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ANNUAL REPORT  
OF  
THE DIRECTOR  
OF THE  
MUSEUM OF COMPARATIVE ZOOLOGY  
AT HARVARD COLLEGE  
TO THE  
PRESIDENT OF HARVARD COLLEGE  
FOR  
1941-1942

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CAMBRIDGE, U. S. A.  
PRINTED FOR THE MUSEUM  
1942

PUBLICATIONS  
OF THE  
MUSEUM OF COMPARATIVE ZOÖLOGY  
AT HARVARD COLLEGE

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The BULLETIN and MEMOIRS are devoted to the publication of investigations by the Staff of the Museum or of reports by specialists upon the Museum collections or explorations.

Of the BULLETIN, Vols. I to XC, and Vol. XCI, No. 1 and No. 2 have appeared and of the MEMOIRS, Vol. I to LVI.

These publications are issued in numbers at irregular intervals. Each number of the Bulletin and of the Memoirs is sold separately. A price list of the publications of the Museum will be sent upon application to the Director of the Museum of Comparative Zoölogy, Cambridge, Massachusetts.

After 1941 no more Memoirs are to be published.

# ANNUAL REPORT

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## THE DIRECTOR

OF THE

# MUSEUM OF COMPARATIVE ZOÖLOGY

## AT HARVARD COLLEGE

TO THE

## PRESIDENT OF HARVARD COLLEGE

FOR

# 1941-1942

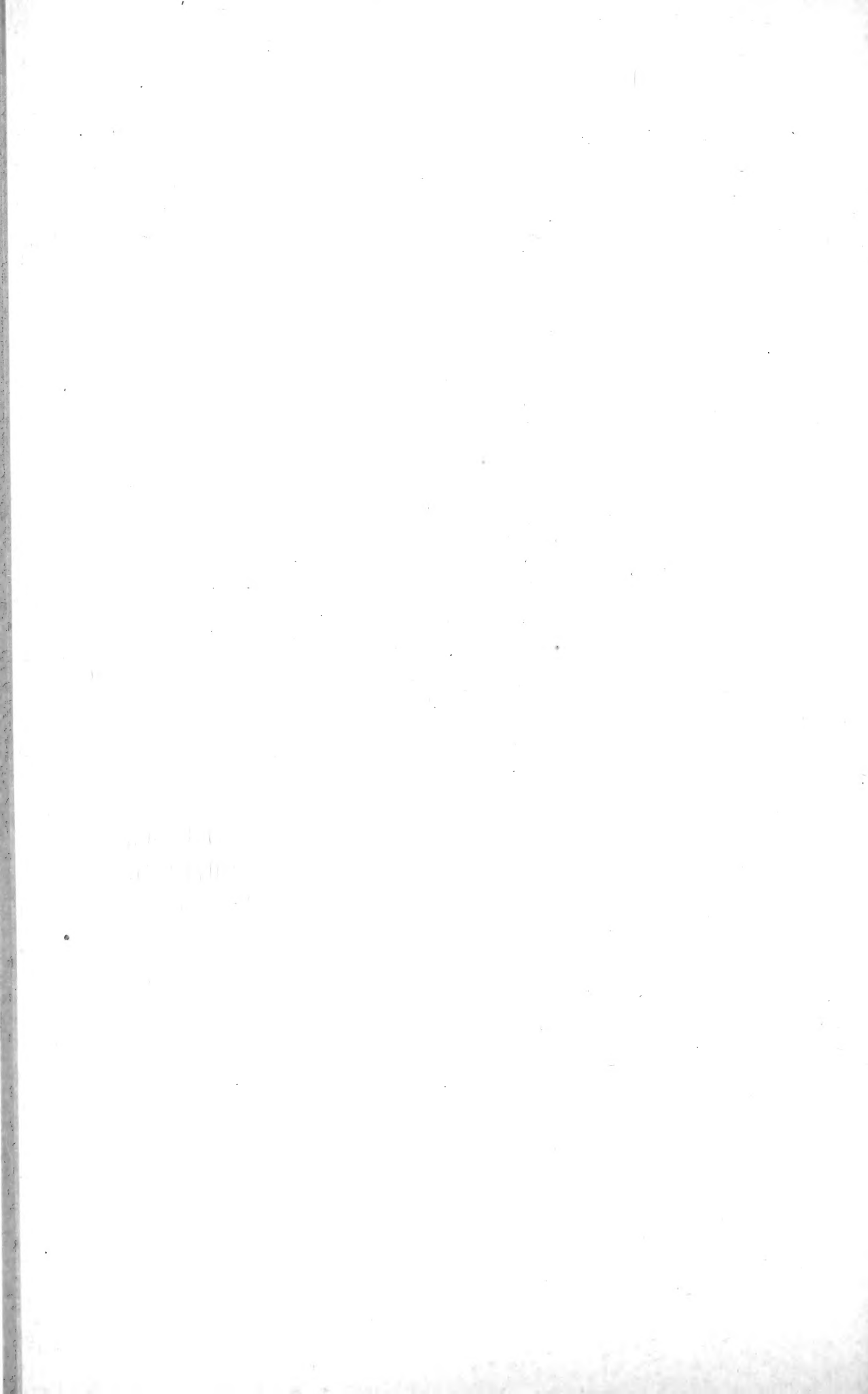
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# MUSEUM OF COMPARATIVE ZOÖLOGY

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LOUIS CARYL GRATON . . . . . *Sturgis Hooper Professor of Geology*



REPORT OF THE DIRECTOR  
1941-1942

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TO THE PRESIDENT OF HARVARD COLLEGE:

Sir:-

One of the greatest losses which the Museum has suffered during its long existence occurred when Doctor Glover M. Allen died suddenly February 14, 1942. Suitable memoirs concerning his splendid contributions to zoological literature and his services to the University have been published elsewhere.

On January 7, 1942 Robert A. Gilbert died. For years before he came to the Museum he had helped Mr. Brewster in many ways and his sterling personal characters of integrity, affection, courtesy, and loyalty made him not only a honor to his race but one who was proud to do everything which he did as well as he could do it, and who was beloved by us all.

Last year I made a stupid mistake in my Annual Report which I want to correct as soon as possible: I spoke of Mr. J. Henry Blake as being the last pupil of Professor Louis Agassiz to survive. How I could have forgotten that President Edward A. Birge of the University of Wisconsin was still not only alive but, we all rejoice to say, very much alive, is just one of those things. One can say, "I am sorry. I was stupid," and there isn't very much more to say.

Five members of the Staff of the Museum have joined the armed forces of the United States. They are R. Tucker Abbott, James C. Greenway, Jr., Benjamin Shreve, Philip J. Darlington and Theodore E. White. Several others, including Messrs. Coolidge, Griswold, Iselin, and Stetson, are absent on war work. Miss Wilder and Miss Porter who have served the Museum faithfully in many capacities for many years left us to get married and their places are not easy to fill as they were both especially devoted and efficient. Mrs. Myvanwy Dick, however, has joined the group of volunteer workers here and her artistic abilities have been greatly appreciated as she has illustrated many of my papers during the year and her curatorial work in the Fish Department has been diligent and intelligent. It is she who, in great part, has segregated the fish types, although I suspect there are a great many more of them still to be found. Nevertheless some 2000 have already

been placed where, in case of necessity, they could be moved promptly and easily.

Richard W. Foster is another who has been working quietly and inconspicuously in the Mollusk Department for many years. He has trained himself so that he bids fair to be an authority in time on the cephalopod mollusks, a group where curatorial work in this Museum is badly needed. Latterly he has aided us in exploration and has presented to us some magnificent mounted fish which have added greatly to the beauty of our exhibition halls. More than this he has had them mounted excellently and has erected a case in which they are now displayed. He has added some welcome storage cases in the Mollusk Department which was very badly needed. He has our deep gratitude for his constant generosity.

For the first year in many years I was unable to visit Cuba. I did, however, spend my time quite profitably in Florida where, in company with Doctor T. E. White, I visited the phosphate mines several times, enlisting interest in the search for and the preservation of fossils as they appear in the process of hydraulic mining. We met with success and Doctor White is describing a very interesting new pig and another ally of the prong horned antelope, and we await a visit from Doctor Kellogg to study the remains of the fossil whales which we also secured. Work at the Thomas Farm in Gilchrist County, Florida, proceeded very satisfactorily. This was aided in part by grants from the Milton Fund of Harvard University and the Marsh and Bache Funds of the National Academy of Sciences, one of the latter grants being applied to exploration and the other to preparation. White has now gone to the Army, but before he left he prepared a manuscript describing the lower Miocene fauna of Florida, indicating that we now have 18 genera and 22 species of mammals from this extraordinary locality. More than that we have indications, in the form of fragments, which while they are identifiable, are not complete enough to use as types, of other new species. These show that at least another dozen forms await better material before they may be named and described. Dr. H. E. Wood 2nd of the University of Newark is preparing a report on the Miocene species of rhinoceros from the same locality. He has visited the Museum and informs us that they are the most important additions to knowledge concerning the phylogeny of the rhinoceros that have appeared in many years. I purchased forty

acres of land surrounding the pit from which these forms have been dug, and have conveyed them to the University of Florida under certain restrictions concerning work there in the future. Whether or not it will be possible for me to continue work there this year I am unable at present to state, but I have all the new material now well figured by Mr. Fischer, and it will be published shortly.

Mr. Nelson, during the year, has completed several more of his breath-taking slab mounts: our old Cave Bear skeleton in its new setting looks like an entirely new specimen, and the great primitive amphibian, *Eryops*, now in a panel mount is strikingly beautiful.

During the year I have occupied myself with studies of the deep sea fish taken by the *Atlantis* in the waters about Cuba, have written a new Ornithology of Cuba as my old *Birds of Cuba*, published in 1923, is out of print. I also have a fifth edition of the Check List of North American Amphibians and Reptiles perhaps seventy-five percent completed. Miss Robinson, who, through long familiarity with the literature, is able to help me with this in a great degree hopes to complete it in perhaps two more months. I lay out the additional material to be included in the manuscript and, fortunately for me, she knows the form in which it should be inserted, thus saving me a great deal of time.

I recall with gratitude the action taken by the United States National Museum in returning to us the type of *Scolecophis fumiceps* after it had lain unnoticed in their collections for nearly half a century. This was a kind return for something of a similar nature which we were able to do for the Museum in Washington a few years ago.

