

ANNUAL REPORT
OF THE DIRECTOR
OF THE
MUSEUM OF COMPARATIVE
ZOOLOGY
AT HARVARD COLLEGE
TO THE
PROVOST OF HARVARD UNIVERSITY
FOR
1950—1951

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PUBLICATIONS ISSUED BY OR IN CONNECTION
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AT HARVARD COLLEGE

BULLETIN (octavo) 1863 — The current volume is Vol. 106.

BREVIORA 1952 — No. 2 is current.

MEMOIRS (quarto) 1864-1938 — Publication was terminated with Vol. 55.

JOHNSONIA (quarto) 1941 — A publication of the Department of Mollusks. Vol. 2, no. 30 is current.

OCCASIONAL PAPERS OF THE DEPARTMENT OF MOLLUSKS (octavo) 1945 — Vol. 1, no. 16 is current.

PROCEEDINGS OF THE NEW ENGLAND ZOÖLOGICAL CLUB (octavo) 1899-1948 — Published in connection with the Museum. Publication terminated with Vol. 24.

These publications issued at irregular intervals in numbers which may be purchased separately. Prices and lists may be obtained on application to the Director of the Museum of Comparative Zoölogy, Cambridge 38, Massachusetts.

Museum of Comparative Zoölogy

TO THE PROVOST OF THE UNIVERSITY:

SIR, — On February 5, 1951, in the 89th year of his age, died George Russell Agassiz — son of Alexander Agassiz, grandson of Louis Agassiz, third of the Agassiz name to be closely associated with our Museum. Mr. Agassiz was not a worker in the scientific areas cultivated by the Museum; his personal interests lay, in fact, in the field of astronomy. He was, however, devoted to the memory of his father and after the death of Alexander Agassiz in 1910 took an increasingly active interest in the Museum to which the latter had given so great a measure of his life and fortune. Throughout this period of four decades he was a constant donor (often anonymously) to the Museum. His financial aid has been of the greatest help to us in the recent difficult years of inflation. He leaves us, at his death, in greatly improved financial condition. The income, now available, from the George R. Agassiz Memorial Fund relieves us of the burden of an annual deficit which the University has carried over a period of years. The additional gift of a half share of his residual estate will, I hope, enable us to improve the Museum's condition in the coming years, despite the threat of continued inflation.

Mr. Agassiz' interest in the Museum, however, was far more than that of a passive donor. He took an active part in its affairs, became a member of its governing body, the Faculty, in 1923 and even in the failing health of his last years was a constant and welcome visitor to the Museum and a faithful attendant at its Faculty meetings. He was ever desirous that the high standards of achievement set for the Museum by his father be maintained. My ideals were similar. I have valued most highly the support he consequently and consistently gave me in my efforts to advance the work of the Museum, and only regret that I did not know him in his younger and more vigorous years.

Staff

Dr. Bequaert, although an authority of international reputation in various phases of entomology and in the study of land mollusks as well, has been for years so heavily occupied by curatorial routine that his research work has been seriously impeded. This situation has been resolved by his appointment, as of July 1, 1951, to an Alexander Agassiz Professorship, so that the rest of his scientific career may be devoted to

his many research projects. Dr. Darlington has provisionally accepted the responsibility for the curatorship of entomology. Dr. William L. Brown, Jr., a recent graduate in entomology in the Department of Biology and currently engaged in research in Australia, will become Assistant Curator of Insects in 1952.

Mr. Griscom, in addition to his research in ornithology, has for many years rendered valuable services as editor of our publications. For reasons of health it has become advisable for him to curtail his activities to some extent and he has therefore relinquished his editorial post to give his full attention to research on New England birds and bird populations. Dr. Merrill E. Champion carried the load of editorial work during the past winter; we are deeply grateful for this, as we are for many services which he has done the Museum in recent years. Miss Nelda Wright will assume additional responsibilities as Editor of Publications from July 1.

Dr. Charles P. Lyman has been advanced from Assistant Curator to Associate Curator.

Mr. Robert L. Work, who has served zealously as Museum librarian for the past four years, has left us to re-enter naval service. It is with regret we see him go but it is pleasant to welcome a former member of the library staff, Miss Jessie B. Mackenzie, on her return to us as librarian.

