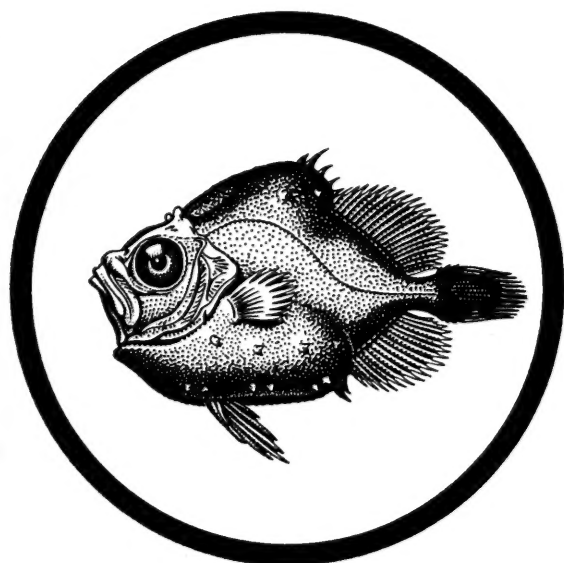


ANNUAL REPORT
1961-1962

MUSEUM OF COMPARATIVE
ZOOLOGY



Neocyttus helgae. Drawn by N. Strekalovsky.

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MUSEUM OF COMPARATIVE ZOOLOGY

FACULTY 1962-1963

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 EDWARD OSBORNE WILSON, PH.D., *Associate in Entomology.*

MUSEUM OF COMPARATIVE ZOOLOGY

REPORT OF THE DIRECTOR

I submit herewith my first report as Director of the Museum of Comparative Zoology. To take over the affairs of so distinguished an institution is as great an honor as it is a responsibility. Fortunately, the policies of the Museum developed by my predecessor, Alfred Sherwood Romer, are so sound and forward looking that it does not appear desirable at the present time to consider any fundamental changes in the Museum's objectives or activities.

Our first and foremost task as a university museum is to serve as a combined center of instruction and research. With six Alexander Agassiz Professors, and twelve additional research zoologists on the curatorial staff, we are indeed well qualified to carry out this task. The fact that more than thirty graduate students do their research either in the Museum or under the direct guidance of staff members seems to me to be a striking documentation of the importance of the MCZ as a graduate school. The quality of our research collections and of our library — one of the best biology libraries in the world — is of great assistance to us in our endeavor to attain the highest achievable standards of excellence.

Active research is an inseparable part of instruction in the sciences. The Museum of Comparative Zoology has stressed research since the days of its founding by Louis Agassiz, yet in the whole history of our institution there has been no period of greater scientific activity and productivity than the present.

The favorable intellectual climate of the Museum and its excellent collections induce numerous scientists to visit our laboratories for shorter or longer periods. The number of post-doctoral fellows and of senior scientists staying with us for the greater part of a year or longer has also steadily increased. An international conference on the classification and evolution of the crustaceans, organized by the Museum last spring with

the aid of a National Science Foundation grant, has been another manifestation of the scientific activity of the MCZ.

Although we may well be satisfied with our present activity, there are reasons to be concerned about the future. A research museum's excellence is, of course, determined by the excellence of its staff and it takes considerable funds to hold such a staff, to attract replacements, and to provide adequate facilities. I am most grateful to Dr. Romer for turning the Museum over to me in such sound financial condition. Owing to some recent gifts and bequests we are in a less precarious position than we have been in quite some time; the future, unfortunately, looks less rosy.

By far the greater part of our income is derived from endowment and if we are to keep up with rising costs, a sharp increase is needed. Other alternatives mean either subsidizing the MCZ or curtailing its activities. The urgent need for an endowment drive is thus self-evident.

Support of our scientific staff has been and will remain our first consideration. Yet it is a fact that the building itself is no longer fully adequate. We are greatly indebted to the National Science Foundation for having given financial support to a partial reconstruction of the building, as mentioned in Dr. Romer's previous report. Rebuilding of the two staircase shafts, completed in the fall of 1961, has not only greatly reduced the vulnerability of the Museum in case of fire, but has also given us eleven badly needed new laboratory rooms. The speed with which these rooms were filled by the staff, by graduate students, and by research workers proves how urgently they were needed.

Even though the pressure of overcrowding is somewhat relieved, our facilities remain inadequate. For instance, not one of the Alexander Agassiz Professors has proper laboratory facilities. Nor does the Museum have any facilities, such as aquaria, insectaries or aviaries, for the maintenance of living animals. Taxonomic and evolutionary research often raises problems that can be solved only by experimentation with living individuals. Constant temperature rooms for the study of climatic adaptations, rooms for the observance of populations

and inter-species interactions and adequate facilities for behavior studies are frequently needed, not only by staff members but by graduate students as well. It is quite out of the question to find space in the present building. The addition of a new wing should not be postponed very much longer.

Indoor facilities are not, however, the entire answer. There are important problems in the fields of population biology and ecology for the solution of which animal rooms are not a sufficiently natural environment. First steps were taken last year towards acquisition of a tract of land to serve as an inviolate study area for students and staff. Such a tract must be set aside now, before all natural areas within easy reach of Cambridge are destroyed by the relentless advance of Greater Boston.

The interests of the Museum and of the Biological Laboratories are so much the same that every opportunity is used to increase the close cooperation already established between these two institutions. Most members of our staff participate either by teaching formal courses or by tutoring graduate students in research courses. Staff members also serve on various committees of the Department of Biology and are regularly engaged in many of its other activities. All this is consistent with the concept of the MCZ as an integral part of the educational and intellectual life of Harvard. Maintaining and strengthening the harmonious ties between the Biological Laboratories and the Museum of Comparative Zoology will be of the greatest benefit to our students and to Harvard University as a whole.

There have been major changes in the Faculty of the Museum during the past year. Professor Henry Bryant Bigelow and Dr. George Cheever Shattuck retired after many long and faithful years of service. Professor Bigelow, who first became professionally associated with Harvard in the academic year 1905-06, thus ended more than fifty-five years of continuous service, a record perhaps unprecedented in Harvard's annals. Happily, he continues to be with us, carrying on his researches in ichthyology. Dr. Shattuck has served as a member of our Faculty since 1933. We are deeply indebted to both these gentlemen for

their many contributions to MCZ. We are most fortunate in having Thomas Dudley Cabot and Charles Peirson Lyman to replace them as members of the Faculty.