A considerable portion of my time, during the last year, has been taken up with consideration of matters concerning the Boston Museum of Natural History. I have, after having laid it down some years ago, again taken the responsibility as President of the Institution, which I must say is doing a useful work in spite of its limited income. I have also been entrusted by the Trustees of the Peabody Museum in Salem with the task of supervising re-installation of their natural history collections from Essex County and the sorting over and disposing of other botanical and zoological collections for which they now have no use. A few interesting and valuable specimens have turned up during the course of this work but it was not unusual to find a package, carefully tied up, covered with soot, which, when dusted off, revealed the

superscription, "Please do not disturb these specimens. .C. Cooke, 1857." It is seldom that a request of this sort is respected for so long a period of time.

Mr. Frank E. Firth of the United States Fish and Wild Life Service has unique opportunity, in connection with his statistical work, to watch the fish as they come to the markets of Boston and Gloucester. Thanks to his keen eye and generosity we have received some rare and interesting deep sea fish, both taken fortuitously as well as secured from the stomachs of sword fish, which feed at times in very deep water.

At the last meeting of the Faculty of the Museum, after long discussion, it was decided to publish no more papers presented to the Museum for publication in quarto form and to terminate the Memoir series. The decision to do this was set forth in the following words: "I wish to announce the discontinuation of the Memoir series of the Museum of Comparative Zoology with Volume 55. It was begun nearly eighty years ago, when all of the large institutions had a quarto publication, and it was still financially possible for sumptuous monographs to appear in folio size with hand-colored plates. The folio age has long since passed, and the last three decades have seen the passing of the quarto volume, as unnecessarily extravagant and wasteful of paper. In the present war-torn world, with declining stocks of paper, type fonts and printing machinery, shrinking publication funds can better be devoted to an increased output of scientific research rather than a more sumptuous format for some of it."

Professor and Mrs. Archie F. Carr, Jr., of the University of Florida at Gainesville, were visitors at the Museum this summer, as they have been on many occasions in the past, and Doctor Carr, working with reptiles, and Mrs. Carr, with mammals, have put us deeply in their debt for the assistance which they have given us during their stay. The reports of the several curators will indicate the names of other scientific visitors during the year and the objects for which they made their visits.

A somewhat facetious article, concerning the whimsical vagaries of museum workers, I submitted to the Atlantic Monthly. This led first to my doing a series of articles and finally to writing a book, very largely about myself and my travels, so that I have ended up by doing the one thing which I have declared on innumerable occasions I would



never do and I have always preened my feathers that I had made this decision. My feathers now will remain ruffled for the rest of my life.

Of course every elderly person in an administrative capacity wonders whether or not he is pulling his weight in the boat in times like these through which we are passing and there have been innumerable periods of sleepless soul-searching when I wondered whether or not the Museum should be folded up, so to speak, for the duration. Then I read something which clarified my thoughts and proved extraordinarily comforting. You remember when Justice Holmes told of walking down Pennsylvania Avenue on a drizzly night, after a long session of the Court which had involved argumentation, perplexity and perhaps some bickering, and then raising his eyes and looking ahead he saw out over the Treasury Department clear sky and the shining of stars. Well, the stars have shone for me in the form of some lines recently written by my friend Doctor Albert Eide Parr, the distinguished new Director of the American Museum of Natural History in New York. Feeling that we need a credo about which we can join in our work he continues: "This war is not a war for material gain, but a war for the protection of a civilization. Therefore, the spiritual home front has an importance in this struggle which it never had in the imperialistic battles of old. And on this spiritual home front the war itself imposes a terrible handicap upon our efforts. Democracy is a type of government designed for peace and civilized living. We who have had opportunity to mature in a democracy at peace have learned to love it for the beauty it reveals under the proper conditions for its existence. Our love for it is permanent. We can suspend its freedom for its own protection, and hide many of its beauties to the world, safe in the knowledge that we shall only long for the day when we can set it free again. But in the meantime young people are growing up — young people who will spend their formative years in a democracy looking its worst under conditions for which it was not designed. The educational system of which we are a part therefore has the stupendous responsibility to the future of democracy and of our nation, of teaching the generations of tomorrow to love a way of life which by their own actual experience they will only have opportunity to observe as a tired and harassed image of its former beauty in times of peace, and of the beauty it shall regain anew after victory if we do not permit it to become permanently marred by neglect in the meantime.

“Of course our efforts would be wasted if victory should not be won. And I know there are people who sincerely believe that for that reason we ought to reduce our cultural efforts to the lowest possible maintenance level. In my opinion the terrible handicaps under which we are striving to implant in future generations an appreciation of the things for which we are fighting today call for the entirely opposite attitude. The effort of our physical victory may also prove wasted if in the meantime we have lost on the spiritual front. And I do not propose to apologize for having sufficient faith in our ultimate victory to consider the continued growth and development of the cultural and educational institutions to be one of the most essential duties which can be borne in our nation today, second only to the duty of those defending our right to have the civilization we want. At least that is the conviction in which I myself carry on.”

And who but Robert E. Lee could ever have written these words: “The march of Providence is so slow, and our desires so impatient, the work of progress is so immense, and our means of aiding it so feeble, the life of humanity is so long, and that of the individual so brief, that we often see only the ebb of the advancing wave, and are thus discouraged. It is history that teaches us to hope.”

## REPORT ON ECHINODERMS

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BY HUBERT LYMAN CLARK

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The past year has been a very uneventful one in the Department of Marine Invertebrates. As in previous years the reports of Doctors Deichmann and Chace speak for themselves. It is a privilege, however, again to express the Curator's high appreciation of their invaluable cooperation and constant helpfulness. The work of Mrs. Pattee, as Research Assistant, also demands more than a passing word for her industry and skill have achieved much in the arrangement and cataloging of the collections. She has completed the new catalogue of the ophiurans on the large-size cards and has begun that of the echini. As the ophiurans comprise more than a third of the entire collection of echinoderms, not only in number of specimens but in

number of species as well, it is a great improvement to have the information about them in this much more convenient and accessible form.

The Curator's time has been given almost wholly to work on the report on the echinoderm fauna of Australia, which is now approaching completion, so far as the annotated catalogue of species, both recent and fossil, is concerned. It is hoped that the discussion of the distribution and probable origin of the fauna may be completed before 1943.

The accessions of the year have been unusually few though the list of donors is unusually long. No crinoids were received but 406 specimens of the other four classes have been incorporated in the collection. The Boston Society of Natural History have given us 20 desirable Echini, and Messers R. W. Foster and J. H. Huntington 37 West Indian sea-stars, brittle-stars and echini. Mr. James Miller continues his interest in the collection and has added some 150 specimens to his previous generous gifts. Captain B. E. Bardwell has sent us from Broome, W. A., a superb specimen of the remarkable spatangoid, *Rhynobrissus macropetalus*, of which the only known specimen hitherto was our completely crushed holotype. Dr. Deichmann and Mr. Schroeder of the Museum staff have presented sea-stars and holothurians. Other Echinoderms have been given us by Drs. William Beebe, Ralph Bolin, H. G. Kugler, H. B. Moore, L. Howell Rivero and O. L. Williams and by Messrs. Tucker Abbott, Hal Bell, C. N. Ely, L. Glauert, E. C. Leadley, F. E. Lewis, L. W. Price and F. Ziesenne. To all these helpful donors, our sincere thanks are cordially extended.

## REPORT ON OCEANOGRAPHY

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BY HENRY B. BIGELOW

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Mr. Schroeder and I devoted most of our efforts during the year to the Monograph on Sharks of the Western North Atlantic mentioned in last year's report. The first draft of the sections on the Hexanchids and Galeids is nearly complete, including generic and specific descriptions, synonymies, and summaries of what is known of habits as well

as of geographical distribution. We have next to undertake the Squalids and Squatinids. Meantime Mr. Fischer has made 144 drawings out of the total of about 180 that will eventually be needed. The extensive museum collections, added to the loans from various sources mentioned in last year's report and to more recent gifts from Mr. Stewart Springer and Mr. Richard Foster, have enabled us to study first hand the great majority of species concerned. We have been able, in particular, to prepare a key, that we believe to be workable, to the Atlantic members of the large genus *Carcharinus*, specific identifications of representatives of which has long been a bugbear. Other highlights have been the opportunity to compare Floridian specimens of the Mako (*Isurus oxyrinchus*) with its Pacific relative and to study good series of Hammerheads, a group now known to be much more diverse than was formerly supposed.

The relationship—whether Atlantic or Pacific—of the fresh water shark of Lake Nicaragua has long been a problem of great interest. Through the kind auspices of Mr. Francis Richardson of the Carnegie Institution of Washington a specimen was obtained for the Museum last winter, but was lost with the sinking by submarine of the steamer on which it was shipped. It is likely, however, that other specimens may be obtained before long, for we are informed that a Shark Fishery, for liver oil, is now being developed at the Lake; it is even rumored, in fact, that the latter supports two or three different kinds of shark.

Work on the "Dana" siphonophores was suspended, for Dr. Mary Sears was absent most of the winter, carrying on an oceanographic survey from the Chincha Islands, off the coast of Peru, under a Fellowship from Wellesley College and a grant from the Committee on Inter American Cultural and Artistic Relations. We plan to resume work on these very extensive collections this autumn.

During the spring and second summer terms a new course on Invertebrate Zoology (Biology 2B) was offered jointly by Prof. J. H. Welsh and by me in the Department of Biology.

## REPORT ON PHYSICAL OCEANOGRAPHY

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BY COLUMBUS O'D. ISELIN II

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The Woods Hole Oceanographic Institution, of which I am now the Director, has been, to all intents and purposes, taken over by the Navy for a series of investigations concerning which nothing at the present time may be written. My time has been very largely occupied in connection with this work.

The *Atlantis* at present is laid up in Lake Charles, Louisiana, as she was caught far afield when the unlimited submarine warfare began and it has been deemed inadvisable to bring her back to Woods Hole. The *Anton Dohrn*, which was presented to the Oceanographic Institution by the Carnegie Institution of Washington, has been entirely reconditioned, provided with new engines and has turned out to be a highly serviceable vessel to use in connection with these confidential Naval investigations.

It is a pleasure to report here the satisfaction which everyone connected with Oceanography at Harvard has felt on learning that Captain Edward H. Smith, who took his Doctor's Degree in Oceanography in the Museum and who has distinguished himself in connection with the work of the Ice Patrol on the Newfoundland Banks, has been raised to the rank of an Admiral.

## REPORT ON RECENT INSECTS

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BY NATHAN BANKS

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The past year has not added any large collection, but a number of small ones. As usual, Dr. Bequaert presented numerous Diptera and Hymenoptera, largely from South America. Mr. John L. Sperry and his wife gave us 180 named Noctuids, paratypes of three species, and 110 Trichoptera, among the latter some new species. Mr. Carl Parsons added 200 miscellaneous specimens from the West Indies and 380 from Florida. To Mr. Floyd C. Werner we are indebted for over 200

mounted Hawaiian insects, and more than 400 from Illinois. The Boston Society of Natural History sent 3400 unstudied New England insects, chiefly Hymenoptera, a very valuable addition. Mr. R. G. Fennah gave paratypes of 14 species of Antillean Fulgoridae, and nearly 100 Psammocharidae from Trinidad and the Lesser Antilles. Mr. M. J. Westfall, Jr. added 50 named Odonata to our large collection, two species new to us.

