



Entered July 20, 1904.

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ANNUAL REPORT

OF

THE ASSISTANT IN CHARGE

OF THE

MUSEUM OF COMPARATIVE ZOÖLOGY

AT HARVARD COLLEGE,

TO THE

PRESIDENT AND FELLOWS OF HARVARD COLLEGE¹

FOR

1898-99.

CAMBRIDGE, U. S. A. :

UNIVERSITY PRESS: JOHN WILSON AND SON.

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FACULTY OF THE MUSEUM.

Faculty.

CHARLES W. ELIOT, *President.*

ALEXANDER AGASSIZ.

GEORGE L. GOODALE.

———, *Secretary.*

HENRY P. WALCOTT.

- W. McM. WOODWORTH . . . *Assistant in Charge of the Museum.*
WILLIAM M. DAVIS . . . *Sturgis-Hooper Professor of Geology.*
WALTER FAXON . . . *Assistant in Charge of Crustacea and Mollusca.*
SAMUEL GARMAN . . . *Assistant in Herpetology and Ichthyology.*
WILLIAM BREWSTER . . . *Assistant in Ornithology and Mammalogy.*
ALPHEUS HYATT . . . *Assistant in Palæontology.*
SAMUEL HENSHAW . . . *Assistant in Entomology and Librarian.*
ALFRED G. MAYER . . . *Assistant in Charge of Radiates.*
C. R. EASTMAN . . . *Assistant in Vertebrate Palæontology.*
MISS F. M. SLACK . . . *Librarian Emerita.*
MAGNUS WESTERGREN . . *Artist.*

REPORT.

TO THE PRESIDENT AND FELLOWS OF HARVARD COLLEGE:—

DURING the past academic year the regular courses in Zoölogy and Geology were given in the Natural History Laboratories of the Museum. Nine courses in zoölogy were given by Assistant Professor Jackson, Doctors Parker, Davenport, and Castle, assisted by Messrs. M. A. Bigelow, R. W. Hall, P. Frandsen, W. J. Moenkhaus, H. W. Rand, C. W. Prentiss, and S. R. Williams. These courses were attended by two hundred and fifty students. Four of the courses were also given to forty-two students of Radcliffe College. Fourteen courses in geology were given by Professors Shaler and Jackson, Doctors Daly and Jagger, Messrs. Ward and Woodworth, assisted by Messrs. J. M. Boutwell and J. E. Woodman. The courses in geology were attended by four hundred and eighty-five students. Two of the courses in geology were given to twenty-three students of Radcliffe.

Details concerning the courses of instruction will be found in the reports of the departments under the Faculty of Arts and Sciences.

Nine students benefited by the income of the Humboldt Fund, which was applied for their maintenance during summer study at the United States Fish Commission Laboratory at Wood's Hole.

The Virginia Barret Gibbs scholarship was held by Mr. M. A. Bigelow.

Mr. Brewster in his report calls attention to the pressing need of the Museum for a collection of mammal skins for study and reference. The storage collection now possessed by the Museum is so small and of such poor quality that we are really crippled, and the one thing needed by the Museum to balance its rich reference collections is an extensive series of mammal skins. Just such a collection as is needed has been offered to us at a

low price, but unfortunately at a price beyond the limits of our income.

The collection of mounted mammals on exhibition is now nearly complete, and there remain only a few important gaps in the systematic and faunal exhibits, specimens to fill some of which have already been ordered.

The chief additions to the bird collection are the last invoice of duplicates from the Hume collection of Indian birds received from the British Museum, and a series of skins presented by Mr. Brewster.

No important additions have been made to the Fishes and Reptiles, though we are indebted to many contributors.

The shells of the Warren Delano collection have been identified by Professor Charles W. Johnson, of Philadelphia, and have been numbered, catalogued, and arranged by Miss E. B. Bryant, who has also made good progress under the direction of Dr. Faxon in cataloguing and arranging the Call collection of Unionidæ.