STAFF

There were no significant changes in staff, although it is with regret that I note here the imminent retirement (September 1, 1962) of Elisabeth Deichmann as Curator of Marine Invertebrates. Dr. Deichmann came to this Museum in 1928, and was appointed Curator in 1942. We are indeed grateful to her for her loyalty and support, and are mindful of her many contributions to science. Miss Deichmann is continuing her affiliation with the Museum as an honorary associate.

New staff appointments included James Edward Gillaspy, Research Associate in Entomology; Raymond Laurent, Research Herpetologist; Isabel Cristina Canet Research Fellow in Invertebrate Zoology; and William John Smith, Research Fellow in Ornithology.

George Nelson, oldest retired member of the museum staff, died at his home in Vero Beach, Florida, last April at the age of 86. Mr. Nelson joined the Museum staff as a preparator in 1902. In 1937 he was given a corporation appointment as Preparator-in-chief. He retired to Florida in 1946.

Dr. Simpson received the Gold Medal of the Linnean Society of London and was elected President of the Society of Systematic Zoology. The Director served as President of the XIII International Ornithological Congress at Ithaca (June 17-24) and was elected President of the American Society of Naturalists. Dr. Carpenter was elected a Vice President of the American Academy of Arts and Sciences; Dr. Lyman was Visiting Professor in the Department of Zoology at Cornell University (spring 1962); Dr. Paynter is continuing as President of the Nuttall Club, Dr. Whittington as Secretary of the Paleontological Society, and Dr. Levi as Secretary of the Rocky Mountain Biological Laboratory.

Staff members were much in demand to serve on national and international committees, panels and editorial boards. The

total number of lectures given — locally, nationally and internationally — is estimated to exceed several score.

TEACHING

Members of the staff continued to be active in teaching. Lyman, Mayr, Carpenter, Levi, Romer, Patterson, Whittington, Kummel, Clench, Turner, Williams, Mead, Deichmann, and Lawrence supervised the studies of graduate students. They participated in or gave the following courses: Biology 2 (Carpenter), Biology 40 (Mayr), Biology 127 (Carpenter), Biology 131 (Lyman), Biology 132 (Williams), Biology 149 (Levi), Biology 221 (Carpenter), Geology 150 (Kummel), Geology 151a, 151b (Whittington), Geology 153 (Patterson), Geology 155a (Whittington), Geology 155b (Kummel). Dr. Levi continued his work with the Academic Year Institute for High School Teachers of Science and Mathematics. Most staff members offered research courses. Additionally, many individual lectures were given in various undergraduate courses, such as Natural Sciences 5, Natural Sciences 201, and Biology 121. Drs. Evans and Patterson supervised the regular Tuesday Natural History seminars.

The following students, working in the museum, were awarded Ph.D. degrees during the year: Clayton E. Ray, Craig C. Black, Josef Vagvolgyi, C. G. Tillman, H. K. Brooks, and Robert H. Barth, Jr.

EXPEDITIONS AND TRAVEL

Field research, again, took members of the staff to all corners of the globe. Dr. Romer spent a month in Texas, engaged in stratigraphic research; Professor Patterson continued field work in a joint program with the University of Wyoming, concentrating this year on the late Paleocene deposits exposed in the vicinity of Shotgun Butte and in the Bison Basin. The materials obtained are gratifying additions to the vertebrate collections. Professor Carpenter was in Oklahoma and Kansas, visiting a number of Permian localities to collect fossil insects, and in August and September visited museums in western Europe and

in Moscow and Leningrad to study collections of Paleozoic insects. Dr. Williams was in Jamaica, Venezuela, Surinam, Trinidad, Martinique and Antigua collecting and observing lizards; Dr. Rand travelled extensively over Jamaica collecting and observing the anoles of that island. Dr. Carl Gans, partially supported by Museum funds, made a general collection in the Somali Republic, concentrating, however, on frogs and reptiles, and especially on amphisbaenids. The bulk of his collection is to be deposited here. Dr. Mead studied bramid fishes during the summer at various museums and field stations in Europe, and in the spring of 1962 accompanied the research vessel "Chain" during an exploration of the Carioca Trench in the southern Caribbean. Dr. Smith spent most of the year in Chile, Ecuador, Panama and Arizona in connection with his work on the comparative ethology of the flycatchers (Tyrannidae). Dr. Gillaspay was in West Texas and Northern California doing field work on bembicine wasps. Dr. Evans spent most of the summer in Wyoming, Utah and Colorado studying the comparative ethology of digger wasps of the subfamily Nyssoninae. In November he went to the British Museum in London to examine types and other material of the Bethylidae and the Pompilinae as a basis for a revision of these groups. Dr. Levi spent the summer of 1961 at Rocky Mountain Biological Laboratory with four students, and in May and June of 1962 travelled to southern Italy and Yugoslavia to study black widow spider problems in the field and obtain Mediterranean collections. In August and September, Dr. Clench, accompanied by two students, was in the coastal area of Georgia collecting and making field observations on fresh-water mollusks, as part of an overall molluscan survey of the southeastern states. The river systems from the St. Mary's River to the Savannah were covered. Mr. Richard Foster spent three and one-half months in the Pacific, collecting in the southern Cook Islands and in the Fiji Islands, and this material will fill many serious gaps in the Mollusk Department's Indo-Pacific collection.

Dr. Turner was in Hawaii to study the collection of Terebinthidae in the Bishop Museum and to present a paper at the

10th Pacific Science Congress. Dr. Whittington spent two months in western Newfoundland collecting Ordovician trilobites. Dr. Kummel, on sabbatical leave, visited paleontologists and their laboratories in Leningrad, Moscow; spent four months in field studies of the Permian and Triassic formations of the Salt Range, Pakistan; three months in the laboratories of the Geological Survey of India studying Triassic type specimens, and two months in Madagascar collecting from Permian and Triassic strata. He also made study visits to the Paleontological Institute at Tübingen, the British Museum, and Oxford University. During this period, thirty-five hundred photographs of fossil types were taken.