Graham Fairchild presented about 50 insects from the Canal Zone and Panama. Marston Bates gave 120 bees and flies from South America, Albania, and Egypt; he also sent us a fine specimen of a large long-tailed Saturnid caught by Mrs. Fairchild. Mrs. E. C. Clark sent 60 insects from British Columbia.

Mr. W. D. Thomas brought back from airplane ferrying trips 50 African insects, several new to the collection. Dr. C. Sabrosky sent paratypes of 11 species of Chloropidae, Prof. A. Emerson paratypes of five species of termites, and Dr. D. Elmo Hardy a paratype of a Mydaid fly.

Prof. C. T. Brues turned over to us many vials of insects from various localities, among them the type of a Stylopid. Mr. E. Halvorsen sent 10 Californian insects, Prof. F. M. Carpenter 30 mixed insects from Idaho, Mr. L. G. Carr five specimens of Virginia butterflies (one new to us), and N. A. Weber 24 Hymenoptera. The Curator added 1100 insects from Massachusetts, New York, Pennsylvania, and Virginia.

The purchased specimens include a wonderfully fine lot of nearly 1000 Hymenoptera, Diptera, Neuroptera, and Coleoptera collected by Mr. N. Geary in Southern Queensland. From Harry Hoogstraal 610 unnamed Mexican moths and 265 other insects, some named, and with paratypes of five species; about 300 Peruvian insects from Dr. J. Soukup, from R. G. Wind 300 New Guinea insects, several species of butterflies from J. Fitch, and over 120 insects, mostly Neuroptera taken by O. Huellemann in Idaho.

A most helpful exchange was made with the Illinois Natural History Survey in which we gave them several hundred duplicate Orthoptera for several hundred Illinois Capsidae; about 50 species were new to our collection.

In regard to arrangement, the year was one of the most successful due to extra help, a new cabinet in the Lepidoptera room, and 100 new boxes.

Prof. Vladimir Nabokov has spent some time each week in the transferring and arrangement of our especially fine collection of Palaearctic butterflies. He finished the Papilionidae, part of the Satyridae, and Lycaenidae. He will continue the work this autumn. More boxes are ordered and these, with some gained through transference of unnamed American Coleoptera, will enable us to house all of the Weeks collection in our standard drawers.

Mr. Carl Parsons was employed for five months, largely in pinning and spreading the Barro Colorado moths; these he finished and several other lots before he was called by the Army.

In early June M. F. Solana, who had helped Dr. Darlington for five years, was employed until the Army calls him. He has helped in the work of transferring, and relining boxes. All of the Derolle collection of weevils that was stored in tins was put into our standard drawers.

Over 100 boxes of Diptera, Hymenoptera, and Hemiptera that had poor lining were transferred to good boxes, and in some cases in a better arrangement.

Mr. G. Erickson, a graduate of Massachusetts Agricultural College was given work under the N.Y.A. on groups of Hymenoptera, Braconidae, and Ichneumonidae. The Braconidae are now arranged and partly named, the Ichneumonidae were mostly finished, but the addition of a thousand from the Boston Society of Natural History will keep him busy this fall.

Mr. L. G. Wesson, a medical student, has assorted the thousands of vials of alcoholic ants of the Wheeler collection, grouped them by faunal areas, and the United States material by genera.

One family of the Central American Orthoptera was arranged by the Curator, but then the available boxes were used in the Lepidoptera.

Mr. A. R. Brooks studied our Gymnosomatinae, a group of Tachinid flies, and described some new species. Dr. C. B. Philip identified many Tabanids and described a few new species. Mr. R. G. Wind named some of our New Guinea butterflies. Mr. Harry Clench worked on many of our Lycaenidae and described some new forms. Mr. G. Comstock has also described some new forms from our Antillean butterflies.

Mrs. J. N. Knull identified our native Typhlocybinae, Mr. Parsons rearranged and further identified the Conopidae, Prof. Frank Hull

has described many new species of our exotic Syrphidae, and Mr. F. Christensen determined some of our unnamed Odonata.

The student assistant fumigated the collections (the Weeks collection three times), went over the alcoholic material, cut and sometimes put on locality or collector labels, assorted catalogue cards, and did some cataloguing.

The Curator has mounted four to five thousand specimens, spread many others to facilitate study, written and put species labels on many thousand specimens, catalogued types in book and on cards, compared insects sent with the types, attended to the correspondence and loans, spread out collections where crowded or identifications made it possible. Four papers were finished during the year and others are in preparation.

Collections were named for the Field Museum, Oregon State College, Ohio State University, Academy of Natural Sciences of Philadelphia, Harry Hoogstraal, D. C. Geijskes of Surinam, and P. J. Anduze of Venezuela. From these certain desirable duplicates were retained for the Museum.

Types of insects catalogued now number 25,953.

Visitors include A. Emerson (termites), G. A. Moore (Hemiptera), Dorothy Knull (Homoptera), John L. Sperry and wife (moths), C. B. Philip (Tabanidae), G. Fairchild (Tabanidae), A. E. Pritchard (Cecidomyiidae), J. Hanson (Perlidae), J. C. Bradley (Hymenoptera, Neuroptera), F. R. Nevin (Acarina), M. J. Westfall, Jr. (Odonata), A. Chickering (Barro Colorado spiders, two visits), and B. J. Kaston (spiders).

In the Arachnida Miss Bryant has received over 100 spiders from Mexico, eight vials from the Dominican Republic, about fifty vials of Nevada spiders from Ira La Rivers, several spiders sent by Dr. A. Audant from Haiti, and a specimen of the rare *Cyclocosmia truncata* taken by Dr. R. E. Wheeler.

Miss Bryant has attended to the collection of spiders and nearly finished a paper on the Attidae of Hispaniola.



## REPORT ON COLEOPTERA

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BY P. J. DARLINGTON, JR.

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This report covers the period only to June 10, 1942. On that date the writer proceeded to Lovell General Hospital as First Lieutenant, Sanitary Corps, Army of the United States (for service as entomologist).

Accessions during the year have been few, and cannot now be listed in detail. No lots of as many as 1,000 specimens were received.

All loans of Coleoptera have been checked, and a complete list of outstanding loans, with the status of each, has been submitted to the Museum office. Letters have been written and are in my files concerning each overdue loan.

The year has been notable for the amount of curatorial work accomplished. For the first time in many years (which have been years of big accessions) we have cut down undistributed material to the point where it is no longer necessary to pile any wooden boxes on the floor — everything is now on shelves or in metal cans. During the year I have myself completed arrangement of the Scarabaeidae of America North of Mexico, in trays, in nearly 50 drawers; have partly remounted and entirely arranged all our exotic *coprophagous* Scarabaeidae (everything in first volume of *Junk Catalogue*), of which we have about 900 identified and about 270 additional unidentified species, with much interesting material especially from Australia and the West Indies; have distributed all exotics (7,000 specimens) from the Fall Collection; and have done other smaller tasks. Mr. Floyd Werner has arranged our large collection of Cassids of the world and most of our Meloidae, our European Chrysomelidae and weevils, and other material, and has mounted and labeled many thousand specimens. We hope that Mr. Werner will be able to continue his part-time work with us for at least another year. He is exceptionally competent and careful.

As to research: I have completed a long paper on Carabid beetles of mountains and islands, with special regard to the state of the insects' wings. This has involved analysis of the faunae of several continental regions as well as study of the special faunae of a number

of mountains and insular areas. The paper has been accepted by *Ecological Monographs* and should appear this winter. Mr. Werner has used our collections extensively in his revision of certain North American Meloidae, as has Dr. Carl Parsons in completing his revision of North American Nitidulidae. Dr. E. C. Zimmerman, of Hawaii, worked in the Coleoptera room and M.C.Z. Library for several months. Dr. J. M. Valentine has studied types of certain Elateridae. Other persons have used the collections for shorter periods.

## REPORT ON MAMMALS

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BY BARBARA LAWRENCE SCHEVILL

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The Museum has suffered a great loss in the death of Dr. Glover M. Allen in February of this year. Associated with the Mammal Department since 1907 and Curator of Mammals since 1924, he worked tirelessly and for long hours to improve the collections. Often without assistants, he never asked for help in a department where the care and preparation of specimens is a tedious, time consuming business. The pages and pages of cataloguing in his neat handwriting, the made-over skins, the thousands of carefully cleaned and labeled skulls, the orderly spacing out of the collections as they grew from year to year all bear witness to the importance he attached to having the material available to all who needed it. To facilitate the use of the collections he painstakingly began, in long hand, having no suitable typewriter, a card index to the specimens; this has been expanded and carried on through the years. Not only did he laboriously care for the collections, but he immeasurably enhanced their usefulness by his willingness to help all those who came to study or find out. A fellow mammalogist, a boy scout earning a merit badge, someone with a possible lump of ambergris, or an anthropologist with a tray of bird and mammal bones, all were free to call on his time, all received the same courteous attention. And with it all through the years he found time to do an incredible amount of research and to prepare with characteristic brevity, clarity, and thoroughness accounts of many things pertaining to mammals.

Owing to Dr. Allen's death and Mr. Coolidge's departure for Washington to take a war job, the activities of the department have been somewhat curtailed this year. Thanks to the capable assistance of Mr. William H. Drury, Jr., the hide room is now properly labeled, the collection of hares has been transferred to the new cases provided last year, and much progress has been made in cataloguing the Batchelder collection. We were fortunate again this year to have Mr. Robert Broge as our student assistant; due to his efforts all the medium sized mammal skulls are now in dust-proof boxes and our card index was brought up to date as of last May. This summer Mrs. Archie Carr, Jr. has been of invaluable assistance in bringing the accession catalogues up to date, and Miss Janet Wulsin has been kind enough to devote part of her vacation to numbering bones for us. I wish particularly to thank Mr. James C. Greenway, Jr. for generously donating the services of his secretary, Mrs. Barbara Baker, to the Mammal Department at a time last spring when there was much reorganizing to be done.

Much of Dr. Allen's time last year was devoted to completing his part of the manuscript on extinct and vanishing mammals which is, I understand, soon to be published. Large quantities of material from the Mugharet el 'Aliya cave in Tangiers were identified, although this work is unfortunately not completed, and various other papers were published, including an account of the mammals from Mr. Loveridge's last African trip. The Acting Curator has continued work on our South American collections of small mammals, prepared reports on Indian dogs for Dr. E. T. Hall, Jr. of the Laboratory of Anthropology at Santa Fe, and for Miss Marion Hollenbach of the Los Angeles County Museum, as well as publishing three short papers. Work on a bibliography of Dr. Allen's publications is now in progress.

