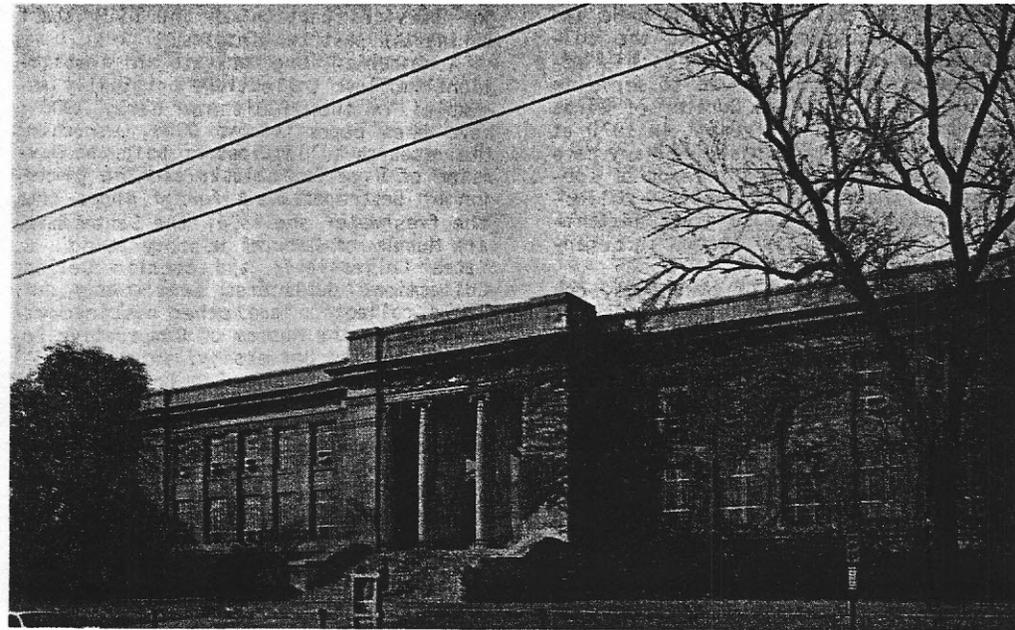


THE OHIO STATE UNIVERSITY MUSEUM OF ZOOLOGY

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The Ohio State University Museum of Zoology occupies a portion of this building, now known as Joseph Sullivant Hall. It was the Ohio State Museum of the Ohio Archaeological and Historical Society until 1970, when it became part of the university.

The Ohio State University maintains a number of systematic collections of biological specimens housed in several departments of the College of Biological Sciences. Three of these, the Collection of Insects and Spiders, the Acarology Laboratory, and the Herbarium, were described in the April 1982 issue of the ASC Newsletter.

Specimens collected by Ohio State University's first zoologist, Albert H. Tuttle, were used for teaching and research beginning in 1874, the first year of his appointment. Within the first year of his tenure he had assembled a collection of nearly a thousand specimens, chiefly of alcoholic material, including an impressive array of animals from many invertebrate groups.

David S. Kellicott, Tuttle's successor, organized the accumulated collections of zoological specimens and began a general accessions catalog in 1891. Kellicott himself contributed several hundred insects of various orders to the university. His accessions catalog notes the purchase of the Wheaton Collection of Birds of Ohio, as well as the large mollusk and fossil invertebrate collection of Henry Moores. The combined collections were formally designated the "O.S.U. Museum of Zoology" when labels were printed for the Moores Collection, about 1895.

Following the sudden death of Kellicott in 1898, James S. Hine took over the curatorship of the Museum of Zoology, serving in this capacity for over a quarter-century.

In 1925, under the terms of a mutual agreement between the university and the Ohio Archaeological and Historical Society, the zoological collections (except insects) were transferred to the new Ohio State Museum building of the society, lo-

cated on the OSU campus at Fifteenth and High streets. Hine accompanied the collections to the new facilities, and was appointed the first State Curator of Natural History.

Five years of extraordinary achievement in the development of public exhibits in natural history as well as in the growth of zoological research collections at the new museum were abruptly interrupted by Hine's sudden death in 1930.

Edward S. Thomas, Hine's friend and former student, continued the work in natural history at the Ohio State Museum. He made many additions to the various research collections, especially the Ohio Orthoptera, over the next 30 years. His weekly "Nature" column in the *Columbus Dispatch* was instrumental in attracting contributions of additional specimens to the growing collections.