As usual teaching duties were undertaken by various staff members. In addition to supervision of the work of graduate students by many members of the staff, Dr. Carpenter gave a course in entomology, Dr. Whittington instructed in stratigraphy, Dr. Iselin in oceanography, Mr. Stetson in sedimentation, and the writer gave courses in paleontology, comparative anatomy and a general education course in evolution, the latter two with the assistance of Dr. Ernest Williams.

Dr. Bigelow was honored by the award of the Prix Manley-Bendall (la Médaille Commémorative du Prince Albert Ier de Monaco) by the Institut Océanographique of Paris.

Research

Dr. Lyman's work on hibernation continues to produce results of interest. It has been possible to show that certain vital processes, such as respiration and acid-base balance remain essentially normal despite the torpid condition of the hibernator. On the other hand, tissue growth is greatly reduced, even though the stimulus for such growth is known to be present. All work on the process of waking from hibernation points to the autonomic nervous system as the controlling factor; but since the

hamster brain is little known, it has been necessary to undertake a detailed neuro-anatomical study in order to correlate electro-physiological findings with definite neuro-anatomical areas. Work has also continued on the mobilization of liver and muscle glycogen when waking from hibernation and the role of adrenal and thyroid in the hibernating state.

During the year volume 7 of Mr. Peters' Check-list of Birds of the World appeared; volume 8 is in course of preparation by Dr. J. T. Zimmer of the American Museum of Natural History and Mr. Peters himself is actively engaged on volume 9. Mr. Greenway has furthered his work on extinct birds. Mr. Griscom has continued work on the birds of Cape Cod and of Mexico.

Mr. Loveridge has revised a number of African snake genera; a synopsis of part of this work has been published in Belgium. In addition to several shorter papers, a report on reptiles of Nyasaland has been completed. Mr. Shreve has published the description of a new *Tropidodipsas*, and is studying our extensive material of *Leptodeira*.

Dr. Bigelow and Mr. Schroeder have completed a first draft of a new work on the Fishes of the Gulf of Maine to replace the book on the same subject published a quarter century ago. Their extensive monograph on skates, rays and chimaeras, part of the series of "Fishes of the Western Atlantic," has been completed and is in the hands of the printers.

In the department of mollusks, Mr. Clench has done further work on western Atlantic marine mollusks and completed a report on the Family Epitoniidae. He has further continued joint studies with Dr. Aguayo of the Universidad de la Habana on the Cuban land fauna; three reports on Cuban forms have appeared during the year. Dr. Bequaert's important monograph on the land snails of the subfamily Achatinae was completed and published during the year. Miss Turner, in addition to working as co-author with Mr. Clench in his marine studies, has nearly completed work on the western Atlantic Pholadidae. Mr. Foster has continued his determinations of fouling organisms for Dr. L. Hutchins of the Woods Hole Oceanographic Institution.

The revised Classification of Insects, by Drs. Brues, Melander and Carpenter, is close to completion and will be published in 1952. Dr. Bequaert continued his work on the American Hippoboscidae and Miss Bryant hers on Jamaican spiders. A work on the carabid beetles of New Guinea has been completed by Dr. Darlington, who has further devoted much time to a projected general work on animal geography. Dr. Carpenter has continued studies on the Permian insects of Kansas and

Oklahoma; an eleventh paper in the series on the Kansas fauna is in preparation, a second on the Oklahoma material. He has also written several short papers on Neuroptera and begun a revision of the Coniapterygidae (Neuroptera) of the Nearctic region.

A summer's trip in 1950 to Amsterdam, Paris and London enabled Dr. Deichmann to complete a report on the Phyllophoridae. She has further written a chapter on holothurians for Dr. Paul Galtsoff's Handbook of the Gulf of Mexico. A trip to Bermuda enabled her to study the plexaurid fauna there; as a result she hopes in the coming year to complete a study of this troublesome alcyonarian family.

A trip to European museums during the late spring and summer of 1950 enabled Dr. Edinger to accumulate valuable data for her new comprehensive work on paleoneurology — a long term project which will probably take four years or so to complete. Dr. Williams devoted most of his time to a study of West Indian fossil material including a curious monkey specimen as well as chelonian remains. The writer finished his study of the Carnegie Museum collection of Carboniferous and early Permian vertebrates and has resumed work on a monograph on reptilian osteology. Miss Wright and Dr. Edinger have continued work on the never-ending project of a bibliography of non-American vertebrate paleontology.