Major portions of this field research were supported by National Science Foundation grants. Acknowledgment is also made to the National Institutes of Health, Office of Naval Research, and Bureau of Commercial Fisheries.

RESEARCH

The scope of research conducted by the staff has ranged wider than ever. It extended from the study of general evolutionary principles to straight systematics, and from the study of behavior to population studies and biogeography. Much of the research in progress or completed during the year will be listed under Publications in future annual reports. Here only a quick survey will be attempted. New research has had gratifying support from the various foundations and federal agencies listed above. Grateful acknowledgment is also made to the Milton Fund for its support of a number of research projects.

The Director completed the revision of the manuscript of his book *Animal Species and Evolution* to be published in 1963. He wrote papers on the principles of classification and on the classification of the Hominidae, completed the Pachycephalidae for the *Check-list of Birds of the World* and worked on the Zosteropidae and Muscipapidae.

In the Department of Birds: Dr. Paynter completed a study of the avifauna of Tikal, Guatemala, and of the Paridae of the Harvard-Yale expedition to India, Pakistan and Nepal. Volume

XV of the *Check-list of Birds of the World*, published during this year, and also several other volumes in preparation required much time for editing, checking and proofreading. A number of family revisions and reports on collections were either completed or brought near to completion.

In the Department of Entomology: Dr. Darlington continued his work on the taxonomy of Carabidae especially of Australia and New Guinea, several manuscripts having been completed. He has also been working on some special aspects of evolution and zoogeography. Dr. Levi continued his studies of the spider family Theridiidae. He completed work on some South American genera and undertook a field study of black widow spiders and other spiders in Yugoslavia and Italy. Dr. Evans has brought a synopsis of the family Bethyridae (Hymenoptera) of the Americas nearly to completion. A review of the available information on life histories will be included in this revision. A critical revision of the Mexican and Central American spider wasps of the subfamily Pompilinae was well advanced as has been a comparative ethology of the digger-wasps of the subfamily Myssominae in co-authorship with Dr. Gillaspay. The latter continued his work on bembicine wasps. Professor Carpenter devoted most of his research time to the preparation of a manuscript on fossil insects for the *Treatise on Invertebrate Paleontology*. Diagnoses and figures of about 350 genera have so far been completed, in addition to shorter studies on Paleozoic insects of North America and Europe. Of the associates of the department, Dr. Chapin has completed an extensive manuscript on the Micronesian coccinellid beetles; Dr. Brown has been working on several major revisions within the ant tribe Dacetini; Dr. Wilson did field work in the West Indies on the ecology and behavior of ants and continued research on the classification of ants in the Pacific. He is also carrying out laboratory work on chemical communication among ants.

In the Department of Fishes: Dr. Mead has advanced his researches on the taxonomy, larval development and distribution of the oceanic fish family Bramidae and has continued his

interest in deep-sea and mid-water fishes in general. Mr. Schroeder while continuing his long and active interest in skates and rays has completed a manuscript on the whittings, *Merluccius*, of the American Atlantic. Mrs. Dick has described a new species of *Bathyclupea* and has begun a review of the seahorses of the western North Atlantic.

In the Department of Herpetology: Dr. Williams continued research on the lizard genus *Anolis*, both in the West Indies and in South America, collaborating in these studies with Dr. Ruibal, Dr. Rand, and Mr. James B. Lazell, Jr. Studies on the teeth of the amphibians and on the relationships of the three modern orders (in collaboration with Dr. Thomas Parsons) were completed. Work continued on the herpetology of Hispaniola, on the reptiles of Bougainville, and on the Cretaceous snake genus *Dinilysia*. Dr. Rand studied the ecology and ethology of Jamaican anoles and (with Dr. Williams) the ecological relationships and detailed distribution of certain races of these anoles.

Dr. Laurent, brought to the MCZ under a National Science Foundation grant, has begun his work on the herpetofauna of Africa. He completed a revision of *Typhlops*, of certain genera of turtles, and began a revision of the frog genus *Hemisus* and of the snake genus *Lycophidion*. He is preparing a report on the frogs of Angola and is collaborating with Dr. Gans on a report of a herpetological collection from the Somali Republic. He has also nearly completed the draft of a bibliography of African herpetology up to the year 1960 and has completed portions of a checklist of the African herpetofauna.

In the Department of Invertebrate Paleontology: Professor Whittington continued his studies of the systematics, distribution and evolution of Ordovician trilobites, and trilobites from the Bala area, North Wales. With the aid of a National Science Foundation grant, Drs. Rolfe and Whittington arranged the Conference on Crustacea, and prepared an eighty-page transcript of the discussions.

Dr. Rolfe continued his research on Paleozoic phyllocarids,

and completed a lengthy manuscript for the *Treatise on Invertebrate Paleontology*.

(Dr. Kummel, as noted earlier in this report, was on sabbatical leave.)

In the Department of Mammals: Dr. Lyman has continued his studies on the autonomic control of circulation during hibernation by infusing various drugs of known pharmacological effect, through permanently implanted aortic cannulae. Cell replacement during hibernation was also studied using tritiated thymidine. Mrs. Schevill made dissections of the nasal passages of a *Ziphius* and also continued with her work on the canid problem in New England.

In the Department of Marine Invertebrates: Dr. Deichmann has made progress on the monograph of the Antarctic holothurians. A report on the Puerto Rican horny corals has been completed and a number of holothurian collections have been identified as well as a collection of Madagascan echinoderms.

In the Department of Mollusks: Five major research projects are being carried on, the most important of which is a series of monographic revisions of the marine mollusks of the western Atlantic. Two of these were completed in the course of the year and three others are well advanced. Work on the freshwater mollusks of the southeastern states is continuing. Active field work during the year has filled some major gaps in the collection and has permitted the continuation of monographic surveys of river systems. Mr. Richard Johnson is collaborating with Dr. Clench on this phase of the research. Dr. Clench is continuing his long-time survey of the mollusks of the Bahama Islands.

Dr. Turner's research on marine boring and fouling mollusks is advancing. Work on several genera has been completed but most important is the monographic revision of the shipworms of the family Teredinidae, several phases of which are now in progress. Illustrations for a catalogue of the family are nearly complete, with thanks to financial help from the Milton

Fund. Improved facilities in the new laboratory rooms have aided greatly in examination and arrangement of the research collections which are the basis for the monographs now in preparation.