The large collection of fishes which had been assembled at OSU's Franz Theodore Stone Institute of Hydrobiology, largely through the collecting efforts of Milton B. Trautman, was combined with the collections at the Ohio State Museum in 1955. At this time, Trautman joined the staff as Curator of Vertebrate Collections.

Upon Thomas's retirement in 1962, David H. Stansbery was appointed State Curator of Natural History. With the help of his graduate student and associate Carol B. Stein, he began to organize the museum's varied natural history collections into discrete areas of academic concern. The extensive collections of freshwater mollusks and crustaceans added to the museum by Stansbery and Stein brought these areas up to the size and research value already achieved by some of the vertebrate collections.

In 1970 the Ohio Historical Society moved from the Ohio State Museum building

to its new quarters, now known as the Ohio Historical Center, about a mile from OSU. The natural history exhibits were also moved to the new center. Arrangements were made, however, to retain the zoological research collections on the campus. Maintenance and administration of these collections was transferred to the OSU Department of Zoology. Trautman retired, and Ted M. Cavender joined the staff as Curator of Fishes.

For four years the re-created OSU Museum of Zoology continued to occupy the lower level of the former Ohio State Museum building. Then, in 1973, all of the research collections, laboratories, and offices were moved across the campus to temporary quarters while the old building was completely renovated. In 1975, the insect collections were placed on indefinite loan to the OSU Department of Entomology. All of the other zoological collections were moved back into the remodeled lower floor of the former Ohio State Museum building, now appropriately renamed Joseph Sullivant Hall after a founder of the university who had maintained a fine cabinet of natural history specimens.

Today, the Museum of Zoology occupies nearly an entire floor of Sullivant Hall. In addition to the collection ranges, curatorial offices, and processing laboratories, the museum maintains several graduate and guest research labs, an excellent map library, photographic and x-ray studios, a darkroom, a live animal room, boats and trailers for field work, and an electrophoresis laboratory.

Division of Amphibians and Reptiles.

The collections of this division consist of 4,559 cataloged lots of amphibians and 1,984 cataloged lots of reptiles. There are also several hundred lots of uncataloged specimens. Both collections are especially strong in Ohio material, and contain representatives of most species found in eastern United States. There is a limited amount of material from the western states and from Mexico, Panama, the Bahamas, Ethiopia, and Kenya.

Some of the specimens date back to the last century, many of them forming the basis of a series of papers by Max Morse (1901-1904) on the amphibians and reptiles of Ohio. During the 1920's OSU student Charles F. Walker and his colleagues collected throughout the state. The specimens they collected were used by Walker in writing *The Amphibians of Ohio, Part One, The Frogs and Toads*, and also by Roger Conant in *The Reptiles of Ohio*.

Renewed interest in the collections began during the late 1950's when John M. Condit volunteered to help Trautman, the new Curator of Vertebrate Collections, rearrange and organize the herpetological material. Kraig K. Adler, Steven G. Tilley, David M. Dennis, and other OSU students founded the Ohio Herpetological Society (now the Society for the Study of Amphibians and Reptiles) and contributed many specimens during the 1960's.

When the university assumed the management of the Ohio State Museum's zoological collections in 1970, Condit was given an adjunct faculty appointment and was placed in charge of this division, as

well as the Division of Mammals. Over the past twelve years he has organized and maintained the collections with the help of a number of interested students and occasional work-study aides. Donations of specimens from students and friends of the museum, as well as those collected by Condit and other staff members, keep the herpetological collections growing at a moderate pace.

Division of Birds. The OSUM ornithological collections include not only an extensive skin collection of over 17,000 cataloged specimens, but also an exceptionally large and well documented collection of bird eggs, some 1,200 skeletons, and several thousand microscope slides and tissue preparations of avian adrenal and thyroid glands.

The collections are especially rich in Ohio material, containing what is probably the most complete extant assemblage of birds from this state. Not only voucher specimens for distributional records, but also extensive series of skins showing plumage development and sexual dimorphism are featured.

The study skin collection contains one or more representatives of 116 of the families of the birds of the world. Such extinct species as the Passenger Pigeon, Carolina Parakeet, and Ivory-billed Woodpecker are well represented.

In addition to the fairly complete collection of birds from North America, there are sizable collections from Central and South America, plus smaller collections from Europe, Australia, the Philippines, Borneo, Africa, and Asia.