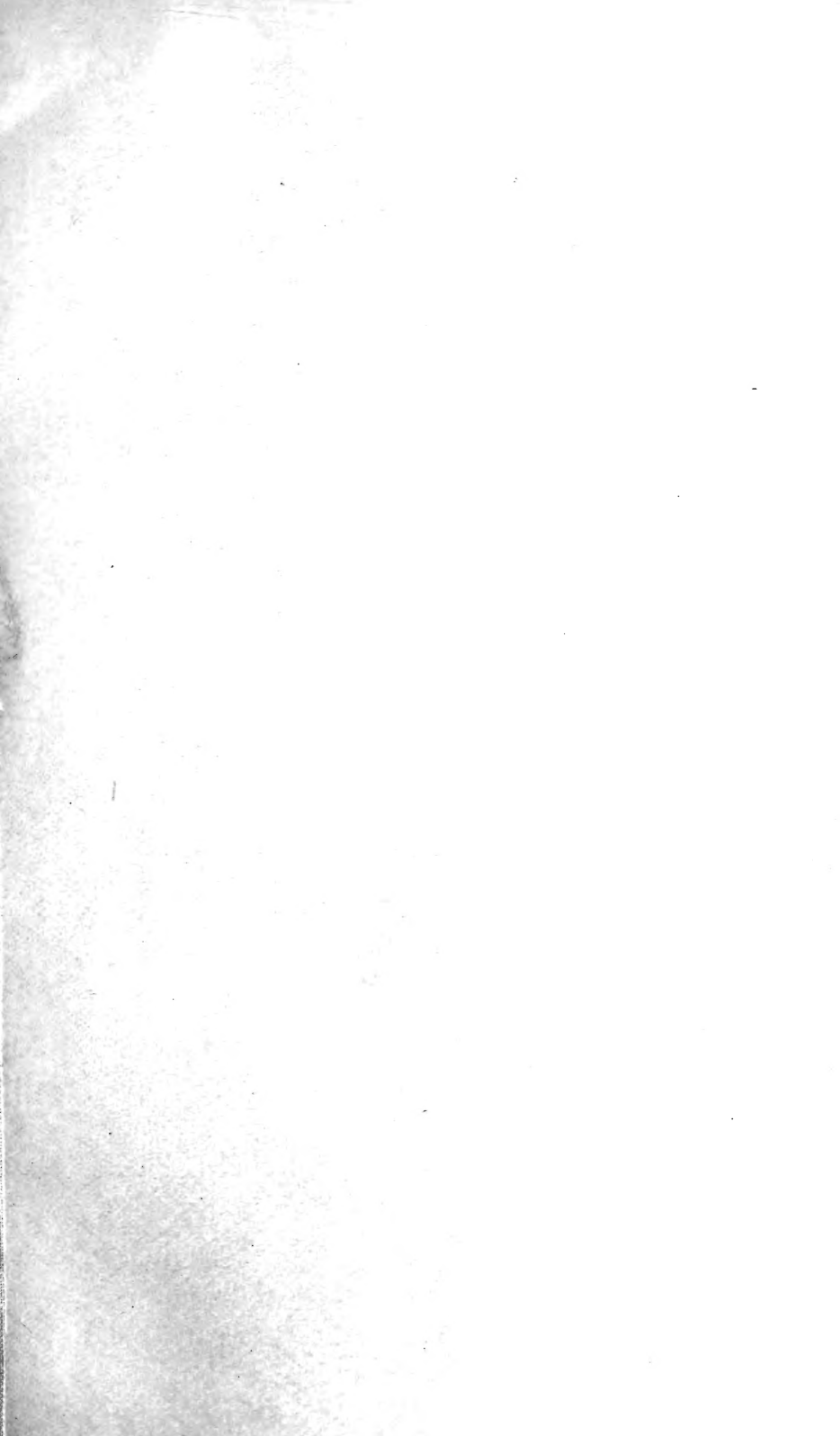
The collection of Crustacea has been enriched by a set of duplicates from the dredgings of the "Travailleur" and "Talisman," received from the Paris Museum, and by exchanges with the National Museum at Washington.

The entomological department continues to be much used by visiting specialists, and Mr. Henshaw reports many contributions to the collections. The addition of a number of cases has made it possible to begin spreading the Lepidoptera collected by Mr. Agassiz and his assistants in Australia and the Fiji Islands.

Dr. Mayer remains in charge of the Radiates, and during the past year continued his studies on North American Jellyfish.

Owing to my absence from Cambridge during a part of the year but little work has been done on the worms. The chief additions comprise a collection of annelids made by me in Samoa, consisting principally of material for my work on the Palolo, and a series of types received from Professor H. B. Ward. The Gephyreans have been loaned to Professor Ward for study, and the Leeches to Dr. W. E. Castle. Some progress was made in cataloguing the collections, and that part of the catalogue pertaining to the Annelida is now complete.

The assistants in Palæontology report that the collections are in excellent condition. The only noteworthy additions are sev-





T. A. JAGGER, JR., PHOTO.

UINTACRINUS SOCIALIS Grinn.

SIZE OF SLAB, 4x8 FT.

HELIOTYPE PRINTING CO., BOSTON.

eral important collections of fossil fishes secured through the exertions of Dr. Eastman.

The type specimen of *Titanichthys agassizii* N. and an almost complete skeleton of *Dinichthys terreli* N. have been mounted by Mr. J. H. Emerton, who has skilfully restored some of the missing plates. When completed the specimens will form prominent features of the palæozoic exhibit.

A superb slab of *Uintacrinus socialis* Grinn. has been presented to the Museum by Mr. Frank Springer. The slab is four by eight feet in extreme dimensions, and contains about one hundred and twenty individuals with the arms attached, some of which can be traced for a distance of more than two feet. The calyces occur in all positions, some of them showing the basal plates. The slab was mounted by Mr. Emerton, and is now on exhibition in the lower hall of the main entrance. As a museum specimen it is probably unequalled. A photograph of the slab accompanies this report.

From the heirs of David Kimball the Museum has received the fossils, shells, and corals of the old Boston Museum collection, which were removed after the fire. The collection contained some desirable specimens.