Dr. Whittington completed one section of his research on silicified trilobites from Virginia, and made progress in the preparation of a contribution to the section on Trilobita for the forthcoming "Treatise on Invertebrate Palaeontology." Dr. Shrock has availed himself of our facilities in the writing of a general work on invertebrate paleontology. Mr. Schevill has continued his studies of cephalopods.

Mr. Stetson continued his work on marine sediments. Dr. Iselin has given much of his time as a consultant to the government but has nevertheless made progress in his studies of the Gulf Stream. During the past winter he organized a multiple ship survey of the Gulf Stream, six ships being employed to give a synoptic picture of its condition during a three-week period.

In addition to the researches of Museum officers, our collections and facilities were utilized for the research activities of a large number of graduate students in biology, paleontology and geology working under the direction of staff members. The reports of the various departments record the visits for study of a score or more of scientists from other American and foreign institutions.

Library

During the year a number of improvements were made in library procedures. The limited funds available for the library — far below those customary and proper for a collection as large or as actively used as ours — have, however, made it impossible to care adequately for many pressing needs. We are years behind on binding. Numerous gaps still exist in journals whose receipt was interrupted by the war. It is of the highest importance that additional support be given to the library at the earliest possible time so that irreparable harm will not result.

Publications

In 1949-50 Bulletin publication ran to about 1500 pages, a considerable excess over our normal annual amount. To balance this, for budgetary reasons, publication the past year was reduced to a little over 600 pages. In consequence the time between receipt of manuscripts and their publication is currently rather greater than normal or desirable. It is hoped that we shall catch up with the backlog of papers during the coming year.

Earlier volumes of Peters' "Check-list of Birds of the World" were published by the Harvard University Press. Volume 7 has been published under Museum auspices, as will be future volumes. We are deeply indebted to Mr. Rodolphe Meyer de Schaunensee, Mrs. Walter W. Naumburg, Mr. Wililam H. Phelps and Mrs. Carll Tucker for their assistance in helping defray the publication costs of Volume 7.

The Museum has during the year subsidized, as is customary, a number of papers in *Psyche*. The department of mollusks has published one number of *Johnsonia*.

Collections

All departments report useful and valuable additions to their collections by gift, purchase or exchange. A full list of donors is given at the end of this report. Among the more notable additions may be mentioned collections of birds from the Philippines and Halmaheira, reptiles from Tanganyika given by C. J. P. Ionides, Esq., and in entomology Australian collections from Dr. W. L. Brown and the Alessandro Focarile collections of Italian Carabidae.

Advances in curatorial routines are reported by various curators. In the mammal department, use of a dermestid colony has speeded the cleaning of a mass of miscellaneous skeletal material. In the department of fishes, the cataloging of the collection, which has been under way for

a number of years, approaches completion, thanks to the energetic work of Mrs. Dick.

Expeditions and Travel

Relatively little field work was undertaken during the year covered by this report. Travel by Drs. Deichmann and Edinger to study foreign collections was noted above. Mr. Stetson took part in a cruise of the *Atlantis*, of the Woods Hole Oceanographic Institute, in the eastern Gulf of Mexico, during which bottom samples and cores were taken at 225 stations; this cruise complements a similar trip in 1947 which covered the western half of the Gulf.

During March and April, 1951, the writer and Mrs. Romer prospected, with meagre results, Permian deposits in the southern half of Clay County, Texas. In June Mr. and Mrs. Olsen collected at the Devonian "Scaumenac Bay" fish beds of the Gaspé region. Dr. Whittington spent six weeks in the Glass Mountains of western Texas collecting invertebrate fossils of Permian and Ordovician age. Several hundred pounds of blocks of limestone containing silicified fossils were obtained, which promise to yield a collection of Permian invertebrates second only to those in the U. S. National Museum. In addition Dr. Whittington collected fossils from localities in Oklahoma, Pennsylvania and New York. During the summer of 1950 Dr. Ernest E. Williams took part in an expedition to Jamaica on which valuable recent and fossil material was collected.

