnishes ample room for lecture and table space. On the ground floor there are large aquaria and several tiers of hatching jars supplied with running water. Microscopes, glassware, aquatic collecting apparatus and other general laboratory equipment are supplied from the University. The Laboratory owns a small gasoline launch and rowboats. In addition to this the boats and field equipment of the Fish Hatchery will be available. There is a large boat which will enable workers to visit any part of Lake Erie.

The library of the Laboratory is supplied with the standard books of reference. There is also a large number of reprints from the United States Bureau of Fisheries, the publications of biological surveys from various states and the papers of individual workers.



FISH HATCHERY, FRONT VIEW

FEEES

All students are required to pay a laboratory fee of \$10.00 for the six weeks of the session. Students who have not previously matriculated in the University are required to pay in addition, the matriculation fee of \$10.00. No other fees are charged. Independent investigators may enroll at any time without the payment of any fee unless credit for the work is desired from the University.

METHODS OF WORK

As a rule the work in any given course occupies the entire teaching day. The courses are so arranged as to days of the week that there is usually little danger of conflict. The work will consist of field observations, the study of the relation of organisms to their environment, and work in the laboratory. The courses in ecology are well adapted to fit teachers in secondary schools for presenting this phase of biology to their students. The opportunity for making teaching collections is exceptionally good.

CREDENTIALS

Persons who wish to be regularly enrolled in a course for credit must bring credentials from the institution they are attending or have last attended. In the case of undergraduates these credentials should state their present standing and, in particular, should indicate the biological courses for which they

have credit. Graduates must provide themselves with a statement attesting the fact of their graduation and also indicating the biological courses for which credit was obtained.

UNIVERSITY CREDIT

Students with university standing may secure four Quarter-hours credit in the University for each course. In special cases the time given to a course may be doubled, in which case nine Quarter-hours credit is given. Research students may make arrangements to continue the work for two additional weeks with credit. Credits may be transferred under the usual regulations to other institutions.

FREE TABLES FOR INVESTIGATORS

Properly qualified persons who may desire to engage in the independent investigation of biological problems will be cordially welcomed. No fees will be charged, and table room, boats, aquaria, etc., will be supplied, subject only to such provisions as may be necessary to make the facilities equally available to all. Each investigator will be expected to furnish his own microscope, personal equipment and special apparatus or special reagents needed in his investigation unless otherwise arranged for.

It is presumed that all persons taking advantage of this provision are fully prepared to do independent work and, while suggestions and conferences may be freely granted, no claim upon the time of instructors is assumed.

The Laboratory will be open for investigators and independent workers from June 18th to July 28th. Applications for table room should be made as early as practicable. With the application there should be sent a statement of the time during which accommodations will be desired and some indication of the facilities that will be required.



THE SHORE OF GREEN ISLAND

(This is typical of much of the shore on the other islands)

EXCURSIONS

From the nature of the locality a great number of interesting excursions are possible, and many rich collecting grounds may be visited. Special trips are occasionally planned. Excursions organized by the Laboratory are a part of the regular instructional work. Among the points of special interest are: Tern breeding grounds on Hen and Chicken Islands, sand dunes of Cedar Point, marshes of East Harbor and West Harbor, Green Island, plant associations of Point Pelee (Canada), eagle nests on Rattlesnake Island, dunes of Sandy Beach, Sister Islands, glacial grooves on Kelly Island and Starve Island, Sandusky Bay and River, fossil bearing rocks on Pelee Island (Canada), gypsum beds near Gypsum and the Life Saving Station at Marblehead.