Some 384 new specimens have been catalogued. Thanks, as always, are due to Dr. Barbour who has either actually donated or been responsible for our acquiring the greater part of these. Chief among them is a large collection of skulls from the Peabody Museum at Salem which includes such rarities as a California grizzly, a South African lioness, and a Cape of Good Hope warthog; there is also a collection of small mammals from Idaho, mammals from the Third University of Florida Mexican Expedition, six muskrats from Virginia, three *Microtus* from Manchuria, a Florida weasel, and a lion skin. Thanks are also due to E. E. Tyzzer for a Peruvian *Phyllotis*, to H. H. Bailey

for seven *Proechimys* and *Peromyscus* skins, to R. E. Moreau for five skins from Mafia Island, to R. T. Hall, Jr. for Indian dog remains, to Llewlyn Howland for part of a walrus skull, to Emil Haury for bones from Ventana Cave, Arizona, to Foster Disinger for Indian dog remains, to J. C. Greenway, Jr. for a California mule deer skull, and to Mrs. P. W. Cremer-Jansen for two Sumatran monkey skulls.

During the past year Messrs. Eric Hill, G. H. H. Tate, S. L. Washburn, Ernst Schwarz, W. H. Burt, G. N. Rysgaard, E. R. Hall, Victor B. Scheffer, and George Rayner have been here to look at specimens, and ten lots have been sent out on loan.

## REPORT ON THE BIRDS

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BY JAMES L. PETERS

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The largest single accession for the year was 829 skins representing the private collection of Henry M. Spelman, Esq. of Cambridge. Mr. Spelman very generously presented his fine collection of local birds in November 1941.

Other accessions number an even 150 as follows. By purchase from Loukashkin 18 skins of birds from Manchuria; exchanges with University of Michigan, Cornell University and Academy of Natural Sciences of Philadelphia—total 53 skins. Mr. James Moffitt of San Francisco presented 71 skins of Californian birds; single specimens or small lots were presented by Bradley Palmer, Ludlow Griscom, H. H. Bailey, W. H. Drury, George Nelson, and the Museu Paulista.

Changes in the bird room staff have been great. Mr. Greenway has been on leave since the first of June as a Lieutenant in the Navy; Miss Porter resigned in January upon her marriage, after twelve years of valuable and efficient service. Miss Powning also left during the winter to devote herself to Civilian Defense Work. Miss Ruth Inman was engaged as secretary and general assistant and took over her duties the middle of February. Mr. Greenway's personal secretary was of much service to the department during her brief period of service during the autumn. Due likewise to Mr. Greenway's interest,

Mrs. Barbara Baker of Dover assisted in the department during April and May.

The most important improvement has been the construction in the "Northwest Room" of an 8-section case of a new type. This has permitted the consolidation and expansion of all the shore birds. The total number of specimens in this group, including the general collection and the Batchelder, Bent, Kennard, and Thayer Collections, is over 11000.

The number of birds entered on the card catalogue of the collection was 5029,—to date this catalogue contains 135368 entries.

The number of loans was 35, an unusually large number. The number of specimens loaned totalled 544, also a large number.

When called into active service, Mr. Greenway had completed the various projects in which he was engaged and was able to leave with a clean desk. My own work continues the same as in previous years, general curatorial work with as much time as can be spared devoted to the Check List of Birds of the World,—the MS for the fifth volume is now practically complete.

We cannot look for any important new accessions until after the war, but it is to be hoped that the time heretofore spent in identifying, cataloguing, reporting on and distributing incoming collections can be advantageously employed in rearrangements and expansions further to increase the workability of the collection.

## REPORT ON BIRDS' EGGS AND NESTS

BY RICHARD C. HARLOW

I have to report that the collection of Birds' Eggs and Nests has been inspected from time to time and found to be in good condition and free from infestation by insects or mould.

There have been no specially important accessions during the year.

As usual a considerable amount of use of the collection has been made by Mr. A. C. Bent in connection with the writing of his great work on the life histories of North American birds being prepared for publication by the United States National Museum in Washington.

## REPORT ON THE MOLLUSKS

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BY W. J. CLENCH

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*Expeditions:* Mr. and Mrs. R. W. Foster during January and February, 1942, collected at several localities from the northern Gulf coast of Florida to as far west as Aransas Pass, Texas. Much needed material was obtained from this rather poorly explored area. Conditions brought about by the war made it impossible to continue their original plan to survey the Texas coast as far west as Mexico.

*Collections:* Three small collections and one large one have been received during the past year. To Dr. Paulo E. de Oliveira, of the Divisão de Geologia e Mineralogia, Rio de Janeiro, Brasil, we are indebted for more than four hundred lots of marine and land shells from Brasil. This collection is exceedingly important, not only to our own Institution for much needed material but also for the important data obtained regarding the distribution of many species which heretofore were not known to occur south of the West Indies.

To Dr. H. G. Kugler of Point-a-Pierre, Trinidad, we are grateful for three hundred and fifty lots of marine shells, mainly from Trinidad and the coast of Venezuela. In common with the Brazilian material, this collection adds not only to our own series but contains many new records for this part of the Western Atlantic. A named series of both these collections is to be returned and additional material will be sent to us for study from time to time.

The New England Museum of Natural History has very generously donated to us the collections made by Owen Bryant in Labrador in 1908. These shells are the first of any consequence that we have obtained from this area.

By purchase, the collection of mollusks in the Peabody Museum at Salem, Massachusetts, has been obtained. Though much of this material has little or no value, a few types of C. B. Adams, W. H. Pease, F. Poey, and A. Gould were uncovered. The shells in the main collection had been cemented originally on wooden plaques. Through the years most of these specimens had become loosened and scattered in the drawers so that their value has been completely lost. The few still affixed can be used for study, and these will be added to our series.

*General:* Through the generosity of a friend, the department has been able to carry out a long cherished plan of publishing a series of generic studies on our Western Atlantic mollusks. It is being published under the title of *Johnsonia*, and the numbers are sold at the cost of publication. Its sale has indicated far more interest in mollusks than we had any idea existed in North America, and its reception has been exceedingly stimulating.

Two members of our staff, John Huntington and R. T. Abbott, have left to enter the armed forces.

As in the past, I am deeply thankful to the several members of the department for their interest, loyalty, and devotion to their work. Dr. Merrill E. Champion, as a volunteer worker, has contributed much of his time to many tasks in the department. He is revising our North American land shells, particularly the several genera that occur along the Pacific slope. These groups have long been neglected and are in sad need of modernizing. This is now being done, following the new monographs in this field by Pilsbry.

To Richard W. Foster I am indebted for full time assistance as a volunteer worker. All of the marine bivalves and Cephalopods are now under his care. Much revisional work has been finished in both these groups, and these collections are now in better shape than at any time in the past. The revisional work on the bivalves was started originally by my former student assistant, R. A. McLean, now at Philadelphia. Both Foster and McLean are now mutually aiding one another exchanging specimens and photographs of type specimens.

Dr. Bequaert has nearly finished revising the land and fresh water genera in our collections from Central and South America. In addition, he has made many contacts with collectors who have sent in large and exceedingly important material from many new areas in these regions. He has, as well, continued determining much material of molluscan hosts carrying parasites that often infect man. Much of this work was being done for the Dutch parasitologists in the East Indies before the Japanese invasion.

Dr. Henry Russell has left the department, for the time being at least, to become associated with the New England Museum as Assistant to the President.

Our two young volunteer assistants, Allen Crocker and Richard Johnson, have, as in the past years, rendered valuable aid.

My own work has been in part executive, though considerable effort has been directed toward a revision of our Hawaiian collections. These collections are second only to those contained in the Bishop Museum in Honolulu. Editorial work on *Johnsonia* and continued studies on the Bahama reports completed my efforts during the past year.

A résumé of the collection follows:

Number of accessions for the year . . . . .	7,517
Catalogued entries in the collection . . . . .	140,071
Number of species in the collection . . . . .	27,626

## REPORT OF THE RESEARCH CURATOR OF ZOOLOGY

BY LUDLOW GRISCOM

The Museum's financial year was again uneventful. The progress of the war saw some reductions in personnel and curtailed activities and expenditures to such an extent that we were able to reduce the deficit actually incurred by many thousand dollars under the amount originally budgeted and allowed by the Corporation. In difficult times like these, what is ordinarily the unsatisfactory proceeding of preparing a budget long before the fiscal year begins, turns out to have a bright side! All that is required is officers who will not take advantage of a technical approval to spend money unnecessarily. Certain routine financial duties were greatly increased by the new accounting system. In spite of temporary difficulties, which were inevitable, I am a strong believer in this new system, and appreciate the patience and vision of Mr. Smith, our new Comptroller, and his harried staff.

Funds for publication were not decreased the past year, as Mr. Agassiz was able to continue his special gift. Vol. 88 was concluded, vol. 89 was issued complete, and the whole of volume 90 and 91 were in either galley or page proof by Aug. 1, 1942. In fact the Cosmos Press gave us a higher percentage of their time than for many years past. Thanks to long decades of association they do many things for us that money cannot buy in a modern printing contract.



Nearly one third of my time has been given to war work of various kinds, with the understanding generosity of the Director. I have continued as Chairman of the Information Committee of the Harvard Group, American Defense. In March I was asked to organize and direct a group of volunteers to study certain intelligence problems in the whole of New England, and continued cooperation along these lines with still another department of the Government. I was also appointed a member of the University Latin-American Committee.

As Vice-President of the New England Museum of Natural History, considerable time was devoted to helping the President, Dr. Barbour, keep this fine old institution going, in spite of loss of income and the general absorption by the war of every male member of the staff. Last October I was elected to the Board of Directors of the National Audubon Society, and in April found myself chairman of the Executive Committee.

Active field work in Massachusetts was continued in connection with the Bird Bulletin of the New England Museum, which I continue to supervise, and the regional season reports for the whole United States, which I direct for the Audubon Magazine. By request I gave a series of talks on bird migration over WRUL for the Science Clubs of America.

## REPORT ON REPTILES AND AMPHIBIANS

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BY ARTHUR LOVERIDGE

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Late in April my colleague Benjamin Shreve left to join an anti-aircraft battalion. His departure was a great loss, not merely to the department which he has served with such conspicuous fidelity for the past eleven years, but to myself and his many friends here at the Museum of Comparative Zoölogy who look forward to the day when he will be back among us again. During the process of compiling a list of the types added to the collection in recent years I noted that no less than 55 had been described by Mr. Shreve, either alone or in collaboration with Dr. Thomas Barbour.