Acknowledgments

As ever, we are indebted to many people and institutions for financial support of the Museum's work, for services to us and for donation of specimens.

Thanks are due for the services of volunteer workers in several departments: Mr. Herbert Athearn and Mr. Richard I. Johnson in the department of mollusks; Miss Katherine Gaposchkin in the department of marine invertebrates, and Mr. R. H. N. Bruno in the department of vertebrate paleontology.

In addition to gifts mentioned earlier, our thanks are extended to the following for donations of specimens:

Birds: O. L. Austin, Jr., Mrs. A. F. Carr, F. S. Marden, A. Morgan, R. S. Palmer.

Entomology: Mrs. Dorothy Allen, P. Anduze, R. L. Araujo, H. Ar-

naud, G. E. Ball, N. Banks, P. Basilewsky, Mrs. Doris Blake, B. S. Bowdich, W. J. Brown, C. T. Brues, S. C. Bruner, L. deCarvalho, W. J. Clench, H. R. Dodge, R. P. Dow, H. E. Evans, A. G. B. Fairchild, M. Fassati, R. Frey, C. A. Frost, R. E. Gregg, H. Hoogstraal, P. D. Hurd, J. Klapperich, K. Kult, R. Latham, D. J. Lewis, C. J. Louwerens, A. Mead, C. H. Matin, C. T. Parsons, J. W. Rehn, E. Reitter, H. H. Ross, G. Salt, S. L. Straneo, I. B. Tarshis, H. Townes, J. M. Valentine, N. Weber, P. Weber, F. Werner, H. B. Wood, P. Wygodzinsky.

Invertebrate Fossils: F. E. Halvorson.

Mammals: H. Field, W. C. Forbes, E. E. Williams, J. A. Rivera.

Marine Invertebrates: P. Anderson, F. Bayer, A. Fleminger, Mrs. Arthur Loveridge, W. L. Nutting, G. H. Penn, W. C. Schroeder, D. Thaanum, F. Werner, S. L. Wallace.

Reptiles and Amphibians: P. A. Adams, C. T. Brues, J. L. Chamberlin, A. Curtiss, H. Field, B. Howe, G. Marcuzzi, C. R. S. Pitman, E. H. Taylor, G. Underwood, F. Werner, E. E. Williams.

Respectfully submitted,

ALFRED S. ROMER, *Director*

*Museum of Comparative Zoölogy**Faculty, 1951-1952*

JAMES BRYANT CONANT, PH.D., LL.D., S.D., L.H.D., D.C.L., D.SC. (hon.), DR. (hon.), LITT.D., F.E.I.S., *President*.

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ALFRED SHERWOOD ROMER, PH.D., S.D. (hon.).

GEORGE CHEEVER SHATTUCK, M.D., A.M. (hon.).

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ELIZABETH BANGS BRYANT, Assistant Curator of Insects, Retired.

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LUDLOW GRISCOM, A.M., Research Ornithologist.

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CHARLES PEIRSON LYMAN, PH.D., Associate Curator of Mammals.

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- WILLIAM EDWARD SCHEVILL, A.M., Associate Curator of Invertebrate Paleontology.
WILLIAM CHARLES SCHROEDER, Associate Curator of Fishes.
WILLIAM LOUIS BROWN, JR., PH.D., Assistant Curator of Insects (from January 1, 1952.).
ERNEST EDWARD WILLIAMS, PH.D., Research Associate in Vertebrate Paleontology.
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JOSHUA CLIFTON DICKINSON, JR., PH.D., Research Fellow.
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BENJAMIN SHREVE, Research Assistant.
RUTH DIXON TURNER, M.A., Research Assistant.
NELDA EMELYN WRIGHT, M.A., Research Assistant and Editor of Publications.
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THEODORE ELMER WHITE, PH.D., Associate in Vertebrate Paleontology.
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FREDERICK RUSSELL OLSEN, A.B., Preparator.
STANLEY JOHN OLSEN, Assistant Preparator.
MYVANWY MILLAR DICK, Assistant.
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ELINOR TOOP, A.B., B.S. IN L.S., Assistant Librarian.
DOLORES ALICE GUNNERSON, A.B., Assistant in Library.
MAXWELL LESLIE FRENCH, Staff Assistant.