TALKS AND GENERAL LECTURES

A series of fifteen-minute biological talks followed by an open discussion is usually given after the noon meal by members of the staff and others. Some of the subjects discussed have been as follows: Rise of Sap in Trees, the Moth, *Pronuba*, and the Yucca Plant; Immunity; Leaf Mining Insects; The Age of Trees; Animals of the Forest Mold; Dragon-flies of Florida; Color in Flowers and Its Biological Significance; Equilibrium in Animal Groups; Enzymes; Plankton of the Great Lakes; How Organisms Float; Physiology of Digestion; Rise and Fall of Animal Groups; Local Evidence of Glaciation; Insect Societies; Absorption of Water by Foliage Leaves; Parasites of the Bass; Environmental and Germinal Characteristics; Geological History of Lake Erie; Metamorphosis in Insects; Plankton Parasites; Life History of May-flies; Factors in Migration; Climate and Disease.

Lectures of general interest are also given by members of the station staff and other lecturers are secured from outside when possible. These lectures are given weekly or oftener. Each member of the instructional staff gives at least one lecture.

LIVING AND EXPENSES

A furnished cottage is maintained in connection with the Laboratory in which a certain number of students and other workers can be accommodated. Rooms and board are provided at cost; on the basis of last summer's expenses this will probably be about \$10.00 a week. This amount is a pro rata charge and it may be possible to reduce it slightly. It is also possible to obtain accommodations in boarding houses which are located near the Fish Hatchery. Tenting space can be furnished to persons who care to bring tents.

It is suggested that those who desire to live in the cottage or who wish assistance in making other arrangements notify the Acting Director as soon as practicable. He will be glad to give information and to lend assistance.

In addition to living expenses, it will be well to provide about \$10.00 for other necessities. Beyond these expenses and the registration fee the cost of attending the Laboratory will depend largely upon individual tastes and wishes.

RECREATION

In addition to the field work, collecting excursions and outdoor activities connected with the regular work, the opportunities for rowing, sailing, and bathing provide abundant means for physical exercise. The best of health has been the rule with those in attendance during the past years.

PERSONAL EQUIPMENT SUGGESTIONS

For the benefit of persons who have not previously attended the Laboratory the following list of articles is given as a guide in making preparations:

Strong, comfortable shoes and clothing suitable for tramping or general field work (rubber boots are a convenience); sweater and other provisions for cool weather; rain coat; bathing suit; towels; field, laboratory and lecture notebooks and drawing supplies, although these can be obtained at the Laboratory hand lens; simple dissecting set; canvas collecting bag; strong pocket knife; kodak; any textbooks, general or special, dealing with the subjects to be studied will be useful.

APPLICATIONS AND CORRESPONDENCE

Prospective students and investigators are requested to enter into correspondence as soon as possible. Advice with regard to the possibilities for research, the lines of work students should pursue or any information concerning the Laboratory will be gladly given. It is not wise to come to the Laboratory without previous correspondence with those in charge. For those who fail to do this there can be no guarantee of proper accommodations.

Correspondence should be addressed to the Director, Professor R. C. Osburn, or to the Acting Director, Dr. F. H. Krecker, Ohio State University, Columbus, Ohio.

After June 16th, address all correspondence to Dr. F. H. Krecker, Acting Director, Lake Laboratory, Put-in-Bay, Ohio.

COMMUNICATION AND TRANSPORTATION

The steamer service available from Sandusky, Cleveland, Toledo and Detroit affords exceptionally good facilities for reaching the Laboratory with a minimum expense.

The most frequent communication with the mainland is by way of Sandusky, and therefore, in most instances it will be best to go to Sandusky by rail and change there to steamers for Put-in-Bay. Until July 1, one should reach Sandusky not later than one o'clock in order to make connection with the boat, which leaves early in the afternoon. After July 1, a steamer leaves Sandusky twice daily, once in the morning and once in the afternoon. Upon arriving in Sandusky go to the Arrow dock at the foot of Columbus Avenue. This is a short walk from the Pennsylvania and the Big Four railroad stations. From the Baltimore and Ohio, the Lake Shore, and the Lake Erie and Western stations it can be reached by street car. Information regarding exact steamer schedules may be obtained from J. A. Millott, who has a transfer office on the dock. Steamboat schedules from Detroit, Cleveland, and Toledo vary somewhat from year to year, and therefore no exact information as to the time of leaving these cities can be given. Upon reaching Put-in-Bay ask for the State Fish Hatchery Building. This is a fifteen-minute walk to the right along the bay shore. Taxi service is available.