A large collection of rocks has been received from Mr. Agassiz. It is a collection made for Mr. Agassiz by Mr. E. C. Andrews, of the University of Sydney, of the elevated limestones of the Fiji Islands in continuation of his researches on the coral reefs of that group. Mr. Andrews spent the summer of 1898 in Fiji, and was assisted by Mr. B. Sawyer. The explorations were made at considerable personal risk, as the only means of communication between the islands consisted of cutters not over seaworthy. Mr. Andrews had the advantage of the advice of Professor T. W. E. David, of the University of Sydney, who took great interest in this investigation, by one of his pupils. The collection contains many fossils from the different elevated limestones, mainly Ngillangillah, Mango, Kambara, and the Singatoka River, as well as the characteristic rocks found associated with them.

The library continues to increase steadily, and during the past year has received about the usual number of additions. A door has been cut connecting the rooms containing the Whitney Library with the general stack, thus making the Whitney collection more accessible from the delivery room.

The publications of the past year consisted of four numbers of the "Bulletin," including one contribution from the Zoölogical Laboratory, in charge of Professor Mark. Mr. Agassiz's Report on the Coral Reefs of the Fiji Islands occupies the whole of Vol. XXXIII. Vol. XXXV. is now in course of publication. Of the Memoirs, Vol. XXIV., Mr. Garman's Report on the Fishes of the "Albatross" Expedition, is nearly ready.

Chief among the repairs and alterations in the building has been the removal of the elevator in the North wing, thus providing space for additional cases in the large exhibition hall and the gallery.

The corporation having voted the necessary funds for the construction of a shed at the South end of the West wing, Professor Wolff has removed his motor and dynamo from the basement, together with the rest of the machinery of the mineralogical department. This gives us two rooms in the basement, of which we have been much in need, for a taxidermist's shop and general museum uses.

The number of visitors to the Museum on Sunday afternoons has been so large during the winter that at our request the Mayor of Cambridge has detailed two police officers to be in attendance on Sunday afternoons to assist in patrolling the building.

The use of the exhibition rooms by teachers and their classes has been greater during the past year than at any time previous, and letters are constantly being received asking if the Museum is open on Saturday afternoons. It is not uncommon to see from four to six classes in a single afternoon.

Every effort has been made to diminish the fire risks, which have increased with the growing attendance of students in the many laboratories in the building. In addition to the stand pipes and hose racks installed last year, the corporation has agreed to provide a night watchman who shall regularly patrol the building at night, and for this purpose have installed a watchman's clock system, which also extends to the Peabody and University Museums. Furthermore the Faculty of the Museum have voted that the building shall no longer be opened at night for seminars and other meetings. It is hoped that at some not distant day the boilers of the heating plant can be removed to a separate, detached, building.

Professor William Morris Davis has been appointed to the vacant Sturgis-Hooper chair of Geology.

Radcliffe College has made its first annual appropriation of \$700 as a compensation to the Museum for the use of the rooms and laboratories by its students. Radcliffe has always enjoyed the facilities of the Museum, occupying at various times during the college year eight out of the eleven lecture rooms and laboratories to the exclusion of other students at those hours. It would be no more than reasonable that a similar provision should be made for the large classes of the Summer School of Geology which take possession of the building during the summer months.

The invested funds of the Museum have been increased by a grant of the corporation of \$100,000 from the Henry L. Pierce bequest. This welcome addition will in a small measure compensate for the shrinkage of the income of the Museum through the decreased rate of interest from its invested funds.

After almost thirty years of faithful and devoted service as librarian of the Museum, Miss Frances M. Slack has been appointed Librarian Emerita. Under her care the library has grown from less than ten thousand to more than thirty-two thousand volumes and nearly as many pamphlets and unbound parts, and during her administration of the library the influence of the Museum has been widely extended through its exchanges. Miss Slack will continue to give her services to the Museum which has so long benefited by them.

Mr. Samuel Henshaw, Museum Assistant in Entomology, has accepted the appointment of Librarian, and at the beginning of the academic year will assume charge of the library. Mr. Henshaw will remain in charge of the entomological department, and in addition to his duties as Librarian will have under his care the publications of the Museum. The Museum is most fortunate in securing the services of Mr. Henshaw, who resigns the secretaryship of the Boston Society of Natural History to give all of his time to the Museum, whose activities will thus be strengthened.

At the wish of Mr. Agassiz I visited the Samoan Islands during a part of the past winter to procure additional material for my work on the Palolo or Bololo worm, which was begun in the Fiji Islands, whither I accompanied Mr. Agassiz as his assistant. I was successful beyond expectations, though not without hard-

ships, in solving the mystery of this interesting annelid, and brought back with me an unrivalled lot of material. I am under great obligations to Capt. Victor Schoenfelder of H. I. M. S. "Falke," and to Mr. W. Blacklock, U. S. Vice-Consul at Apia, for assistance and many kindnesses, also to my native friends, without whose help and interest success would have been impossible. To Dr. Augustin Krämer of the Imperial German Navy, a fellow naturalist, I am especially indebted, for his unselfish help and advice and his tender care of me when I was ill at Apia. Dr. Krämer has also placed at my disposal his splendid collection of annelids from the reefs of Samoa, where he was through three Palolo seasons working at the same problem as myself.