Publications for the year 1950-1951

The following have been printed under Museum auspices during the year from July 1, 1950 to June 30, 1951.

Bulletin

Vol. 103

No. 8. Frontal sinus evolution (particularly in the Equidae). By Tilly Edinger. 87 pp. 9 pls. August, 1950.

Vol. 105

- No. 1. Studies in the Achatininae, a group of African land snails. By J. C. Bequaert. 216 pp. 81 pls. September, 1950.
- No. 2. Comparative genital anatomy of some African Achatinidae (Pulmonata). By A. R. Mead. 74 pp. 9 pls. Dec., 1950.
- No. 3. Life-history studies of East African Achatina snails. By F. X. Williams. 26 pp. 5 pls. January, 1951.

Vol. 106

- No. 1. *Amphisbaena fuliginosa* (Contributions to the knowledge of the Brazilian lizards of the family Amphisbaenidae Gray, 1825. 6. On the geographical distribution and differentiation of *Amphisbaena fuliginosa* Linné). By P. E. Vanzolini. 68 pp. 2 pls. April, 1951.
- No. 2. Breeding and other notes from Nyasaland and the Lundazi District of Northern Rhodesia. By C. W. Benson. 47 pp. June, 1951.
- No. 3. Mammals in the highlands of Southern Peru. By Oliver P. Pearson. 59 pp. 8 pls. June, 1951.
- No. 4. On reptiles and amphibians from Tanganyika Territory collected by C. J. P. Ionides, by A. Loveridge. 29 pp. June, 1951.

Johnsonia

Vol. 2, no. 29, September, 1950.

The Genera *Sthenorytis*, *Cirsotrema*, *Acirsa*, *Opalia* and *Amaea* in the Western Atlantic. By W. J. Clench and R. D. Turner, pp. 221-246, pls. 96-107.

Psyche

Vol. 57, no. 2. June, 1950.

Notes and Descriptions of Western Chrysopidae (Neuroptera). By N. Banks. pp. 45-67, 2 pls.

Two New Paussid Beetles from the Panama Canal Zone and the Philippines. By P. J. Darlington, Jr. pp. 68-71, 2 figs.

Vol. 57, no. 4. December, 1950.

A New *Leptothorax* from Alabama (Hymenoptera: Formicidae). By E. O. Wilson. pp. 128-130.

Additions to the Nearctic Meloidae (Coleop.). By F. G. Werner. pp. 131-136, 5 figs.

Vol. 58, no. 1. March, 1951.

On Some Central and South American Pterostichini (Coleoptera, Carabidae) in the Museum of Comparative Zoölogy. By S. L. Straneo. pp. 1-19, 1 pl.

Notes on Some New England Phryganeidae (Trichoptera). By N. Banks. pp. 20-23, 1 pl.

Notes on Alaskan Collembola. I. A New Genus and Species of the Family Isotomidae. By K. A. Christiansen. pp. 24-31, 1 pl., 1 fig.

The Structure and Relationships of *Oliarces* (Neuroptera). By F. M. Carpenter. pp. 32-41, 1 pl., 3 figs.

Descriptions of Some New Callistinae (Coleoptera, Carabidae) from East Africa. By P. Basilewsky. pp. 42-46, 1 fig.

Publications by the Museum Staff

BANKS, N.

- Notes and Descriptions of Western Chrysopidae (Neuroptera). *Psyche*, 57, no. 2, pp. 45-67, 2 pls. June 1950.
- Notes on Some New England Phryganeidae (Trichoptera). *Psyche*, 58, no. 1, pp. 20-23. March 1951.

BATCHELDER, C. F.

- A Bibliography of the Published Writings of Charles Johnson Maynard (1845-1927). *Jour. Society for the Bibliography of Natural History*, 2, pp. 227-260. January, 1951.
- A Bibliography of the Published Writings of William Brewster. *Memoirs Nuttall Ornithological Club*, no. 10, pp. 1-54. February, 1951.

BENT, A. C.

- Life Histories of North American Wagtails, Shrikes, Vireos, and Their Allies. *Bull. U. S. Nat. Mus.*, no. 197, pp. i-viii + 411, 48 pls. July, 1950.

BEQUAERT, J. C.