Several research associates have been working in the department during the past year: Dr. Josef Vagvolgyi is doing research on the distribution of the families of land mollusks in the Americas; Mr. Arthur Merrill is working on the Architectonidae; and Miss Myra Smith of the University of Queensland, Brisbane, is working with Dr. Turner on a study of the Australian Teredinidae.

In the Department of Vertebrate Paleontology: Dr. Romer completed work on his restudy of the oldest Carboniferous labyrinthodont, *Pholidogaster* of Scotland, and on a large American embolomere skull, and has begun study of the stratigraphy of Texas Permian redbeds.

Professor Simpson, in addition to collaborating with Professor Patterson (as noted below), started work on a description and revision of known fossil Lorisidae, continued work on fossil mammals from South America, wrote on the principles of taxonomy, and on the philosophy of science (centered on biology and geology).

Professor Patterson completed a long-term project on the mammals of the Divisadero Largo Formation of Mendoza, Argentina, carried out in collaboration with Professor Simpson and Dr. José Luis Minoprio of Mendoza. Insectivores collected by Drs. Clayton Ray and A. Stanley Rand in the Dominican Republic in 1958 were studied. The finding of remains of the first extinct solenodontid constitutes a noteworthy discovery, and a paper on these specimens is in press. Progress was made on the preparation of the Glossary and Correlation of the North American Cenozoic. Professors Simpson and Patterson are editing this project which is being sponsored by the Society of Vertebrate Paleontology.

Dr. Edinger continued her work on the annotated Bibliography of Paleoneurology, on an extensive description of a



Fossils collected by Dr. Kummel in the Salt Range of West Pakistan on the first leg of their journey to the MCZ.



One of the new study rooms constructed under the NSF Rebuilding Program.

Paleocene bat brain, and on a comprehensive paper concerned with the brains of Artiodactyla.

PUBLICATIONS

This was another year of great activity. Over eighty titles were published by members of the staff, totalling 1925 pages. Major publications include: "A Catalogue of the Viviparidae of North America" (Clench), Part I of "The Carabid Beetles of New Guinea" (Darlington), "A Revision of the Genus *Pseudisobrachium* in North and Central America" (Evans), "The Ecology and Nesting Behavior of the Pompilidae of the Northeastern United States" (Evans), "The Genera of the Spider Family Theridiidae" (H. W. and L. Levi), "American Spiders of the Genus *Argyrodes*" (Levi and Exline), "Cause and Effect in Biology" (Mayr), "A Triconodontid Mammal from the Triassic of Yunnan" (Patterson), "Historical Zoogeography of Australian Mammals" (Simpson), "The Genus *Lignopholas*" (Turner), and "Two Jurassic Turtle Skulls: a Morphological Study" (Williams and Parsons). Volume XV of the *Check-List of Birds of the World* was published by the Department of Birds.

Museum publications, under the competent editorship of Miss Wright, included 1,253 pages of the *Bulletin* (Volume 125, no. 3 through Volume 127, no. 3), and seventeen numbers of *Breviora* totalling 167 pages. The Department of Mollusks published two *Occasional Papers on Mollusks* totalling 46 pages. The Museum also sponsored publication of four papers in *Psyche*. Details concerning these publications are recorded in the appended bibliography.

Members of our scientific staff continued to serve as editors or as supervisors of other locally published scientific serials.

COLLECTIONS

There has been a substantial improvement in our collections, their housing, identification, and cataloguing, thanks to continued availability of funds from our National Science Foundation "facilities grant." We have already reported on expedi-

tions by the staff resulting in various additions to the collections. Particularly notable are the outstanding collections of Indian and Madagascan fossils (mostly Triassic) brought home by Dr. Kummel from his sabbatical year. The nearly five tons of material consists in large part of Triassic cephalopods but includes also a large collection of Triassic fish from Madagascar. Several large and valuable collections were added through donation or bequest.

LIBRARY

The Library, under the stewardship of Miss MacKenzie, continues to expand. Total holdings of 249,546 are reported, representing a net increase of more than 3,400 volumes and pamphlets. Seventy-eight new exchanges were arranged. MCZ now has a total of 1,124 exchange partners from which it receives 2,020 titles. Interlibrary loans totalled 663. These included sixty-one educational institutions in thirty-five states and the District of Columbia, and five in Canada, United States Government Agencies, branches of the Armed Services, hospitals, public libraries, museums and industry.

EXHIBITS AND MUSEUM SHOP

The Museum Shop completed its second year of operation with a modest profit and considerable good will. Visitors seem pleased to have an opportunity to purchase natural history specimens and literature and are appreciative of the high standards we have established. Shop profits are used for the maintenance and refurbishment of exhibits.

In April, with the assistance of the Friends of the Thayer Museum, and commemorating the 100th anniversary of the birth of John Eliot Thayer, a special exhibit was held of paintings and drawings of J. J. Audubon and other bird artists. This being the first time such a collection had ever been assembled for public display, it attracted many visitors. We are particularly indebted to Mr. and Mrs. I. Tucker Burr, Jr., Mr. and Mrs. F. Abbott Goodhue, Mr. and Mrs. Lawrence Hemenway,

and Mr. John T. Hemenway for their generous help and cooperation. Also on display for the first time is a seven-foot model of the Amazonian Pirarucu, one of the largest of the freshwater fishes.

ACKNOWLEDGMENTS

The Museum has been the recipient of some notable collections during the year, including the large and important spider collection of Professor A. M. Chickering, especially rich in Central American and West Indian forms, and the notable collection of North American beetles, left to us by Mr. Charles A. Frost.

We are indebted to Mrs. Henry C. Stetson for a generous gift in memory of her husband, enabling us to reopen (and modernize) our invertebrate fossil exhibits; and to Mrs. I. Tucker Burr, Jr. for her presentation of a valuable pencil and chalk drawing, "Le Pic Vert," by J. J. Audubon.

The Museum is also indebted to numerous friends for donations of specimens or aid in other ways:

Department of Birds

Mrs. Clinton Andrews, Miss Berta Burnett, Stephen L. Congdon, Mrs. Genevieve E. Cormack, Richard A. Dow, Eric Healey, Norman Hill, Mrs. Peter Leavens, Herbert Levi, Arthur Loveridge, Massachusetts Audubon Society, Robert T. Paine, Walter Stone, Charles Walcott, John G. Williams.