Leave of absence has been granted to me to accompany Mr. Agassiz on an expedition to the South Pacific during the coming fall and winter. The United States Fish Commission steamer "Albatross" has been placed at the disposal of Mr. Agassiz, who will take with him as assistants from the Museum Dr. A. G. Mayer and myself. The Hon. George M. Bowers, United States Fish Commissioner, and the Navy Department have done everything possible to advance the interests of the expedition. Lieutenant-Commander Jefferson F. Moser, U. S. N., will command the "Albatross." The expedition is undertaken by Mr. Agassiz chiefly in continuation of his researches on coral formations, but deep-sea work will also be carried on. The main fields of work of the expedition will be the Paumotu and Marshall Islands, and the "Albatross" will also visit the Marquesas, Society, Tonga, Fiji, Cook, Ellice, Gilbert, Caroline, and Ladrone Islands and smaller intermediate groups. The results of the expedition will be published by the Fish Commission in coöperation with Mr. Agassiz for the Museum.

W. McM. WOODWORTH,
Assistant in Charge.

CAMBRIDGE, September 1, 1899.

REPORT ON THE MAMMALS AND BIRDS.

BY WILLIAM BREWSTER.

THE following additions have been made to the collection of birds:—

By purchase from Oliver Spanner & Co., of Toronto: Two Kiwis, one a mounted specimen (*Apteryx lawryi*) from Stewart Island, New Zealand, the other a skin (*Apteryx haasti*), from Middle Island, New Zealand, and the skins of a pair of “wingless” Ducks (*Nesonetta aucklandia*) from the Auckland Islands.

By gift: From the British Museum, the final instalment of a valuable series of Indian birds from the Hume Collection, including a number of Parrots, Hawks, Pigeons, and Water Birds; from Mr. R. L. Agassiz, a Wilson's Thrush (*Turdus fuscescens*), a Northern Eider (*Somateria mollissima borealis*), three King Eiders (*Somateria spectabilis*), and a Cory's Shearwater (*Puffinus borealis*), all in the form of skins and all taken at or near Newport, Rhode Island; from Mrs. G. H. Boutwell, a male Silver Pheasant (*Euplocamus nycthemerus*) received in the flesh, and mounted at the Museum by Mr. Michael Reitz; from Mr. Samuel Henshaw, a nest of the House Sparrow (*Passer domesticus*) from Cambridge; from Mr. William Brewster, seventy skins, representing thirty-eight species of birds, most of which were taken in the United States and the West Indies.

No mammals have been received during the past year. As I stated in the Report for 1895-96 (p. 46), the systematic as well as faunal collections of mounted mammals were long since so nearly completed along the lines which govern the general plan of the exhibition collections, that it is neither practicable nor desirable to add largely to them in the near future, but some of the specimens which have been long exposed to a strong southern light have become so badly faded that they will have to be replaced at no distant day. A pressing need, however, is that of a

collection of mammal skins for purposes of scientific study and comparison. It is true that we already have some material of this kind, but it is too insignificant in quantity and too inferior in quality to merit the title of a collection. Within the past twenty years the methods of collecting, preserving, and studying mammals have undergone a radical change, and in the eyes of modern mammalogists a skin which is not accompanied by certain prescribed measurements taken from the freshly killed animal, as well as by its skull neatly cleansed and accurately labelled, is of little practical value. We possess few such skins, and if it be considered desirable to equip the Museum with a collection adequate to the needs of those who wish to study mammals scientifically, the matter should be taken in hand as speedily as possible.

Various skins of mammals and birds have been loaned for purposes of study and for use as illustrations in lecture courses.

The Assistant has published the following articles and notes : —
In “ The Auk : ” —

The Short-eared Owls of Muskeget Island.
The Spelling of Names.

In the “ Proceedings of the New England Zoölogical Club : ” —
An undescribed Clapper Rail from Georgia and East Florida.

In the “ Boston Evening Transcript : ” —
A letter relating to the House or English Sparrow question.

REPORT ON THE REPTILES AND FISHES.

BY SAMUEL GARMAN.

VARIOUS additions to these collections have been received from the "Balestier Collection," from Dr. G. L. Allen, John T. Arundel, Esq., Mr. Walter Deane, Dr. J. W. Folsom, Prof. H. Garman, B. Grover, Esq., Mr. A. H. Higginson, Dr. Freeland Howe, Reginald Heber Howe, Esq., Mr. John Means, Dr. E. Montanus, Dr. G. H. Parker, Dr. W. McM. Woodworth, and from others. All of the duplicate material sent out has been in aid of students in special lines of investigation. The number of requests for assistance in regard to matters pertaining to Herpetology and Ichthyology shows a considerable increase. Aside from a small amount of evaporation and the ordinary amounts of bleaching and discoloration among the alcoholic specimens, little change is to be noticed in either the storage or the exhibition rooms. Identification of various collections recently acquired, improvements and changes in the exhibition series, some experimentation in connection with new preservatives, and care of the material in general have taken some time, but much the greater portion has been devoted to continuation of the deep sea researches under way last year.