During the earlier part of the year now under review, the amphibia resulting from my 1938-1939 visit to East Africa were catalogued — bringing the total accessions for the year to 2600 entries of which approximately 1700 were of African origin and 900 from other collections. The falling off in the number of specimens received, however, enables me to report that everything in the collection, with the exception of one small trayful of odds and ends, has been identified, labeled, tagged, card-indexed and incorporated in the systematic series.

Undoubtedly one of the most interesting of these accessions was a mounted *Crocodylus intermedius*, without locality data, discovered in the attic of a neighbouring museum by Dr. Barbour. For upwards of twenty years he has been endeavouring to obtain an example of this Orinoco species to complete our collection of the 24 recognizable species of living crocodylians, and there is something ironical in the fact that one should have been lurking so near to Cambridge all this time. Of no particular interest apart from taxonomic studies, this specimen was transferred to us by the Boston Society of Natural History to whom we are grateful for their generous action.

The only collections sufficiently large to receive special mention are those of Dr. A. F. Carr, Jr. and Hno. Nicéforo Maria, from Mexico and Colombia respectively, the former providing us with over 300 specimens, the latter with just under 100. The department is indebted to the following donors of material received during the past year. R. Allen, H. Babcock, T. Barbour, H. A. Beatty, J. C. Bequaert, A. F. Carr, Jr., A. Charland, W. L. Engels, E. N. Fischer, N. Harris, D. M. Hodgson, D. Linder, G. Nelson, C. F. Parsons, G. Stillman and J. Zetek.

Only fifty-seven specimens were received in exchanges with other institutions and the great majority of these came from our good friends at the Museum of Zoölogy, University of Michigan. Twenty-five loans were made to fifteen persons representing twelve universities, museums, or zoological gardens.

There was a further reduction in the number of visitors to Cambridge making use of the collections; among them were Dr. A. F. Carr, Jr., Messrs. C. J. Goin, Arnold Grobman, and M. B. Mittleman, while Mr. W. Douglas Countryman came on from Michigan to engage in postgraduate studies of the Chelonia.

A month of my time was devoted to the preparation of a card index

to the type material added to the collection since the publication in 1929 of the list of 1473 species then represented. Types or paratypes of nearly 800 additional species have been received or described during the twelve years that have elapsed since the publication of the first list. A number of reports and papers have been written on collections received, and some time spent in proof-reading such as are listed in the back of this annual report.

The routine work of replenishing the entire lizard collection with alcohol was carried out by our student aid, Mr. John S. Graettinger, whose excellent work during the years that he has been assisting in the department should not pass unnoticed.

The gain in species is estimated to be about the same as that recorded last year, but the collection has grown to such proportions — approaching 6000 species and subspecies — that a biennial, rather than an annual, census is proposed.

## INVERTEBRATE PALEONTOLOGY

BY PERCY E. RAYMOND

I devoted much time in the summer and autumn of last year to a rather unproductive study of some obscure and fragmentary arthropods from the Permian of Oklahoma. During the winter I prepared a paper offering new ideas as to the nature of the coloring matter in certain black shales and red sediments in general. This article is in press and will appear shortly.

Two graduate students, working under my supervision, prepared papers on Cambrian and Ordovician trilobites based on material now in our collections. Two of these papers, one by Dr. Robert R. Wheeler, the other by Mr. Samuel Holliday, have already been published, and three more will appear in due course of time. These gentlemen have most unselfishly presented their types and other collections to the Museum. A third paper, by Mr. John Young of Michigan State College, embodied descriptions of new species which he collected and donated. Over a period of years, the important fossils given to us by students probably repay the Museum for the time which the supervision of their work takes from the more formal duties of a Curator.

An unusual interest in types in the collection has been evinced during the year. Molds of types of blastoids were furnished to Professor W. A. Kelly of Michigan State College. Professor Raymond Moore, of the University of Kansas, spent several days here making molds of types of crinoids, Dr. C. E. Resser, of the United States National Museum, made molds of most of our types of Cambrian and Lower Ordovician trilobites, and molds of certain cystid types were furnished to Dr. Ray S. Bassler of the same Museum. Dr. Bassler had been most kind in furnishing us molds of Carboniferous Xiphosura in the United States National Museum. Figures of certain specimens in our collections appeared in Dr. David DeLo's "Revision of the North American Phacopidae", Dr. Brooks Knight's "Types of the Genera of Gastropoda", and Dr. P. E. Cloud's "Genera of Loop-bearing Brachiopoda", all published by the Geological Society of America.

The following accessions were received during the year: By donation; fresh-water pelecypods from the Carboniferous at Ottawa, Illinois, from Mr. Floyd Werner; Shakopee gastropods and cephalopods from Iowa, from Mr. J. P. Shafer; a Devonian trilobite from Pennsylvania from Mr. John Eric; two very rare Ordovician trilobites from Oklahoma, from Mr. Erik N. Kjellesvig-Waering; Mesozoic and Pleistocene fossils from N. E. Greenland, from Commander C. C. von Paulsen; ten drawers of Upper Cambrian, Ordovician, and Carboniferous fossils from Nevada, from Mr. Samuel Holliday; and one drawer of Carboniferous invertebrates from West Virginia, from Mr. Harry Damron. As in past year, Mr. Henry Seton gave Ordovician fossils from Valcour Island, New York.

By purchase; sixteen Lower Cambrian trilobites from Cranbrook, B.C., were acquired from Ward's; an excellent Lower Carboniferous echinoid from Oklahoma, through Prof. Mervyn Bailey; and a very large collection of fossils from the Peabody Museum of Salem.

## REPORT ON VERTEBRATE PALEONTOLOGY

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BY A. S. ROMER

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Valuable additions to the collections were made during last winter as the result of field trips to Florida and Texas—these being, presumably, our last field activities for the duration of the present emergency. In Florida another season's work by the Director and Dr. White at the Thomas Farm in Gilchrist County again resulted in the discovery of numerous interesting specimens, notable being the skull of a curious long-snouted actiodactyl and good cranial material of rhinoceroses, hitherto poorly represented. The rhinoceros material is being studied by Dr. H. E. Wood, 2nd. Dr. White has completed a general study of the fauna, which includes some 24 species representing 20 genera. Dogs, horses, and ruminants comprise nearly the whole fauna; entelodonts and oreodonts, common at the time in the west, are absent. The obviously isolated nature of the fauna and the geological evidence incline Dr. White strongly to the belief that the area was an island in Miocene times.

Due to assistance from the Marsh Fund of the National Academy of Science and the Sigma Xi research fund, Assistant Preparator Witter was enabled to spend most of the winter collecting in the Texas redbeds, particularly in further excavation of the Geraldine quarry. The results of the work were satisfactory despite the fact that two ten-inch downpours of rain in that usually bone-dry country turned the quarry into an unworkable morass for discouragingly long periods. During mid-winter a cooperative arrangement was made with Southern Methodist University of Dallas through which a skeleton of *Edaphosaurus* obtained from the quarry was prepared and mounted for that institution by Mr. Witter—the first mounted specimen of a redbeds reptile to be exhibited in its native state. In March Mr. Witter was joined by the curator, and a number of hitherto unvisited redbeds areas in the Archer County region were explored. For part of this time Dr. H. J. Sawin of the Texas Bureau of Economic Geology was a member of the party.

Mr. Nelson has made still further additions to his series of fine panel mounts, including skeletons of the redbeds amphibian *Eryops*, the

primitive ruminant *Hypertragulus* and the cave bear *Ursus spelaeus*. Mr. Olsen has been engaged during the year in preparation of Florida mammal specimens, a number of which have been placed on exhibition. Considerable alterations have been made in the exhibits of fossil mammals.

Materials received in exchange include the *Hypertragulus* skeleton, from the Carnegie Museum of Pittsburgh, a skull of *Eurhinodelphis* from the United States National Museum, skulls of the toxodonts *Hegetotherium* and *Adinotherium* from the Field Museum of Natural History, and *Lystrosaurus* specimens from the University of Michigan. To round out our redbeds collections we have received in exchange from the Peabody Museum of Yale University nearly all of the Permo-Carboniferous materials from New Mexico obtained by David Baldwin for Marsh in the 1870's, a few type and exhibition specimens being alone retained in New Haven.

In the laboratory, Dr. White, as noted above, has completed his study of the Florida materials, and Mr. Seton has continued his studies of early Tertiary mammals, including an interesting skeleton of the small insectivore *Ictops*. Mr. Frank C. Whitmore, Jr., has successfully completed his thesis for the doctorate on the structure of the braincase in certain fossil artiodactyls. Dr. Edinger is engaged in the study of fossil horse braincasts and has volunteered her assistance to Miss Wright and the Curator in the preparation of the bibliography of European fossil vertebrates. The Curator has completed several studies on Paleozoic vertebrates (including a morphological description of the *Edops* skull in collaboration with Mr. Witter) and on phylogenetic applications of embryology.

For the second year in succession the meetings of the Society of Vertebrate Paleontology were held in this region, this time in connection with the Geological Society of America; the final day's meetings were held at the Museum.

Dr. White has entered the army and Mr. Witter has left the staff to enter airplane construction work. It is to be expected that wartime conditions as well as reduction in the Staff will result in a marked diminution of productive work for the period of the emergency.

## REPORT ON FOSSIL INSECTS

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BY F. M. CARPENTER

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The only notable accession of the year is a series of thirty-five holotypes of Scudder's species from Green River, Wyoming (Eocene). These were part of a collection made by Professor A. S. Packard of Brown University in 1879, described by Scudder in 1890, and donated to the Museum of Comparative Zoölogy in 1905. Seventy-five holotypes were originally included in the collection, but only twelve were to be found in the Museum when I catalogued the fossil insects in 1931. A search which I made the following year through the general collection of fossils at Brown University failed to turn up any additional specimens, but another attempt in May of this year resulted in the discovery of thirty-five of the types. None were labelled, but they were recognizable by the numbers which Scudder had carefully written on the shale. These specimens were promptly turned over to the Museum by Professor Quinn, chairman of the Department of Geology. They are not only of great taxonomic value but, being among the first fossil insects found in this continent, they are of much historical interest. Twenty-seven types of the original collection are still missing, and the probability is that they have fallen into the hands of students who have no knowledge of their significance.

The tenth of my papers on the Lower Permian insects of Kansas, dealing with certain families of Protorthoptera, is nearly completed. The previous part, although in press a year ago, has not yet been published. The first paper on the Permian insects collected in Oklahoma in 1940 is also nearly finished; this covers the extinct orders Palaeodictyoptera, Protodonata, and Megasecoptera. A start has been made on the second of my revisional studies on the Carboniferous insects of Commeny, France.