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Department of Entomology

In addition to the gifts listed above, many, many lots of insects were received — too numerous to list — by gift, purchase and exchange.

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The Library is particularly indebted to Professor Bigelow for financing the relighting of several areas. Acknowledgment is also made to the following for donations of books and funds for binding: George C. Shattuck, Henry B. Bigelow, Alfred S. Romer, Ernst Mayr, Russell Gibson, Philip J. Darlington, Jr., Giles Mead, William J. Clench, Joseph C. Bequaert, Ruth D. Turner, William E. Schevill, Joseph A. Hagar, Richard W. Foster, O. M. Root, Henry Field, Richard I. Johnson, Raymond Laurent, Ting Ying H. Ma, The Sedgwick Museum, Cambridge University, England, and Widener Library.

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PUBLICATIONS FOR THE YEAR
1961-1962

BREVIORA

- No. 143. Miocene lizards from Colombia, South America. By Richard Estes. 11 pp. 5 figs. Aug. 20, 1961.
- No. 144. A large ophiacodont pelycosaur from the Pennsylvanian of the Pittsburgh region. By Alfred Sherwood Romer. 7 pp. 1 fig. Aug. 21, 1961.
- No. 145. A new species of the cetomimid genus *Gyrinomimus* from the Gulf of Mexico. By Henry B. Bigelow. 2 pp. 1 fig. Sept. 5, 1961.
- No. 146. New rodents from the early Miocene deposits of Sixty-six Mountain, Wyoming. By Craig C. Black. 7 pp. 2 figs. Dec. 14, 1961.
- No. 147. Australian carabid beetles VIII. *Leiradira*, especially the tropical species. By P. J. Darlington, Jr. 12 pp. 6 figs. Dec. 15, 1961.
- No. 148. Australian carabid beetles IX. The tropical *Notonomus*. By P. J. Darlington, Jr. 14 pp. 9 figs. Dec. 18, 1961.
- No. 149. A preliminary study of the Silurian ceratiocaridids (Crustacea: Phyllocarida) of Lesmahagow, Scotland. By W. D. Ian Rolfe and T. P. Burnaby. 9 pp. Dec. 19, 1961.
- No. 150. The genus *Bethylus* in North America (Hymenoptera: Bethyridae). By Howard E. Evans. 12 pp. 3 figs. Jan. 5, 1962.
- No. 151. A new phyllocarid crustacean from the Upper Devonian of Ohio. By W. D. Ian Rolfe. 7 pp. 1 pl. Jan. 12, 1962.
- No. 152. New Australian dacetine ants of the genera *Mesostruma* Brown and *Codiomyrmex* Wheeler (Hymenoptera — Formicidae). By Robert W. Taylor. 10 pp. 9 figs. Jan. 15, 1962.
- No. 153. *Anolis scriptus* Garman 1887, an earlier name for *Anolis leucophaeus* Garman 1888. By A. Stanley Rand. 5 pp. Feb. 15, 1962.

- No. 154. Notes on Hispaniolan herpetology. 5. The natural history of three sympatric species of *Anolis*. By A. Stanley Rand. 15 pp. April 4, 1962.
- No. 155. Notes on Hispaniolan herpetology. 6. The giant anoles. By Ernest E. Williams. 15 pp. 1 fig. April 12, 1962.
- No. 156. The fossiliferous Triassic deposits of Ischigualasto, Argentina, and preliminary description of *Ischigualastia*, a new genus of dicynodont. By Alfred Sherwood Romer and C. Barry Cox. 9 pp. April 13, 1962.
- No. 157. A rhachitomous amphibian, *Spathicephalus*, from the Mississippian of Nova Scotia. By Donald Baird. 9 pp. 1 fig. 1 pl. May 28, 1962.
- No. 158. A fossil gerrhosaur from the Miocene of Kenya (Reptilia: Cordylidae). By Richard Estes. 9 pp. 3 figs. 1 pl. May 29, 1962.
- No. 159. Age in a small sample of bluefish *Pomatomus saltatrix* (Linnaeus). By Richard H. Backus. 4 pp. 1 fig. May 31, 1962.
- No. 160. Two new arthropod carapaces from the Burgess Shale (Middle Cambrian) of Canada. By W. D. Ian Rolfe. 9 pp. 1 pl. June 12, 1962.

BULLETIN

Vol. 125

- No. 3. Two Jurassic turtle skulls: a morphological study. By Thomas S. Parsons and Ernest E. Williams. 68 pp. 11 figs. 6 pls. June, 1961.
- No. 4. On the species of Pseudidae (Amphibia, Anura). By J. M. Gallardo. 26 pp. 4 figs. 1 pl. Aug., 1961.
- No. 5. Correlations between ecology and morphology in anoline lizards from Havana, Cuba and southern Florida. By Bruce B. Collette. 28 pp. 6 figs. Aug., 1961.
- No. 6. Cranial anatomy of the cynodont reptile *Thrinaxodon liorhinus*. By Richard Estes. 18 pp. 3 figs. 2 pls. Aug., 1961.
- No. 7. Two sympatric Cuban anoles of the *carolinensis* group. By Rodolfo Ruibal and Ernest E. Williams. 28 pp. 11 figs. Aug., 1961.

- No. 8. The taxonomy of the *Anolis homolechis* complex of Cuba. By Rodolfo Ruibal and Ernest E. Williams. 38 pp. 17 figs. Aug., 1961.
- No. 9. Taxonomy of the deep sea fishes of the genus *Chauliodus*. By James E. Morrow, Jr. 48 pp. 10 figs. Oct., 1961.
- No. 10. A contribution to the biology of the Giganturidae, with description of a new genus and species. By Vladimir Walters. 26 pp. 7 figs. Oct., 1961.
- No. 11. Variation in *Paramyxine*, with a redescription of *P. atami* Dean and *P. springeri* Bigelow and Schroeder. By R. Strahan and Y. Honma. 22 pp. 4 figs. Oct., 1961.
- No. 12. Abyssal mollusks from the South Atlantic Ocean. By Arthur H. Clarke, Jr. 56 pp. 4 pls. Oct., 1961.
- No. 13. The genus *Micrathena* (Araneae, Argiopidae) in Central America. By Arthur M. Chickering. 82 pp. 213 figs. Nov., 1961.
- No. 14. The Proscalopinae, a new subfamily of talpid insectivores. By Katherine M. Reed. 24 pp. 2 pls. Nov., 1961.