BAGGAGE, FREIGHT AND MAIL

Mail, express and freight should be addressed in care of THE LAKE LABORATORY, PUT-IN-BAY, OHIO.

Millott's transfer agency on the Arrow Dock in Sandusky is reliable and will give prompt attention to bringing trunks from the railroad stations to the steamer. At Put-in-Bay transfer agents meet incoming steamers and the Laboratory launch will transfer baggage when notified.

DEPARTMENTS OF INSTRUCTION

ZOOLOGY AND ENTOMOLOGY

452. ENTOMOLOGY. Five credit hours. Professor Kennedy.

Field and laboratory course, including instruction in collecting, mounting and identifying insects in connection with studies in life history and anatomy. Excellent opportunities for life history studies are offered both on aquatic and terrestrial forms.

651-652. ADVANCED ENTOMOLOGY. Five credit hours. Prerequisite, Zoology 401-402, or equivalent.

604. ECOLOGY OF FRESHWATER ANIMALS. Five credit hours. Prerequisite, Zoology 401-402, or equivalent, and one additional year of biological work. Professor Kreckler.

This course deals with the relations of the aquatic animals of the region to their surroundings. The varied environments of the Lake afford good opportunities for this work. The student is also made familiar with the associations to be found in streams and ponds. The factors governing these associations and the general conditions of aquatic existence are considered. Lectures, field and laboratory work.

*808. EMBRYOLOGY. Five credit hours.



A MARSH ON MIDDLE BASS ISLAND

*Not given in 1923

A study of mitosis, segmentation, and germ layer formations of different types, but with special emphasis on the development of the fish. The course will be offered as far as possible from material collected at the Laboratory. Students properly qualified may undertake the study of some embryological *problem.

301. ICHTHYOLOGY. Five credit hours. Professor R. C. Osburn.

Special course devoted particularly to lake fishes, their habits and food supplies.

Given to students especially qualified for this work. Instructor should be consulted before registering.

*408. ORNITHOLOGY. Five credit hours. Prerequisite, Zoology 401-402 and an additional year of biological work.

Field work, together with lectures on morphology and natural history of birds. In the field work especial attention will be devoted to the study of the shore, swamp and water birds, breeding habits, and the ecological conditions of the vicinity of the Laboratory.

Each student should be provided with field glass or opera glass.

310. ADVANCED ZOOLOGY OF INVERTEBRATES. Five credit hours. Prerequisite, Zoology 401-402 or equivalent, and one additional year of biological work. Professor Williams.

An advanced course dealing especially with the aquatic invertebrates of the region for students who wish to familiarize themselves with the structure and classification of these forms. The work includes laboratory study of material from the region and lectures on the principles of invertebrate structure and relationships.

810. RESEARCH WORK. Five to ten credit hours. Prerequisite, Zoology 401-402, 405-406 or equivalent.

Properly qualified graduate students who so desire may enter upon some faunal, ecological, or other problem under the direction of the instructor in charge of the subject chosen. Professor Herbert Osborn will be at the Laboratory when possible during the session and at such times will be able to give attention to students doing research work in entomology. The Director, Professor R. C. Osburn, of the Department of Zoology and Entomology in the University, will be in attendance for the greater part of the season. He will at all times be glad to lend his advice and counsel to students engaged in zoological research.

BOTANY

351. PLANT ECOLOGY. Five credit hours. Prerequisite, Botany 401-402 and one additional year of some biological subject. Professor Stickney.

Field and laboratory course, accompanied by lectures, quiz, and consultation of the literature. A study of the plants of the region in relation to the various factors of their environment, such as water, light, soil, temperature; the identification of trees, shrubs, and herbaceous plants and their grouping into associations. The wide range of conditions within a short distance of the Laboratory affords excellent opportunity for this subject.

*355. MORPHOLOGY OF AQUATIC PLANTS. Five credit hours. Laboratory work and lectures.