Two publications relating to these departments were made in the Proceedings of the New England Zoölogical Club, "Concerning a Species of Lizard from Clipperton Island," and "A Species of Goby from the Shores of Clipperton Island."

REPORT ON THE ENTOMOLOGICAL DEPARTMENT.

BY SAMUEL HENSHAW.

ADDITIONS to the collections of the Department have been received from Miss Bertha Parker, Messrs. A. L. Babcock, Outram Bangs, Frederick Blanchard, H. K. Burrison, W. E. Castle, C. M. Cooke, Jr., E. W. Cross, J. H. Emerton, H. C. Fall, W. G. Farrow, Walter Faxon, W. L. W. Field, James Fletcher, J. W. Folsom, J. W. Freese, G. L. Goodale, Roland Hayward, J. G. Jack, R. T. Jackson, Hugo Kahl, G. B. King, A. H. Kirkland, A. G. Mayer, C. J. Maynard, A. P. Morse, G. H. Parker, B. L. Robinson, S. H. Scudder, J. D. Sornborger, Roland Thaxter, E. B. Williamson, R. H. Wolcott, and J. B. Woodworth.

The specimens brought from Samoa by Dr. Woodworth, and the collection, chiefly from New England, presented by Mr. Charles Bullard, are the largest and most noteworthy of the accessions received.

A large series of Odonata, including all the unidentified material from the more tropical portions of North America, from Central America, and from South America, have been loaned Dr. P. P. Calvert to aid his study for the *Biologia Centrali Americana*.

The collections continue in excellent condition; their use by specialists is constant.

Progress has been made in the identification and arrangement of portions of the Hymenoptera (Vespidæ, Chrysidæ, and Formicidæ), of the Coleoptera (Cicindelidæ, Carabidæ, Dytiscidæ, Coccinellidæ, Chrysomelidæ, and Rhynchophora), and of the Hemiptera (Pentatomidæ and Coccidæ).

Work upon the types commenced last year has been continued, and a beginning, possible only by the addition of new boxes, has been made in the assortment of the Australian and Fijian material brought together by Mr. Agassiz and his assistants.

REPORT ON THE MOLLUSCA AND CRUSTACEA.

BY WALTER FAXON.

MOLLUSCA.—The collection of shells given to the Museum by the heirs of Warren Delano, noticed in last year's report, was worked up last winter by Mr. Charles W. Johnson, of the Wagner Free Institute of Philadelphia, and during the spring all the shells comprised in this collection, answering to 880 catalogue numbers, were numbered, catalogued, and arranged by Miss E. B. Bryant. The whole expense involved in the care of this collection was generously borne by Mr. Frederic A. Delano, of Chicago. Accompanying the Delano shells is a beautiful set of colored fac-similes of the sixty-one plates of George Perry's "Conchology" (London, 1811), done in Hong Kong for Mr. Delano by Chinese artists about 1845.

Mr. Agassiz has given a small collection made in Samoa by Dr. W. McM. Woodworth in 1898. Mr. F. N. Balch, of the Harvard Law School, has deposited specimens of *Assiminea modesta* Verr. from Cold Spring Harbor, Long Island. Further additions to the New England collection have been made by the Rev. R. K. Smith and Mr. W. F. Clapp. The collection of Achatinellæ has been improved by exchanges made with Mr. D. W. Peck. Remarkably perfect specimens of *Vermetus* from the West Indies have been purchased of N. L. Wilson, of Boston.

MM. Bouvier and Fischer's memoir on the anatomy of Pleurotomaria, based on a specimen furnished by this Museum, has been published in the Archives de Zoologie Expérimentale, 3d Sér., T. vi., Nos. 1, 2, 4 pll., 1898. The authors give a list of all the known specimens of the four recent species of Pleurotomaria. To these should be added two specimens of *P. adansoniana* in this Museum, never hitherto recorded. They were both dredged in ninety-four fathoms by the "Blake" at Station 276, off the Barbados. One is a fine specimen in the flesh, whose shell measures 102 mm. in longest base diameter by 90

mm. in height. The other is a dead shell, 133 mm. in diameter by 131 mm. in height.

CRUSTACEA. — Gifts of specimens have been received from Messrs. A. Agassiz, C. F. Baker, O. Bangs, W. F. Ganong, H. B. Ward, and E. B. Williamson. A set of duplicates from the dredgings of the "Travailleur" and "Talisman" has been presented by the Paris Museum. From the United States National Museum 45 species (60 specimens) have been received in exchange for 47 species (167 specimens) sent to Washington. A very valuable gift from the National Museum consists of a set of photographs of type specimens of Crustacea in various European museums, taken by Miss M. J. Rathbun in 1896. This set includes photographs of the types of 38 of Fabricius's species, described in 1775-1798, and now in the Museums of Kiel and Copenhagen; 24 of Herbst's (1782-1804), now in the Berlin Museum; 3 of von Martens's, also in Berlin; 4 of de Saussure's, in Geneva; 1 of Adam White's, in the British Museum; 17 of Milne Edwards's (father and son), in Paris; 1 of Schramm's, also in Paris. These prints are invaluable aids in determining many obscurely described species, especially those of Fabricius and Herbst.