Vol. 126

- No. 1. Salientia of Venezuela. By Juan A. Rivero. 208 pp. 13 figs. 1 pl. Nov., 1961.
- No. 2. A revision of the genus *Pseudisobrachium* in North and Central America (Hymenoptera, Bethyridae). By Howard E. Evans. 110 pp. 5 pls. Dec., 1961.
- No. 3. The carabid beetles of New Guinea. Part I. Cicindelinae, Carabinae, Harpalinae through Pterostichini. By P. J. Darlington, Jr. 245 pp. 4 pls. May, 1962.

Vol. 127

- No. 1. The genera of the spider family Theridiidae. By Herbert W. and Lorna R. Levi. 71 pp. 14 pls. May, 1962.
- No. 2. American spiders of the genus *Argyrodes* (Araneae, Theridiidae). By Harriet Exline and Herbert W. Levi. 132 pp. 15 pls. May, 1962.
- No. 3. Scolopophorous organs in the pterothorax and

abdomen of *Gelastocoris oculatus* (Fabricius) (Hemiptera-Heteroptera). By Margaret C. Parsons. 32 pp. 12 figs. June, 1962.

OCCASIONAL PAPERS ON MOLLUSKS

Vol. 2

No. 27. A catalogue of the Viviparidae of North America with notes on the distribution of *Viviparus georgianus* Lea. By W. J. Clench. Pp. 261-287. Feb., 1962.

New records for the genus *Lioplax*. By W. J. Clench. P. 288. Feb., 1962.

No. 28. *Nettastomella japonica* Yokoyama in North America and notes on the Pholadidae. By R. D. Turner. Pp. 289-308. Feb., 1962.

PSYCHE

Vol. 68

No. 1. Australian carabid beetles V. Transition of wet forest faunas from New Guinea to Tasmania. By P. J. Darlington, Jr. Pp. 1-24, March, 1961.

A reconsideration of the genus *Epipompilus* (Hymenoptera: Pompilidae). By Howard E. Evans. Pp. 25-37, March, 1961.

No. 2-3. Some comments on Walckenaer's names of American spiders, based on Abbot's drawings. By H. W. Levi and L. R. Levi. Pp. 53-57, 1961.

No. 4. Australian carabid beetles VII. *Trichosternus*, especially the tropical species. By P. J. Darlington, Jr., Pp. 113-130, 1962.

PUBLICATIONS BY THE MUSEUM STAFF

1961-1962

BIGELOW, H. B.

Carcharhinus nicaraguensis, a synonym of the bull shark, *C. leucas*. Copeia, 1961 (3):359. (With W. C. Schroeder.)

A new species of the cetomimid genus *Gyrinomimus* from the Gulf of Mexico. Breviora, no. 145: 2 pp., 1 fig., 1961.

CARPENTER, F. M.

Studies on Carboniferous insects of Commentry, France. Part III. The Caloneuroidea. *Psyche*, 68(4):145-153, 2 figs., 1 pl., 1962.

Review. Introduction to entomology, by R. Jeannel. *American Scientist*, 50(2):178A-180A, 1962.

CLENCH, W. J.

A catalogue of the Viviparidae of North America with notes on the distribution of *Viviparus georgianus* Lea. *Occ. Papers on Mollusks*, 2(27):261-287, 3 pls., 1962.

New records for the genus *Lioplax*. *Occ. Papers on Mollusks*, 2(27):288, 1962.

New names introduced by H. A. Pilsbry in the Mollusca and Crustacea. *Acad. Nat. Sci., Philadelphia, Special Publ.* no. 4, pp. 1-218, 1962. (With R. D. Turner.)

DARLINGTON, P. J., JR.

Australian carabid beetles V. Transition of wet forest faunas from New Guinea to Tasmania. *Psyche*, 68(1):1-24, 1 fig., 4 pls., 1961.

Australian carabid beetles VII. *Trichosternus*, especially the tropical species. *Psyche*, 68(4):113-130, map + 3 figs., 1962.

Australian carabid beetles VIII. *Leiradira*, especially the tropical species. *Breviora*, no. 147:1-12, map + 6 figs., 1961.

Australian carabid beetles IX. The tropical *Notonomus*. *Breviora*, no. 148:1-14, map + 9 figs., 1961.

The carabid beetles of New Guinea. Part I. Cicindelinae, Carabinae, Harpalinae through Pterostichini. *Bull. Mus. Comp. Zool.*, 126(3):321-564, 4 pls, 1962.

EDINGER, T.

Fossil brains reflect specialized behavior. *World Neurology*, 2:934-941, 1961.

Anthropocentric misconceptions in paleoneurology. *Proc. Rudolf Virchow Med. Soc. New York*, 19(1960):56-107, 1962.

EVANS, H. E.

A reconsideration of the genus *Epipompilus* (Hymenoptera: Pompilidae). *Psyche*, 68(1):25-37, 1961.

Notes on the nesting behavior of *Plenoculus davisii* Fox (Hymenoptera: Sphecidae). Ent. News, 72 (9):225-228, 1961.

A revision of the genus *Pseudisobrachium* in North and Central America (Hymenoptera, Bethyliidae). Bull. Mus. Comp. Zool., 126(2):209-318, 5 pls., 1961.

The genus *Bethylus* in North America (Hymenoptera: Bethyliidae). Breviora, no. 150:1-12, 3 figs., 1962.

The ecology and nesting behavior of the Pompilidae (Hymenoptera) of the northeastern United States. Misc. Publ., Ent. Soc. Amer., 3:65-119, 1962. (With Carl M. Yoshimoto.)

Further notes on ethology of *Astata* (Hymenoptera: Sphecidae). Jour. New York Ent. Soc., 70(1):30-32, 1962.

GILLASPY, J. E.

A new species of *Stictiella* from Mexico (Sphecidae: Bembicini). Ent. News 72(7):169-173, 1961.