The purpose of this course is to familiarize the student with the structure and taxonomy of the aquatic plants of the region with emphasis upon the algae.

Note: The prerequisite course numbers refer to the University Catalog.

*Not given in 1923.

The Lake and adjoining coves and ponds are exceedingly rich in this type of flora. The work includes laboratory studies of material and lectures on taxonomy and morphology.

360. SPECIAL WORK. Five to ten credit hours. Prerequisite, Botany 401-402 and one additional year of some biological subject.

Properly qualified students may select some subject in Ecology, Morphology, Systematic Botany, Algology or some other problem and carry on work under the supervision of the instructor in charge of the subject chosen.

PUBLICATIONS AND RECORDS

A considerable number of publications based wholly or in part on investigations at the Laboratory have been issued and a number of others are in preparation. These are expected in time to cover as fully as possible a systematic record of the plants and animals occurring in the vicinity of the Laboratory, as well as results of morphological, embryological, ecological, and other biological studies. A partial list is given below. A constantly growing card catalog record of species occurring in the region serves to show the available material and forms a basis for faunistic and ecologic studies.

PAPERS FROM THE LAKE LABORATORY, OHIO STATE UNIVERSITY

Based Wholly or in Part Upon Work Done at The Lake Laboratory

1. Rotifera of Sandusky Bay. D. S. Kellicott, Trans. Am. Mic. Soc.
2. The Odonata of Ohio. D. S. Kellicott, O. Ac. Sci., S. P. 2, 1-116, 4 pl.
3. The Fishes of Ohio. Raymond C. Osburn, O. Ac. Sci., S. P. 4, 1-104.
4. Galls and Insects Producing Them. Melville Thurston Cook, parts 1 to 9, O. Nat., II, 263; III, 419; IV, 125.
5. Tabanidae of Ohio. James S. Hine, O. Ac. Sci., S. P. 5, 1-157, 2 pl.
6. Observations on Hymenopterous Parasites of Certain Fulgoridae. Otto H. Swezey, O. Nat., III, 444-452.
7. A List of the Orthoptera of Ohio. C. S. Mead, O. Nat., IV, 109-112.
8. The Coccidae of Ohio. James G. Sanders, O. Ac. Sci., S. P. 8, 65 pp., 9 pl., 86 fig.
9. Batrachians and Reptiles of Ohio. Max Morse, Pr. O. Ac. Sci., IV, 91-144.
10. An Ecological and Experimental Study of Sarcophagidae with Relation to Lake Beach Debris. W. B. Herms, Jour. Exp. Zool., IV, 45-83.
11. On the place of Origin and Method of Distribution of Taste Buds in *Ameiurus melas*. F. L. Landacre, Jour. Comp. Neur. and Psychol., XVII, 1-66.
12. The Birds of Cedar Point, Sandusky, Ohio. R. L. Baird, O. Nat., Vol. II, p. 143.
13. Notes on Bird Life of Cedar Point. R. F. Griggs, O. Nat., Vol. I, p. 91.
14. Dragon Flies of Sandusky. James S. Hine, O. Nat., Vol. I, p. 94.
15. Sponges and Bryozoans of Sandusky. F. L. Landacre, O. Nat., Vol. I, p. 96.
16. Zoological Notes. Herbert Osborn, O. Nat., Vol. I, p. 86.
17. Notes on the Flora of Sandusky. W. A. Kellerman, O. Nat., Vol. I, p. 82.
18. Variations in the Water Snake. Max Morse, O. Nat., Vol. II, p. 183.
19. Algae from Sandusky Bay. Lumina C. Riddle, O. Nat., Vol. III, p. 317.
20. The Flora of Little Chicken Island. John H. Schaffner, O. Nat., Vol. III, p. 33.
21. Life History Notes on Two Fulgoridae. Otto H. Swezey, O. Nat., Vol. III, p. 354.
22. Notes on Interesting Ohio Willows. R. F. Griggs, O. Nat. Vol. IV, p. 11.
23. New Species of Ohio Fulgoridae. Herbert Osborn, O. Nat., Vol. IV, p. 44.
24. A Further Contribution to the Hemipterous Fauna of Ohio. Herbert Osborn, O. Nat., Vol. IV, p. 99.
25. The Breeding Habits of the Myriopod, *Fontaria Indianae*. Max Morse, O. Nat., Vol. IV, p. 161.
26. The Embryo Sack and Embryo of the Nelumbo. H. H. York, O. Nat., Vol. IV, p. 167.
27. Flora of Cedar Point. W. A. Kellerman and O. E. Jennings, O. Nat., Vol. IV, p. 186.
28. Flora of Hen and Chicken Islands, 1903. W. A. Kellerman, O. Nat., Vol. IV, p. 190.
29. Report of Progress on Study of Hemiptera of Ohio and Description of New Species. Herbert Osborn, O. Nat., Vol. V, p. 273.
30. Notes on the Morphology of Philotria. Lumina C. Riddle, O. Nat., Vol. V, p. 304.
31. The Rate of Growth in *Epistylis flavicans*. F. L. Landacre, O. Nat., Vol. V, p. 325.
32. The Willows of Ohio. R. F. Griggs, Proc. Ohio Acad. Sci., S. P., No. 11.
33. The Naididae of Cedar Point. L. B. Walton, Am. Nat., Vol. XL, p. 638.