The Baltic amber collection continues to receive the attention of specialists. Dr. R. L. Usinger has described some remarkable scale insects (Coccoidea), including a representative of a genus unknown since its description nearly a century ago.

Several months of the year were spent on routine curatorial duties. The Scudder collection was re-examined with the hope of finding the

missing Packard types. Type specimens in the entire collection of fossil insects were segregated in the front halves of the drawers, to facilitate moving. Several hundred Permian specimens from Oklahoma were cut and cleaned in preparation for study. I was assisted during the year by Mr. Stanley Cornish, a senior in the College, who completed the preliminary sorting of the Manitoban amber. Study and description of this unique collection has now begun. Mr. Cornish also assisted in checking the catalogue of types of fossil insects. At the present time the collection contains types (holotypes and cotypes) of 1376 species.

## REPORT ON THE FISHES

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BY W. C. SCHROEDER

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Recataloguing of the collection was continued and up to the present time we have disposed of 141 families, 954 genera, and 3,037 species. The types, heretofore scattered throughout the collection, were segregated in one place and thus can be located more easily and removed quickly to safer storage if the emergency should arise. The total number of type specimens is 1,384.

New cabinets have been constructed in the unoccupied spaces available and these together with room made by discarding worthless material have made available additional storage space.

Entries in the catalogue during the year comprise 141 lots received long ago, including 2 types; 62 miscellaneous lots received during the year; 7 new types; and various small collections contributed by Dr. William Beebe, Bermuda; Dr. Cecil Miles, Columbia; Dr. Louis Mowbray, Bermuda; Messrs. R. W. Foster and J. H. Huntington, Bahamas; Mr. Frank E. Firth, New England; Mr. Stewart Springer, Florida; Dr. Luis Howell Rivero, two species of rare sharks from Cuba; Mr. J. L. Baughman, a desirable lot of elasmobranchs from Texas; Dr. Mary Sears and Mr. William Vogt, Peru; Mr. J. Miller, offshore, east coast of Florida; Mr. Tucker Abbott, Bahamas, Samoa and Fiji. Also catalogued were two relatively large collections of Siamese and African fishes, identified by Dr. H. M. Smith and Dr. Leonard P. Schultz last year.



Mr. Richard Foster kindly presented mounted specimens of tuna, marlin swordfish, barracuda and amberjack from the Florida-Bahamas region. He also presented the large glass case in which to exhibit them. They make a very handsome display.

Loans of elasmobranch material were received from Dr. Luis Howell Rivero, University of Havana; Dr. A. E. Parr, Yale University; Mr. J. T. Nichols, American Museum of Natural History; Dr. George S. Myers, Stanford University and Dr. Leonard P. Schultz, United States National Museum.

During the winter I examined the alcoholic fish collection of the New England Museum of Natural History, comprising about 1500 lots. A substantial amount of duplicate material was discarded and the remainder forms a representative collection of New England fresh water and marine fishes. From this collection about 30 species, including 4 of Storer's types, were added to our museum's collection.

Thanks are due to Mr. E. J. Harris, and Mr. C. Gatti for their assistance and especially to Mrs. M. Dick who off and on throughout the year rendered invaluable help getting the collection in order.

## REPORT ON SPONGES AND COELENTERATES

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BY ELISABETH DEICHMANN

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The activities during the past year have followed closely the pattern of the foregoing year. Mr. R. W. Levin continued for the third consecutive year as student helper until his graduation in June. It has been most fortunate to have the same person as assistant for so long a period since he has gradually become so familiar with the sponges that he was able to take over a lot of the more specialized work such as looking up references in the library, etc., and he leaves the sponge catalogue almost completed, built up from absolutely nothing.

In the basement the revision of the coelenterate material has been completed and all improperly labeled material has now been discarded. The paper labels of all the older material, — some of them more than eighty years old, — have lasted well, but in almost all cases where ink had been used, it had faded completely or almost completely away,

while those labels which bear writing in ordinary, lead pencil are as clear as the day they were written. A large amount of good glassware was thus released and some of it has already been claimed by Dr. Chace for use in his re-arrangement of types and valuable specimens among the segmented worms and the crustaceans.

Among the hydrozoans, most of the types and valuable specimens have been segregated and laid aside. During this process of selection it was discovered that a large amount of the catalogued material of hydroids was only partly identified, that is, it had been referred to genus or family. All this material from the West Indies was picked out and sent to Dr. C. McLean Fraser in Vancouver, B. C. It developed that this lot, like the lot sent last year, was most useful. The two lots contained two new genera and 13 new species, besides some species to be reported from American waters for the first time. It is expected that Dr. Fraser's report will soon appear in print.

Among the stony corals a complete set of West Indian deep sea species, — mostly Pourtales' invaluable types, — have been packed in a steel box so they can easily be removed in case of an emergency.

The collections of parasitic worms have been overhauled and partly transferred into larger containers which will help to cut down the danger of dessication and will also simplify the question of periodical inspection.

During the spring some weeks were spent in the New England Museum of Natural History, going over some of the older collections of sundry marine and freshwater invertebrates and discarding all material that was in poor condition or improperly labelled. Various sponges and coelenterates were transferred to the M.C.Z.

In July and August, 1942, I had the good fortune to work as acting instructor at Hopkins Marine Station, at Pacific Grove, California. The normal collecting activities were of course greatly curtailed by the war, but this fact gave a welcome opportunity to follow other lines of activity. On my trip out I stopped in Los Angeles and later I was able to return for three days and work on the almost inexhaustible supply of holothurians in the Hancock Foundation. On my return trip to the east I stopped in Washington, D. C. and examined the collections of antipatharians in the U. S. National Museum before returning to Cambridge.

Besides preparing various papers on coelenterates and holothurians

I continued through the winter with the proofreading of the last volume of the translation of Herluf Winge's Mammalian Genera, in collaboration with Dr. Allen. The work was finished a few weeks before Dr. Allen's death, but how much of the proof, if any, has reached Copenhagen remains to be seen. Fortunately there were very few corrections to make, so it is to be hoped that the work will not be marred too much by the irregularity of the arrival of the proofs. In all probability the second and third (and last) volumes are now published in Denmark.

In spite of the war a number of gifts have been received, in several cases representing species which hitherto had been lacking in the museum.

Dr. J. Wyatt Durham, University of California, returned the collection of Panamic stony corals which he had borrowed, after completion of his monograph on the corals of that region, and added as a gift various stony corals, one of these a paratype of a new species.

From Trinidad and Tobago, B.W.I., an interesting collection of stony corals was received, collected by Dr. H. J. Kugler of the Trinidad Leaseholds.

The New England Museum transferred various sponges, alcyonarians and stony corals, mostly from the West Indian region, and the U. S. National Museum presented a few alcyonarians from the Panamic region.

## REPORT ON CRUSTACEA AND ANNELIDA

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BY FENNER A. CHACE, JR.

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*Crustacea:* A considerable portion of my time during the past year has been devoted to segregating type material. This has been carried out, not only as a precautionary war measure, but as a permanent policy. It is felt that the added inconvenience of referring to a catalogue whenever one wishes to examine a type specimen is more than counterbalanced by the accessibility of such valuable material, allowing for an annual inspection to prevent the total evaporation of alcohol, which has nearly ruined altogether too many of our older

types, and permitting comparatively rapid evacuation in an emergency, whether in wartime or otherwise. In pursuance of this policy, no attempt has been made to keep the species in systematic order. The ordinary half-trays have been partitioned into sections with corrugated cardboard, the size of the sections being dependent on the size of the bottles in each tray. The horizontal rows of sections have then been numbered and the vertical rows lettered, and each tray has a separate reference number. Each type lot can then be quickly located by the catalogue reference, such as "Tray #25: E-3". This reference for each lot has been entered in the accession catalogue and in the systematic card catalogue in those cases where the group has been revised, as well as in a separate card catalogue of types only, which is to be kept with the type material at all times if the latter is moved. In an emergency, the trays can be prepared for shipping in a very short time by packing crumpled paper about the tops of the jars, inverting a similar half-tray over the top and fastening the two together with a few outside cleats. Packed in this way, I believe that the collections will adequately withstand the normal perils of transportation.

All of the readily recognizable types have now been segregated in this manner. They represent 879 species, contained in 1,246 lots. Without doubt, there are a number of "hidden" types in the unrevised portions of the collection, which will come to light only when all of the Crustacea have been relabeled and recatalogued.

A competent student assistant, Mr. Werner Maas, has given valuable assistance, not only in segregating and cataloguing type material, but also in replenishing alcohol and continuing the carding of the "Zoölogical Record", which is becoming increasingly helpful with each year added to the catalogue.

Several noteworthy collections have been received during the past year, both as gifts and as exchanges. Through Mr. J. R. Miller has been received a remarkable collection of 71 lots of sublittoral forms dredged off Destin, Florida, by Mr. T. L. McGinty, and through Dr. Luis Howell Rivero a collection of 39 lots of equally interesting material taken in Golfo de Campeche, Yucatan, by Sr. Pedro Fuentes. Among the exchanges, is one of 25 lots of crayfish received in exchange for a publication from Dr. Rendell Rhoades, another of 21 lots of Philippine crabs from the American Museum of Natural History and a

large one of 122 lots of Brachyura from the U. S. National Museum. This latter accession contained representatives of one family, 13 genera and 77 species and subspecies not previously represented in the M. C. Z. collections. Donors of other collections, to whom thanks are hereby extended, are the following: D. F. Bumpus, W. J. Clench, O. Degener, R. W. Foster, Dr. H. H. Hobbs, Jr., J. H. Kugler, P. de Mesa, J. R. Miller, L. I. Price, Dr. L. Howell Rivero, Dr. J. H. Welsh and R. V. Witter.

The catalogued accessions for the year from these sources number 351 lots of 996 specimens. In addition, the Galatheidea of the Harvard-Havana "Atlantis" Expeditions retained for the M. C. Z. have now been catalogued and total 291 lots of 1,612 specimens. It may be noted that the normal accessions—not including the "Atlantis" Galatheidea—have continued the increase in total number of lots shown during the past several years. World conditions are bound to halt the rate of this steady growth in time, but it is gratifying while it lasts.

*Annelida*: All of the annelid types have been segregated in the same manner as that outlined above for the Crustacea. The location reference numbers have been entered in the card catalogue prepared several years ago by Miss Hartman, as well as in a separate card catalogue of type material, only, which is to be kept with the types at all times. Our collections contain type material of 206 species of segmented worms, contained in 318 lots.