Nesting behavior of *Sphex tepanecus* Saussure (Hymenoptera: Sphecidae). Bull. Brooklyn Ent. Soc., 57:15-17, 1962.

LAURENT, R.

Notes on some South African amphibians. Publications de l'Université de l'État à Elisabethville, 1:197-209, 1961.

Étude d'une collection herpetologique du Mayombe. Première partie; Gymnophiones, Pipidae, Bufonidae et Astylosterninae. Rev. Zool. Bot. Afr. 63:262-276, 1961.

Note sur les *Hyperolius* et quelques *Afraxalus* (Salientia) du Musée de Berlin. Rev. Zool. Bot. Afr., 64:65-96, 1961.

LEVI, H. W.

Some comments on Walckenaer's names of American spiders based on Abbot's drawings. Psyche, 68(2-3):53-57, 1961. (With Lorna R. Levi.)

Argyrodes Simon, *Dipoenura* Simon, *Robertus* O. Pickard-Cambridge and *Theonoe* Simon (Arachnida, Araneae): proposed preservation under the plenary powers. Z.N. (S.) 1481. Bull. Zool. Nomencl., 19(1):43-47, 1962.

The genera of the spider family Theridiidae. Bull. Mus. Comp. Zool., 127(1):1-72, 1962. (With Lorna R. Levi.)

The spider genera *Steatoda* and *Enoplognatha* in America (Araneae, Theridiidae). Psyche, 69(1):11-36, 1962.

American spiders of the genus *Argyrodes* (Araneae, Theridiidae). *Bull. Mus. Comp. Zool.*, 127(2):73-204, 1962. (With H. Exline.)

LYMAN, C. P.

Mitochondrial oxidative enzymes and phosphorylations in cold exposure and hibernation. *Am. J. Physiol.*, 201:29-32, 1961. (With R. Chaffee and F. Hoch.)

Hibernation in mammals. *Circulation*, 24(2):434-445, 1961.

Hibernators and their problems. *Mass. Audubon*, 46:69-73, 1961.

MAYR, E.

Accident or design, the paradox of evolution. In "The Evolution of Living Organisms." Symp. Roy. Soc. Victoria, Melbourne, 1959. Melbourne University Press, Victoria:1-14, 1962.

Zufall oder Plan, das Paradox der Evolution. In G. Kurth, *Evolution und Hominisation*. Gustav Fischer, Stuttgart. Pp. 21-35, 1962.

Cause and effect in biology. *Science*, 134:1501-1506, 1961.

On cause and effect in biology. *Science*, 135:972-981, 1962. (Answer to letters.)

Check-list of birds of the world, Vol. 15. E. Mayr and J. C. Greenway, Jr., (eds.). Museum of Comparative Zoology, Cambridge, xii + 315 pp., 1962.

Grallinidae. In: Check-list of birds of the world (E. Mayr and J. C. Greenway, Jr., eds.), Museum of Comparative Zoology, Cambridge, Volume 15:159-160, 1962.

Artamidae. *Ibid.*:160-165, 1962.

Ptilonorhynchidae. *Ibid.*:172-181, 1962.

Paradisaeidae. *Ibid.*:181-204, 1962.

The classification of the Red-tipped Pardalotes. *Emu*, 61:201-202, 1961.

Proopyga Hodgson, 1844: proposed validation under the plenary powers (class Aves). Z.N.(S.) 1457. *Bull. Zool. Nomencl.*, 18:209-210, 1961.

Eight dubious species of birds: proposed use of the plenary powers to place these names on the official index. Z.N.(S.) 1033. *Bull. Zool. Nomencl.*, 19(1):23-26, 1962.

- Review. Charles Darwin, by G. Wichler. *Science*, 134:607, 1962.
- PATTERSON, B.
A triconodontid mammal from the Triassic of Yunnan. *International Colloquium on the Evolution of Mammals, Brussels*. Pp. 129-191 (1961) 1962. (With E. C. Olson.)
- PAYNTER, R. A., JR.
Notes on some Corvidae from Nepal, Pakistan, and India. *J. Bombay Nat. Hist. Soc.*, 58(2):379-386, 1961.
Review. The Birds of Finca "La Selva," Costa Rica: A tropical wet forest locality, by Paul Slud. *Wilson Bull.*, 73:304, 1961.
Review. Birds of the West Indies, by James Bond. *Wilson Bull.*, 73:304, 1961.
- RAND, A. S.
A suggested function of the ornamentation of East African forest chameleons. *Copeia*, 1961:411-414.
- ROLFE, W. D. I.
Geological report on Shareshill, Staffordshire. *Trans. Birmingham Archaeological Soc.*, 7:56-58, 1961.
Arthropoda, *In: Treatise on Invertebrate Paleontology*. Part Q, R. C. Moore, ed., 3:429, 1961.
Nomenclatural note: *Concavicularis* and *Quasicaris*, substitute names for *Colpocaris* Meek, 1872, and *Pterocaris* Barrande, 1872. *J. Paleont.*, 35:1243, 1961.
A preliminary study of the Silurian ceratiocaridids (Crustacea: Phyllocarida) of Lesmahagow, Scotland. *Breviora*, no. 149: 1-9, 1961. (With T. P. Burnaby.)
A new phyllocarid crustacean from the Upper Devonian of Ohio. *Breviora*, no. 151:1-7, 1962.
A syncarid crustacean from the Keele Beds (Stephanian) of Warwickshire. *Paleontology*, 4:546-551, 1962.
Ceratiocaris McCoy, 1849 (Crustacea, Archaeostraca), proposed addition to the official list of generic names. *Bull. Zool. Nomencl.*, 19:63-64, 1962.
The cuticle of some Middle Silurian ceratiocaridid Crustacea from Lanarkshire, Scotland. *Paleontology*, 5:30-51, 1962.
Geology of the Hagshaw Hills Silurian Inlier, Lanarkshire, Scotland. *Trans. Edinburgh Geol. Soc.*, 18:240-269, 1962.

Two new arthropod carapaces from the Burgess Shale (Middle Cambrian) of Canada. *Breviora*, no. 160:1-9, 1962.

ROMER, A. S.

A large ophiacodont pelycosaur from the Pennsylvanian of the Pittsburgh region. *Breviora*, no. 144:1-7, 1961.