34. Notes on the Fall Web Worm (*Hyphantria cunea*) in Ohio. E. W. Berger, *O. Nat.*, Vol. VI p. 453.
35. Correlation and Variation in Internal and External Characters in the Common Toad (*Bufo lentiginosus americanus* Le C.). W. E. Kellicott, *Jour. of Exp. Zoology*, Vol. IV, 575.
36. An Ecological Classification of the Vegetation of Cedar Point. Otto E. Jennings, *O. Nat.*, Vol. VIII, 291.
37. The Protozoa of Sandusky Bay and Vicinity. F. L. Landacre, *Ohio Ac. Sci.*, S. P., 13.
38. The Pinkus Nerve in *Amia* and *Lepidosteus*. Chas. Brookover, *Science N. S.*, Vol. XXVII, p. 473 (1908).
39. The Olfactory Nerve, the Nervus Terminalis and the Preoptic Sympathetic System in *Amia calva*. Chas. Brookover, *Jour. Comp. Neurology and Psychology*, Vol. XX.
40. The Olfactory Nerve and the Nervus Terminalis of *Ameiurus*. Chas. Brookover and Theron S. Jackson, *Jour. Comp. Neurology and Psychology*, Vol. XXI, p. 237-259 (June, 1911).
41. The Origin of the Cranial Ganglia in *Ameiurus*. F. L. Landacre, *Jour. Comp. Neurology, and Psychology*, Vol. XX, p. 309 (September, 1910).
42. The Birds of Cedar Point and Vicinity. Lynds Jones, *Wilson Bulletin*, 1910.
43. Occurrence of *Typhlopsylla octatenuis* in Ohio. Herbert Osborn, *O. Nat.*, Vol. VIII, p. 289 (March, 1908).
44. Note on the Habits of *Senotania rubriventris* Macq. Herbert Osborn, *O. Nat.*, Vol. VIII, p. 38 (1906).
45. The Epidrachial Placodes of *Ameiurus*. F. L. Landacre, *O. Nat.*, Vol. VIII, p. 251.
46. The Origin of the Sensory Components of the Cranial Ganglia. F. L. Landacre, *The Anatomical Record*, Vol. IV, p. 71 (1910).
47. Syrphidae of Ohio. C. L. Metcalf, *Bulletin I, Ohio Biological Survey*, 1913.
48. A List of the Fungi of Cedar Point. Chas. K. Brain, *O. Nat.*, Vol. XIII, December, 1912.
49. Additions Made to the Cedar Point Flora During the Summer of 1911. E. L. Fullmer, *O. Nat.*, Vol. XII, February, 1912.
50. Additions Made to the Cedar Point Flora During the Summer of 1912. E. L. Fullmer, *O. Nat.*, Vol. XIII, December, 1912.
51. A Preliminary List of the Acarina of Cedar Point. C. K. Brain, Vol. XIII, April, 1913.
52. A Preliminary List of the Myxomycetes of Cedar Point. E. L. Fullmer, *O. Nat.*, Vol. XII, February, 1912.
53. Some Entomophilous Flowers of Cedar Point. A. C. Conger, *O. Nat.*, Vol. XII, April, 1912.
54. The Stratomyidae of Cedar Point. B. B. Fulton, *O. Nat.*, Vol. XI, March, 1911.