REPORT ON THE DEPARTMENT OF VERTEBRATE
PALÆONTOLOGY.

BY CHARLES R. EASTMAN.

A NOTABLE increase has been made during the past year in the department of fossil fishes, especially those from Palæozoic horizons, and negotiations for still further accessions are in progress. A number of valuable specimens have been presented by friends of the Museum, and other desiderata have been acquired through purchase or exchange. August and a part of September of last year were spent by the Assistant in the highly fossiliferous localities of Iowa, Illinois, and Wisconsin; on this trip a number of public and private collections were examined, and as guest of the Iowa Geological Survey, some valuable field-experience was enjoyed.

The generosity of Professor Calvin, Director of the Iowa Survey, and his assistant Professor Udden, in presenting the Museum with some of the most important Devonian fishes yet found in that region has greatly enriched our series of Devonian fishes. One of the earliest collectors of Ohio Placoderms, Rev. H. Herzer, has donated some choice specimens of Corniferous fishes, and from the family of the late Mr. S. A. Miller, of Cincinnati, a number of Devonian and Carboniferous fossils have been received. Mention should be made also of interesting new material discovered by Mr. N. H. Darton in the Jurassic of the Black Hills, South Dakota, which, exclusive of the types, has been freely offered to the Museum. Many valuable specimens have been borrowed from different sources during the year for purposes of study, and a review has been undertaken of the Palæozoic fishes of North America, to appear in a forthcoming Memoir.

With the aid of a dental engine procured for the Department, a large number of specimens have been placed in better condition for study or for exhibition, and others have been carefully

mended. Two of the chief treasures of the Museum have been mounted by Mr. J. H. Emerton, and are shortly to be placed on exhibition. These are the type-specimen of *Titanichthys agassizi* N. and a practically complete skeleton of *Dinichthys terrelli* N., from the Cleveland Shale of Ohio. The disassociated parts having been variously interpreted, it is hoped that this novel attempt to show them in their natural position will prove instructive.

With the exception of some Proboscidean remains saved from the fire of the Boston Museum and presented to this Department, very little has been added to the Mammalian or Reptilian series. They remain, however, in excellent condition, and contain not a few choice specimens which eventually will be mounted. Arrangements are being made with a Kansan collector for spending part of the present summer in the field, mainly in search of fossil mammals and reptiles.

Additions to the Collection during the Year.

1898. Calvin Collection. A number of additional specimens from the State Quarry beds of Johnson County, Iowa, similar to those collected in 1897. Presented by Prof. Samuel Calvin.

1898. Udden Collection. A series of specimens from the Sweetland Creek beds (Upper Devonian) of Muscatine County, Iowa. Also mandible of *Dinichthys pustulosus* from the Hamilton of Buffalo, Iowa, and two new species of *Dipterus* teeth from the Cedar Valley limestone. Presented by Prof. J. A. Udden.

1898. Herzer Collection. Several rare specimens from the Corniferous limestone of Ohio. Presented by Rev. H. Herzer.

1898. Miller Collection. Fossil fishes from various Devonian and Carboniferous localities. Presented by Mrs. S. A. Miller.

1908. Douglass Collection. Teeth of *Carcharodon megalodon*, *Oxyrhina hastalis*, and other Tertiary sharks from Aria, Peru (also Devonian invertebrates from near Lake Titicaca). Presented by Mr. A. E. Douglass.

1899. Darton collection. Several well-preserved Jurassic Pholidophori — the first yet found in North America — from the Black Hills of South Dakota. Presented by Mr. N. H. Darton.

1899. Kinnear Collection. A small lot of Old Red Sandstone fish remains from Forss, Scotland. Purchased.

1899. Boston Museum Collection. Miscellaneous fish and mammalian remains, mostly mastodon and mammoth teeth. Presented.

Papers published during the Year.

Some new American Fossil Fishes. *Science*, Vol. IX., pp. 642
May 5, 1899.

Descriptions of New Species of Diplodus Teeth from the Devonian
of Northeastern Illinois. *Journ. Geology*, Vol. VII. No. 5. Sep-
tember, 1899.

Text-book of Palæontology, Vol. I. Translated and edited from the
German of Karl A. von Zittel. Part 2. Mollusca to Vertebrata.
(In press.)

REPORT ON INVERTEBRATE PALÆONTOLOGY.

BY ALPHEUS HYATT.

THE revision of the genera of fossil Cephalopods has been completed from the Trias to the Present period, the fossils rearranged and placed in better shape as regards labelling.