Essay Review. A Cambridge Triumvirate. Asa Gray, 1810-1888, by A. Hunter Dupree; Louis Agassiz: A life in science, by Edward Lurie; Adventurous Alliance: the story of the Agassiz family of Boston, by Louise Hall Tharp. *New England Quarterly*, 35(1):104-109, 1962.

The fossiliferous Triassic deposits of Ischigualasto, Argentina. *Breviora*, no. 156:1-7, 1962.

Review. Vertebrate evolution. L'évolution des vertébrés inférieurs, by J. P. Lehman; Théories de l'évolution des vertébrés, by E. Jarvik. *Copeia*, 1962(1):223-227.

Synapsid evolution and dentition. International Colloquium on the Evolution of Mammals, Brussels. Pp. 9-56 (1961) 1962.

SCHROEDER, W. C.

Carcharhinus nicaraguensis, a synonym of the bull shark, *C. leucas*. *Copeia*, 1961(3):359. (With H. B. Bigelow.)

SIMPSON, G. G.

Comments on genetic evolution, and Comments on cultural evolution. In: Evolution and man's progress. *Daedalus*, Proc. Amer. Acad. Arts Sci., 90(3):468-470, 514-518, 1961.

Review. A classification of living animals, by Lord Rothschild. *Science*, 134:1745, 1961.

Historical zoogeography of Australian mammals. *Evolution*, 15(4):431-466, 1961.

Some cosmic aspects of organic evolution. In: Evolution and hominisation. Contributions in honor of Gerhard Heberer on the occasion of his 60th birthday, edited by G. Kurth. Stuttgart. Pp. 6-20, 1962.

The status of the study of organisms. *Amer. Scientist*, 50(1): 36-45, 1962.

Review. Evolution's two components: biological and cultural. *Mankind Evolving: The Evolution of the Human Species*, by Theodosius Dobzhansky. *Science*, 136: 142-143, 1962.

- Notes on the nature of science by a biologist. In: Notes on The Nature of Science. New York, pp. 7-12, 1962.
- Foreword to The Origin of Species by Charles Darwin. New York, pp. 5-9, 1962.
- Review. A synthesis of evolutionary theory, by Herbert H. Ross. Science, 136:528, 1962.
- Evolution of Mesozoic mammals. International Colloquium on the Evolution of Mammals, Brussels. Pp. 57-95, (1961) 1962.
- Evolution Og Dens Perspektiver. Danish translation of The Meaning of Evolution. København, 250 pp., 1962.
- De Betekenis van de Evolutie. Dutch translation of The Meaning of Evolution. Antwerpen and Utrecht, 250 pp., 1962.
- El Sentido de la Evolucion. Spanish translation of the Meaning of Evolution. Buenos Aires, 319 pp., 1962.
- The Meaning of Evolution. Japanese translation of The Meaning of Evolution. Tokyo, 373 pp., 1962.
- TURNER, R. D.
- Remarks on *Nettastomella* and *Jouannetia*. Ann. Rep. American Malacological Union, pp. 17-18, 1961.
- The genus *Lignopholas* Turner (Mollusca: Pholadidae). Mitt. Zool. Mus. Berlin, 37:287-308, 7 pls., 1962.
- New names introduced by H. A. Pilsbry in the Mollusca and Crustacea. Acad. Nat. Sci., Philadelphia, Special Publ. no. 4, pp. 1-218, 1962. (With W. J. Clench.)
- WHITTINGTON, H. B.
- A natural history of trilobites. Natural History, 70(7):8-17, 15 figs., 1961.
- Middle Ordovician Pliomeridae (Trilobita) from Nevada, New York, Quebec, Newfoundland. J. Paleont., 35(5):911-922, 5 figs., pls. 99-102, 1961.
- Conference on Crustacea. GeoTimes, 6(8):20, 1962.
- WILLIAMS, E. E.
- Two Jurassic turtle skulls: a morphological study. Bull. Mus. Comp. Zool., 125(3):43-107, 1961. (With T. S. Parsons.)
- Two sympatric Cuban anoles of the *carolinensis* group. Bull. Mus. Comp. Zool., 125(7):181-208, 1961. (With Rodolfo Ruibal.)

- The taxonomy of the *Anolis homolechis* complex of Cuba.
Bull. Mus. Comp. Zool., 125(8):209-246, 1961. (With
Rodolfo Ruibal.)
- Notes on Hispaniolan herpetology. 6. The giant anoles.
Breviora, no. 155:1-15, 1962.
- Review. Schildkröten. Krokodile. Brückenechsen, by Heinz
Wermuth and Robert Mertens. Copeia, 1962(1):231-234.

PUBLICATIONS ISSUED BY OR IN CONNECTION
WITH THE
MUSEUM OF COMPARATIVE ZOOLOGY
AT HARVARD COLLEGE

BULLETIN (octavo) 1863 — The current volume is Vol. 128.

BREVIORA (octavo) 1952 — No. 183 is current.

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

JOHNSONIA (quarto) 1941 — A publication of the Department of Mollusks. Vol. 4, no. 41 is current.

OCCASIONAL PAPERS OF THE DEPARTMENT OF MOLLUSKS (octavo) 1945 — Vol. 2, no. 28 is current.

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

The continuing publications are issued at irregular intervals in numbers which may be purchased separately. Prices and lists may be obtained from the Publications Office of the Museum of Comparative Zoology, Cambridge 38, Massachusetts.

Of the Peters "Check List of Birds of the World," volumes 1, 4 and 6 are out of print; volumes 3, 5, 7, 9, and 15 are sold by the Museum, and future volumes will be published under Museum auspices.

The Proceedings of the First International Symposium on Natural Mammalian Hibernation edited by C. P. Lyman and A. R. Dawe is available as volume 124 of the Museum of Comparative Zoology Bulletin. Published in 1960, it consists of 26 papers and a general discussion, totalling 550 pages. Price \$3.00 paper back, \$4.50 cloth bound.

PUBLICATIONS OF THE
BOSTON SOCIETY OF NATURAL HISTORY

The remaining stock of the scientific periodicals of the Boston Society of Natural History has been transferred to the Museum of Comparative Zoology for distribution. Prices for individual numbers may be had upon request.