- The C. Andresen Hubbard Collection of Fleas of the Pacific Northwest. *Psyche*, 57, no. 2, p. 44. June, 1950.
- The Northernmost Extension of Bird Hippoboscidae in the New World. *Psyche*, 57, no. 3, p. 113. September, 1950.
- Studies in the Achatininae, a Group of African Land Snails. *Bull. Mus. Comp. Zool.*, 105, no. 1, pp. 1-216, 81 pls. September, 1950.
- A Bibliographic Note on Say's Two Tracts of March, 1831, and January, 1832. *Psyche*, 57, no. 4, p. 146. December, 1950.
- Records and Flower Preferences of Masarid Wasps. *Psyche*, 57, no. 4, pp. 137-142, December, 1950. (With K. W. Cooper.)
- A Nemestrinid Bred from a Grasshopper in the United States. *Bull. Brooklyn Ent. Soc.*, 45, no. 4, p. 104. October, 1950.
- Notes on Hippoboscidae. 20. A Revision of the Hippoboscidae of Chile. *Agricultura Técnica, Santiago de Chile*, 10, no. 1 (1950), pp. 5-9, February, 1951.
- Introducao no Brasil de Duas Espécies Africanas de Caramujos Transmissores de Esquistosomose. *Revista Brasileira Medicina*, 8, no. 3, pp. 167-170. March, 1951.
- Hippoboscidae Transported by Aircraft. *Bull. Brooklyn Ent. Soc.*, 46, no. 2, pp. 49-51. April, 1951.

BIGELOW, H. B.

- A New Genus and Species of Anacanthobatid Skate from the Gulf of Mexico. *Jour. Wash. Acad. Sci.*, 41, no. 3, pp. 110-113. March, 1951. (With W. C. Schroeder.)

BRUES, C. T.

- Large Raptorial Birds as Enemies of Cicadas. *Psyche*, 57, no. 2, pp. 74-75. June, 1950.

- Vespid Wasps (*Eumenes curvata*) Attracted to Smoke. *Psyche*, 57, no. 3, pp. 114-115, 1 fig. September, 1950.
- Phoridae. In: *Diptera of Connecticut*. Bull. Connecticut State Geol. Nat. Hist. Surv., no. 75, part 6, pp. 33-85, 8 figs. 1950.
- Natural History and the Biological Sciences. *American Natural.*, 85, pp. 207-208. May-June, 1951.

CARPENTER, F. M.

- The Lower Permian Insects of Kansas. Part 10. The Order Protorthoptera: The Family Liomopteridae and its Relatives. *Proc. American Acad. Arts. Sci.*, 78, no. 4, pp. 185-219; 3 pls., 11 figs. August, 1950.
- The Structure and Relationships of Oligarces (Neuroptera). *Psyche*, 58, no. 1, pp. 32-41; 1 pl., 3 figs. March, 1951.
- Studies on Carboniferous Insects from Commeny, France. Pt. 2. The Megasecoptera. *Jour. Paleont.*, 25, no. 3, pp. 336-355; 1 pl., 11 figs. May, 1951.

CLENCH, W. J.

- A New Genus and Species of Endodontidae from the Solomon Islands. *Revista de la Sociedad Malacologica*, 7, no. 2, pp. 59-60. July 15, 1950.
- Nuevos Helicinidos de la Provincia de Oriente, Cuba. *Revista de la Sociedad Malacologica*, 7, no. 2, pp. 61-66. July 15, 1950. (With C. G. Aguayo.)
- Edward Chitty with a Bibliography and Catalogue of His Species of Jamaican Land Mollusks. *Occasional Papers, Museum of the Institute of Jamaica*, no. 1, pp. 1-12, 1 pl. August 1, 1950. (With R. D. Turner.)
- The Genera *Sthenorytis*, *Cirsotrema*, *Acirsa*, *Opalia* and *Amaea* in the Western Atlantic. *Johnsonia*, 2, no. 29, pp. 221-246, pls. 96-107. September 30, 1950. (With R. D. Turner.)
- A Review. Reproduction and Larval Development of Danish Marine Bottom Invertebrates by Gunnar Thorson. *Johnsonia*, 2, p. 247. September 30, 1950.
- A Review. Catalogue of Japanese Shells by T. Kuroda and T. Habe. *Johnsonia*, 2, p. 247. September 30, 1950.
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