The results of this work will appear in the Text Book of Palæontology by Karl A. von Zittel, chapter on Cephalopoda, now in press.

The department is indebted to Dr. R. T. Jackson for the selection of materials to be placed on exhibition in the Stratigraphic collection. This gentleman also spent considerable time in reviewing and improving the condition of the Mesozoic and greater part of the Tertiary Gasteropoda.

Mr. A. W. Grabau was permitted to study the Tertiary Fusidæ.

Mr. Charles Schuchert reports progress on the Palæozoic Starfishes loaned to him, and expects to finish his work at an early date.

The following papers have been published:—

Cycle in the Life of the Individual (Ontogeny) and in the Evolution of its own Group (Phylogeny). By Alpheus Hyatt. *Science*, Jan., 1897, pp. 161-171, and same with emendations, *Proc. Am. Acad. Arts and Sciences*, Vol. XXXII., March, 1897.

Localized Stages in Development in Plants and Animals. By Dr. R. T. Jackson, *Mem. Bost. Soc. Nat. Hist.* Vol. V., 1899, pp. 89-153, with plates 16-25.

REPORT ON THE LIBRARY.

BY MISS F. M. SLACK.

DURING the year ending July 1, 1899, the Library has received 256 volumes, 2,180 parts, and 128 pamphlets.

	VOLUMES.	PARTS.	PAMPHLETS.
Gift	9	87	25
Exchange	163	888	73
Purchase	7	240	
A. Agassiz	77	969	31
	<u>256</u>	<u>2,184</u>	<u>129</u>

Whole number of volumes: —

Museum Library	24,189
Whitney Library	5,000
	<u>29,189</u>
Volumes of bound pamphlets	3,026
	<u>32,215</u>

Whole number of pamphlets: —

Bound	17,965
Unbound, Museum Library	429
“ Whitney Library	5,000
	<u>23,394</u>

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PUBLICATIONS

OF THE

MUSEUM OF COMPARATIVE ZOOLOGY

FOR THE ACADEMIC YEAR 1898-99.

Of the Bulletin : —

Vol. XXXII.

No. 9. ACALEPHS FROM THE FIJI ISLANDS. By A. AGASSIZ and A. G. MAYER.
pp. 35. 17 Plates. February, 1899.

Vol. XXXIII., *complete*.

THE ISLANDS AND CORAL REEFS OF FIJI. By A. AGASSIZ. pp. 167. 120
Plates. May, 1899.

Vol. XXXV.

No. 1. Reports on the Dredging Operations off the West Coast of Central America to the Galapagos, to the West Coast of Mexico, and in the Gulf of California, in charge of Alexander Agassiz. Carried on by the United States Fish Commission steamer "Albatross" during 1891. Lieut.-Commander Z. L. Tanner, U. S. N., commanding. XXVII. Preliminary Account of Planktonemertes Agassizii. A New Pelagic Nemertean. By W. McM. WOODWORTH. pp. 4. 1 Plate. July, 1899.

No. 2. The Anatomy and Physiology of the Mouth-Parts of the Collembolan, *Orchesella cincta* L. By JUSTUS WATSON FOLSOM. pp. 32. 4 Plates. July, 1899.

[B]

INVESTED FUNDS OF THE MUSEUM.

IN THE HANDS OF THE TREASURER OF HARVARD COLLEGE, SEPT. 1, 1898.

Sturgis-Hooper Fund	\$100,000.00
Gray Fund	50,000.00
Agassiz Memorial Fund	297,933.10
Teachers and Pupils Fund	7,594.01
Permanent Fund	117,469.34
Humboldt Fund	7,740.66
Virginia Barret Gibbs Fund	5,000.00
Henry L. Pierce Fund, for Salary of Curator	100,000.00
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	\$685,737.11

The payments on account of the Museum are made by the Bursar of Harvard College, on vouchers approved by the Curator. The accounts are annually examined by a committee of the Overseers. The only funds the income of which is restricted, the Gray and the Humboldt Funds, are annually charged in an analysis of the accounts, with vouchers to the payment of which the income is applicable.

The income of the Gray Fund can be applied to the purchase and maintenance of collections, but not for salaries.

The income of the Virginia Barret Gibbs Scholarship Fund, of the value of \$250, is assigned annually with the approval of the Faculty of the Museum, at the recommendation of the Professor of Zoölogy and of Comparative Anatomy in Harvard University, "in supporting or assisting to support one or more students who have shown decided talents in Zoölogy, and preferably in the direction of Marine Zoölogy."

The income of the Humboldt Fund (about \$300) can be applied for the benefit of one or more students of Natural History, either at the Museum, the United States Fish Commission Station at Wood's Hole, or elsewhere.

Applications for the tables reserved for advanced students at the Wood's Hole Station should be made to the Faculty of the Museum before the 1st of May. Applicants should state their qualifications, and indicate the course of study they intend to pursue.