Specimens have been received during the past year from the following donors, to whom our thanks are due: Dr. T. Barbour, R. W. Foster and J. R. Miller.

## REPORT ON THE LIBRARY

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BY W. E. SCHEVILL

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Although the spread of the war has materially curtailed the receipt of current serials, the net increase in volumes and pamphlets for the year ending June 30, 1942 was 1743 and 1583 respectively, giving us a recorded total of 84,415 volumes and 106,073 pamphlets. While some 3100 books were used in the library, 5072 were borrowed for outside

use, including 322 interlibrary loans. In spite of poor prospects at the beginning of the year, an unexpected financial windfall enabled us to bind 1437 items at a cost of \$1962.90. We are still far from caught up with our binding arrears, however.

On October 1 a crew of trained typists under the direction of Miss Margaret Currier of the Harvard College Library began copying our old manuscript catalogue on standard 3" x 5" cards in accord with the standard Harvard system. This great convenience will not be complete for some time, the letter F having been reached at the end of the library year. The funds for this work were most thoughtfully provided anonymously by a consistently generous friend of the University.

The past year has seen several changes in our staff. Mrs. Frazier, after four and a half years of efficient and cheerful work, left us and New England October 31. The Museum has missed her, and welcomed her brief return during June. On October 1 Miss Mia Reinap began her duties. At the end of May Miss Egan resigned on account of her health; she had worked hard in the Library since late January, 1940. During June Mrs. Frazier returned to fill in until a new assistant could be found; this was Miss Miriam Krensky, who began work with the new year.

In February and March we received, through the Harvard College Library, runs and odd volumes and parts of some seventy-five serials from the Essex Institute of Salem. During the winter, by arrangement with the Harvard College Library, we became the University depository for state and provincial geological surveys, and many sets were transferred from other libraries to fill out our files. New stacks were built to accommodate this increase, from which, however, many duplicates resulted; these have in part been distributed where needed in other colleges.

In April Dr. Glover M. Allen's bequest of 225 volumes and an as yet uncounted number of pamphlets filled many gaps in our collection of mammal and bird literature, especially material touching bats and whales, which were among his major interests. This final gift capped a long series of donations totalling many times the amount of the bequest. The Museum is much indebted to Mrs. Allen and Mrs. Gilman for their generous help in carrying out Doctor Allen's wishes. He was always keenly aware of the needs of the Library and did much during his lifetime to see that it grew in useful directions.

## REPORT ON THE GEOLOGICAL MUSEUM

BY EDWARD C. CABOT

The war has brought on little change in the Geological Museum. Luckily, the collection is made up of large specimens that would survive a bombing attack, or of material that could be replaced at no great cost. So it was decided to save on expense of crating some of the more valuable material. The floors have been well protected with a shovel and a bag of sand in case of incendiaries. Warden signs show the nearest place to go in case of a raid and Harvard personnel patrol the rooms during tests.

In the beginning of the year the Geological Society of America had its annual meeting in Boston, and special exhibits were put on to illustrate the current Harvard projects.

1. A wall map of 3 recessional morains was displayed giving a progress report of the Glacial Geology of Cape Cod under direction of Prof. Kirkley F. Mather. This work has been published in the August number of the Geologic Society of America.
2. A Geologic and structural report of Prof. Marland Billings on Mount Washington. This is the 13th report under the Harvard project of mapping the geologic structures in New Hampshire.
3. Prof. Bryan's recent publication was shown on the glacial chronology of Early Man in the Sandia Cave, New Mexico. 24 published Geologic reports were exhibited as the result of the Harvard Geological Campaign in the South West.
4. The Geophysical Laboratory of Harvard has lent us some striking pictures of the high pressure apparatus now being used in these experiments. A list of some 69 publications were on view and a popular survey of this work called "Geophysics at Harvard" was exhibited.

The major Harvard geological projects will be exhibited for the duration. The curator begs not to have to put on other exhibits as much of his time is now given up to organizing First Aid parties under the Cambridge Committee of Public Safety.

## PUBLICATIONS FOR THE YEAR 1941-1942

(1 August, 1941-31 July, 1942)

Museum of Comparative Zoölogy

*Publications:* The following have been printed during the year.

## BULLETIN:—

## Vol. LXXXVIII

- No. 4. The recent mollusks of the family Neritidae of the western Atlantic. By Henry D. Russell. 59 pp., 7 pls. August 1941.
- No. 5. The cranial anatomy of *Eryops megacephalus*. By H. J. Sawin. 56 pp., 12 pl. September, 1941.
- No. 6. Revision of the African terrapin of the family Pelomedusidae. By Arthur Loveridge. 57 pp. October, 1941.

## Vol. LXXXIX

- No. 1. A fossil river dolphin from Florida. By Glover M. Allen. 8 pp., 3 pl. October, 1941.
- No. 2. Studies in Cuban Blattidae (Orthoptera). By Ashley Buell Gurney. 60 pp., 4 pl. January, 1942.
- No. 3. Notes on various peregrine earthworms. By G. E. Gates. 83 pp. February, 1942.
- No. 4. Scientific results of a fourth expedition to forested areas in east and central Africa. Part I, Mammals, by Glover M. Allen and Arthur Loveridge. 69 pp., 5 pl. February, 1942.
- No. 5. Scientific results of a fourth expedition to forested areas in east and central Africa. Part II, Birds, by James Lee Peters and Arthur Loveridge. 60 pp., 3 pl. February, 1942.
- No. 6. Growth and development of the proboscis monkey. By Adolph H. Schultz. 37 pp., 4 pl. March, 1942.
- No. 7. Notes on the spiders of the Virgin Islands. By Elizabeth B. Bryant. 46 pp., 3 pl. March, 1942.
- No. 8. The echinoderm fauna of Bermuda. By Hubert Lyman Clark. 27 pp., 1 pl. April, 1942.
- No. 9. Notes on the United States species of *Tachytes*. By Nathan Banks. 43 pp., 2 pl. April, 1942.
- No. 10. Revision of the Afro-oriental geckos of the genus *Phelsuma*. By Arthur Loveridge. 45 pp. June, 1942.
- No. 11. Revision of the African lizards of the family Gerrhosauridae. By Arthur Loveridge. 61 pp. June, 1942.



*Publications by the Museum Staff*

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- Review: "The Audubon guide to attracting birds." *Auk*, **58**, no. 4, pp. 592-593. October, 1941.
- Review: Jorgensen and Blackburne's "Glossarium Europae Avium." *Auk*, **58**, no. 4, p. 593. October, 1941.
- Review: Miller on speciation in the genus *Junco*. *Auk.*, **58**, no. 4, pp. 593-594. October, 1941.
- Review: Hendricks's "Field list of the birds of Berkshire County." *Auk*, **58**, no. 4, pp. 594-595. October, 1941.
- Review: Sawyer on making bird boxes. *Auk*, **58**, no. 4, p. 595. October, 1941.
- Pygmy sperm whale in the Atlantic. *Papers on Mammalogy*, published in honor of Wilfred Hudson Osgood. *Zool. Ser. Field Mus. Nat. Hist.*, **27**, Publ. 511, pp. 17-36, 4 figs. December, 1941.
- Review: Audubon's "Birds of America," 1941. *Auk*, **59**, no. 1, p. 122. January, 1942.
- Review: Ridgway and Friedmann's "Birds of North and Middle America" Part 9. *Auk*, **59**, no. 1, pp. 124-125. January, 1942.
- Review: Tyson and Bond's "Birds of Mt. Desert Island, Acadia National Park." *Auk*, **59**, no. 1, p. 125. January, 1942.
- Review: Mrs. Wheeler's "We follow the western trail." *Auk*, **59**, no. 1, p. 125. January, 1942.
- Review: Kendeigh's "Territorial and mating behavior of the house wren." *Auk*, **59**, no. 1, p. 126. January, 1942.
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- The harbor seal. *New England Naturalist*, **2**, no. 15, p. 38, 1 fig. February, 1942.
- Why a bounty on seals? *Bull. Mass. Audubon Soc.*, **26**, no. 1, pp. 11-13, 1 fig. February, 1942.
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- Review: "The handbook of British birds." Vol. 5. *Auk*, **59**, no. 2, p. 319. April, 1942.
- Review: Witherby's "Check-list of British birds." *Auk*, **59**, no. 2, p. 320. April, 1942.
- Review: Dr. Blanchard on the annual cycle of white-crowned sparrows. *Auk*, **59**, no. 2, pp. 320-321. April, 1942.
- Review: Perry on the effect of adrenalin on the reproductive cycle. *Auk*, **59**, no. 2, pp. 321-322. April, 1942.

Review: Lehmann on Attwater's Prairie Chicken. *Auk*, **59**, no. 2, pp. 325-326.

Scientific results of a fourth expedition to forested areas in East and Central Africa. I. Mammals. *Bull. Mus. Comp. Zoöl.*, **89**, no. 4, pp. 147-214, 5 pls. February, 1942.

#### BANKS, N.

Results of the Oxford University Cayman Islands Biological Expedition. 1938 (Neuroptera). *Entom. Mo. Mag.* lxxvii, pp. 176-177. August, 1941

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Germany 1918. A letter. *Harvard Alumni Bull.* p. 42. October, 1941.

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Critical of Bill Cunningham. A letter. *Boston Herald.* p. 20. November, 1941.

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- A new species of *Monobia* from Puerto Rico. Mem. Soc. Cubana Hist. Nat., **15**, no. 4, pp. 375-378. December 1941.
- Concerning gastropods adhering to foreign objects. Science, **94**, p. 514. November 1941. (With W. J. Clench).
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- Occurrence of *Porocephalus crotali* Humboldt in Florida. *Ohio Journ. Sci.*, **42**, no. 3, p. 112. May 1942.