55. The Pollination Notes from the Cedar Point Region, Wm. Bembower, *O. Nat.*, Vol. XI, June, 1911.
56. Additions Made to the Flora of Cedar Point. Stickney, Schaffner and Davies, *O. Nat.*, Vol. X, January, 1910.
57. Additions and Notes on the Hemiptera-Heteroptera of Ohio. Herbert Osborn and Carl J. Drake, *Ohio Nat.*, Vol. XV, pp. 501-508.
58. Insect Galls of Cedar Point and Vicinity. Paul B. Sears, *O. Nat.*, Vol. XV, No. 2, December, 1914, pp. 377-388.
59. The Food of *Rana pipiens*. Shreber. C. J. Drake, *Ohio Nat.*, (March, 1914).
60. Evaporation Plant Zones in the Cedar Point Marsh. Paul B. Sears, *O. Jour. Sci.*, Vol. XVI, No. 1, January, 1916.
61. Phenomena of Orientation Exhibited by Ephemeroidea. F. H. Kreckler, *Biological Bulletin*, December, 1915.
62. The Reactions of the Orb-weaving Spider, *Epeira scolopetaria* Clerk, to Rhythmic Vibrations of Its Web. W. M. Barrows, *Biological Bulletin*, December, 1915.
63. Sun Fish Nests of Beimiller's Cove. F. H. Kreckler, *O. Jour. Sci.*, February, 1916.
64. A Revision of the Bembecine Wasps of America North of Mexico. J. B. Parker, *Proc. U. S. Nat. Mus.*, Vol. 52, pp. 1155, No. 2173.
65. The Fauna of Rock Bottom Ponds. F. H. Kreckler, *O. Jour. Sci.*, June, 1919.
66. Circulation of the Coelomic Fluid in a Nematode. F. H. Kreckler, *Biological Bulletin*, September, 1919.
67. The Syrphid Fly, *Mesogramma Marginata*, and the Flowers of *Apocynum*. R. C. Osburn, *Ohio Jour. Sci.*, May, 1920.
68. Caddis-worms as Agents in Distribution of Fresh Water Sponges. F. H. Kreckler, *Ohio Jour. Sci.*, June, 1920.
69. Concerning "Larval" Colonies of *Pectinatella*. Stephen R. Williams, *Ohio Jour. Sci.*, January, 1921.
70. Food of The Common Ohio Darters. C. L. Turner, *Ohio Jour. Sci.*, Vol. XXII, December, 1921.
71. Notes on the Food Habits of Young of *Cottus Ictalops*. C. L. Turner, *Ohio Jour. Sci.*, Vol. XXII, January, 1922.
72. Food of Young Small-Mouth Black Bass in Lake Erie. E. L. Wickliff, *Trans. Am. Fisheries Soc.*, Vol. L, 1921.
73. The Ecological Relationships of the Odonata of the Bass Islands of Lake Erie. C. H. Kennedy, *Ecology*, Vol. III, No. 4, Oct., 1922.
74. Emergence of a Mayfly from its Nymphal Skin. F. H. Kreckler, *Ohio Jour. Sci.*, Vol. XXII April, 1922.

The Ohio State University Bulletin is issued thirty times during the year: monthly in June, July, August, September, and October; tri-monthly in November, December, and January; weekly in February, March, April, and May.