The following Publications of the Museum of Comparative Zoölogy
are in preparation:—

Reports on the Results of Dredging Operations in 1877, 1878, 1879, and 1880, in charge of ALEX-
ANDER AGASSIZ, by the U. S. Coast Survey Steamer "Blake," as follows:—

- E. EHLERS. The Annelids of the "Blake."
C. HARTLAUB. The Comatulæ of the "Blake," with 15 Plates.
H. LUDWIG. The Genus *Pentacrinus*.
A. E. VERRILL. The Aleyonaria of the "Blake."

Illustrations of North American MARINE INVERTEBRATES, from Drawings by BURK-
HARDT, SONREL, and A. AGASSIZ, prepared under the direction of L. AGASSIZ.

- LOUIS CABOT. Immature State of the Odonata, Part IV.
E. L. MARK. Studies on *Lepidosteus*, continued.
" On *Arachnactis*.
R. T. HILL. On the Geology of the Windward Islands.
W. McM. WOODWORTH. On the Bololo or Palolo of Fiji and Samoa.
A. AGASSIZ and A. G. MAYER. The Acalephs of the East Coast of the United States.
A. G. MAYER. An Atlantic "Palolo."
A. G. MAYER. Acalephs from the Tortugas, Florida.
AGASSIZ and WHITMAN. Pelagic Fishes. Part II., with 14 Plates.

Reports on the Results of the Expedition of 1891 of the U. S. Fish Commission Steamer
"Albatross," Lieutenant Commander Z. L. TANNER, U. S. N., Commanding, in charge of
ALEXANDER AGASSIZ, as follows:—

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| A. AGASSIZ. The Pelagic Fauna. | C. F. LÜTKEN and TH. MORTENSEN. |
| " The Echini. | The Ophiuridæ. |
| " The Panamic Deep-Sea Fauna. | E. L. MARK. <i>Branchiocerianthus</i> . |
| J. E. BENEDICT. The Annelids. | JOHN MURRAY. The Bottom Specimens. |
| K. BRANDT. The Sagittæ. | ROBERT RIDGWAY. The Alcoholic Birds. |
| " The <i>Thalassicolæ</i> . | P. SCHIEMENZ. The Pteropods and Hete-
ropods. |
| C. CHUN. The Siphonophores. | W. PERCY SLADEN. The Starfishes. |
| " The Eyes of Deep-Sea Crustacea. | I. STEJNEGER. The Reptiles. |
| W. H. DALL. The Mollusks. | THEO. STUDER. The Aleyonarians. |
| S. GARMAN. The Fishes. | M. P. A. TRAÜTSTEDT. The Salpidæ and
Doliolidæ. |
| H. J. HANSEN. The Cirripeds. | E. P. VAN DUZEE. The Halobatidæ. |
| W. A. HERDMAN. The Ascidians. | H. B. WARD. The Sipunculids. |
| S. J. HICKSON. The Antipathids. | H. V. WILSON. The Sponges. |
| W. E. HOYLE. The Cephalopods. | W. McM. WOODWORTH. The Nemerteans. |
| G. VON KOCH. The Deep-Sea Corals. | |
| C. A. KOFOID. <i>Solenogaster</i> . | |
| R. VON LENDENFELD. The Phospho-
rescent Organs of Fishes. | |

PUBLICATIONS
OF THE
MUSEUM OF COMPARATIVE ZOOLOGY
AT HARVARD COLLEGE.

There have been published of the BULLETINS Vols. I. to XXXIII. ; of the MEMOIRS, Vols. I. to XXII.

Vols. XXXIV. and XXXV. of the BULLETIN, and Vols. XXIII. and XXIV. of the MEMOIRS, are now in course of publication.

The BULLETIN and MEMOIRS are devoted to the publication of original work by the Professors and Assistants of the Museum, of investigations carried on by students and others in the different Laboratories of Natural History, and of work by specialists based upon the Museum Collections.

The following publications are in preparation :—

Reports on the Results of Dredging Operations from 1877 to 1880, in charge of Alexander Agassiz, by the U. S. Coast Survey Steamer "Blake," Lieut. Commander C. D. Sigsbee, U. S. N., and Commander J. R. Bartlett, U. S. N., Commanding.

Reports on the Results of the Expedition of 1891 of the U. S. Fish Commission Steamer "Albatross," Lieut. Commander Z. L. Tanner, U. S. N., Commanding, in charge of Alexander Agassiz.

Contributions from the Zoölogical Laboratory, in charge of Professor E. L. Mark.

Contributions from the Geological Laboratory, in charge of Professor N. S. Shaler.

Studies from the Newport Marine Laboratory, communicated by Alexander Agassiz.

Subscriptions for the publications of the Museum will be received on the following terms :—

For the BULLETIN, \$4.00 per volume, payable in advance.

For the MEMOIRS, \$8.00 " " " "

These publications are issued in numbers at irregular intervals ; one volume of the Bulletin (8vo) and half a volume of the Memoirs (4to) usually appear annually. Each number of the Bulletin and of the Memoirs is also sold separately. A price list of the publications of the Museum will be sent on application to the Librarian of the Museum of Comparative Zoölogy, Cambridge, Mass.