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- Additions to the spider fauna of Puerto Rico. *Journ. Agric. Univ. Puerto Rico*, **26**, pp. 1-19, 2 pls. January 1942.
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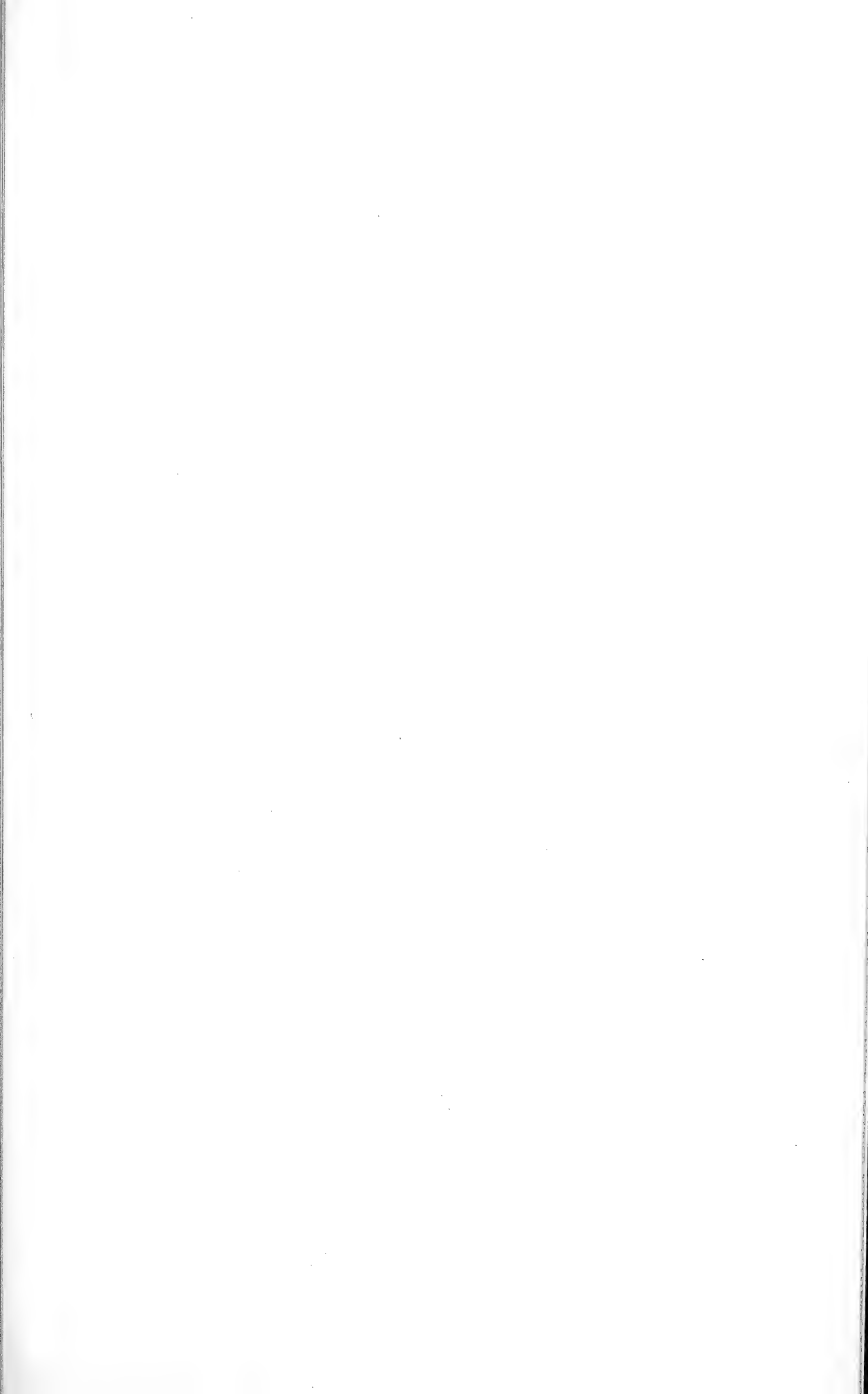
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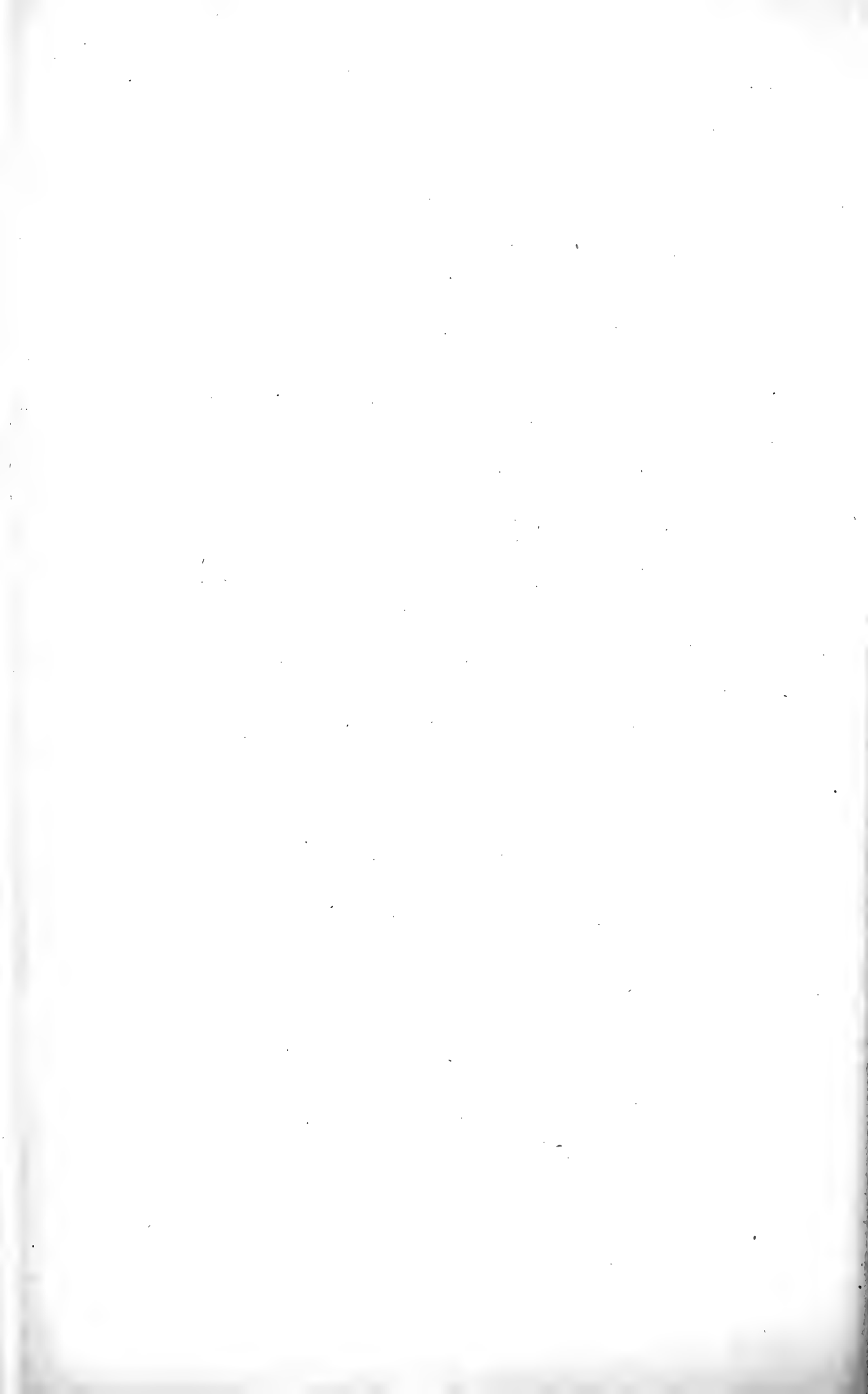
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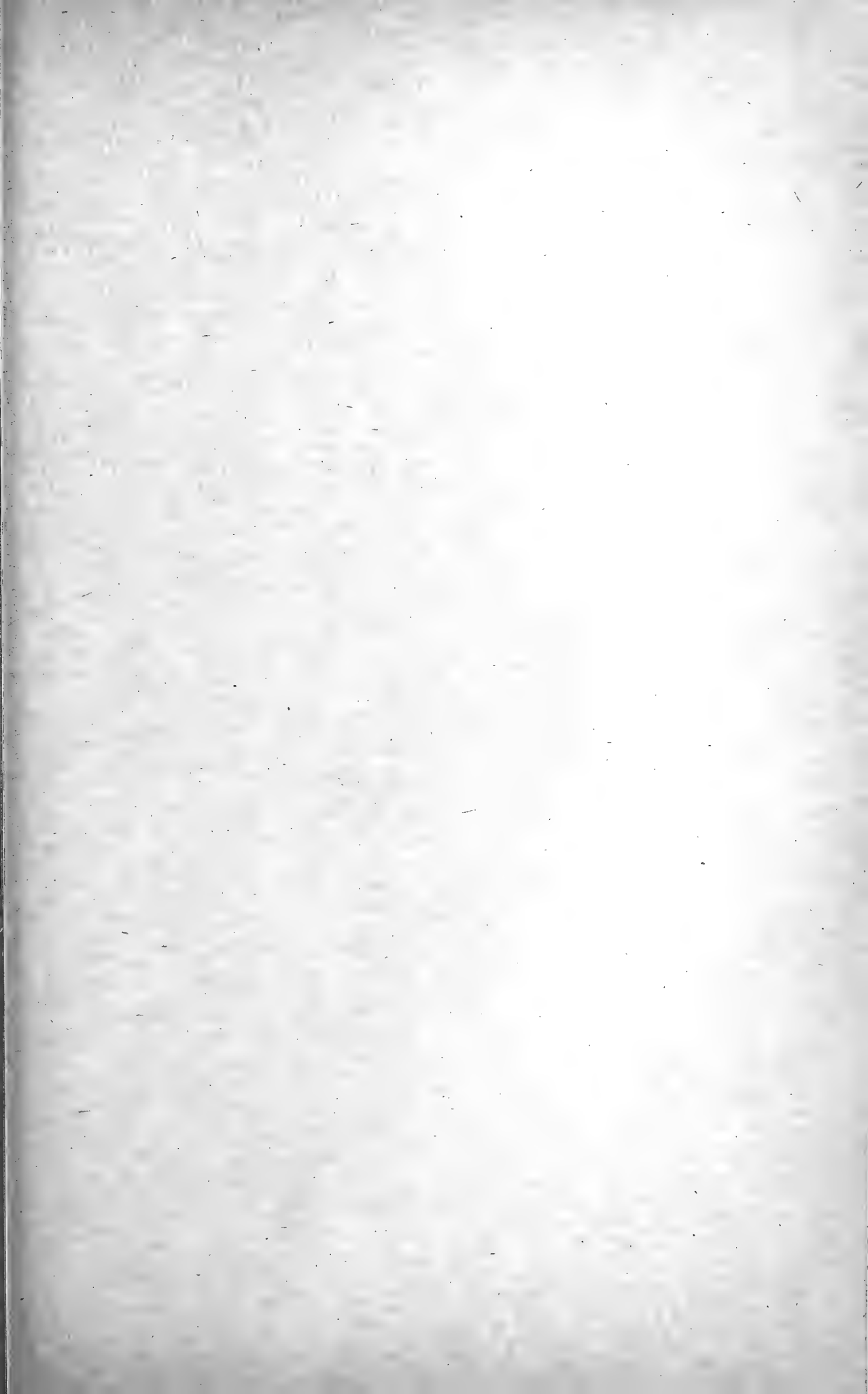
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