The first major accession of ornithological material came in 1891, when the university purchased the John M. Wheaton Collection of Ohio birds. Several early faculty members and friends of the university contributed to the growing collection, obtaining specimens from the field and by purchase in both local and foreign markets, including those of Russia, Germany, and France.

The W. F. Henninger Collection, dating from 1874 through 1928, added 2,500 skins (including some 700 Brazilian specimens) to the museum's holdings.

Physiologist Frank A. Hartman, pioneer in the study of the adrenal gland, contributed nearly 900 bird skins, together with thousands of microscope slides of endocrine glands and many notebooks of research data associated with these specimens. Several hundred of the Hartman birds are from Panama, and were examined by Alexander Wetmore as he prepared his monograph of the avifauna of that country.

The Oberlin College Collection of some 1,300 birdskins was incorporated into the OSUM research collection during the 1970's. The Lawrence E. Hicks collection, of approximately the same size, is also at OSUM. Nearly 500 skins from B. R. and L. W. Campbell, the voucher specimens for their *Birds of Lucas County* (Ohio), are also deposited here.

Other collectors who have contributed many specimens include Thomas and Hine, the early curators of the collection; Charles F. Walker, C. F. Newell, Karl Maslowski, David O. Blythe, J. J. Strophlet, Maurice Giltz, Woodrow W. Goodpaster, Paul A. Stewart, Laurel Van Camp, Edward F. Hutchins, Robert Kondik, Karl Bednarik, Mary Puhlman, B. Van Buskirk, and H. C. Shetrone. A number of specimens collected in the Philippines by E.

L. Moseley on the Steere Expedition in 1887-1888 are also in the collection.

At least a third, and perhaps as many as half of the OSUM bird study skins are the direct result of the field work of Milton B. Trautman, who became Curator of Vertebrate Collections in 1955. He had been contributing specimens to the collection for many years prior to his appointment, and has continued to serve in a voluntary capacity as Curator of Birds since his official retirement in 1970 at the age of 70. He and his wife Mary have not only collected many thousands of specimens for the ornithological collections, but they have also given unstintingly of their time and energy in organizing and cataloging them.

The OSUM collection of bird eggs, one of the most complete for the North American continent, contains 4,364 cataloged sets. Several thousand more await processing. It was largely assembled from the private collections built by B. R. Bales, Homer F. Price, and Ernest H. Short.

The large skeletal collection was prepared by Robert M. Goslin, primarily for use in identifying bird remains found in archaeological sites.

Division of Bivalve Mollusks. The research collection of this division had its origin in the latter half of the 1800's with the merging of the private shell collections of Moores, Colvin, Conly, Sullivant, and other Ohio naturalists, which were acquired by the Ohio State University in its early years and which formed a major part of the original OSU Museum of Zoology.

During the first half of the Twentieth Century the malacological material grew rather slowly and sporadically as bequests and donations of specimens were made by interested OSU faculty members and by friends of the Ohio State Museum. James S. Hine and his associates collected Ohio unionids on their field trips around the state during the late 1920's.

In 1962, with the appointment of David H. Stansbery as State Curator of Natural History, a strong effort was made to enlarge the freshwater mollusk and crustacean collections. Stansbery brought extensive unionid bivalve collections with him to the museum, and has continued to maintain his efforts to build these collections to worldclass status. With the aid of Stein and other associates, the bivalve collection has grown rapidly. It is curated by Stansbery with the aid of curatorial assistant Kathy Gail Borrer and several parttime student helpers.

The freshwater bivalve collection currently consists of 45,684 cataloged lots containing 299,706 specimens. Half that many additional specimens are still awaiting processing. The collection is worldwide and includes both recent and fossil specimens, as well as a substantial amount of material from archaeological sites. It may well be unique in its extensive coverage of recent North American freshwater unionid species. The sphaeriids of this area are also well represented and are just beginning to be identified and catalogued by Kathy Borrer.

Most of the North American material has been collected by OSUM staff, students, and friends since 1955, and is exceptionally well documented. The collection has proven to be of great value in meeting the original objective of sol-

ving long-standing systematic and zoogeographic problems in the group. It has also become an extremely valuable database for evaluating the status of most of our surviving unionid species. Such endangered species research has been a major service function of the OSUM staff during the past two decades.

A number of large private and institutional mollusk collections originally assembled in the 1800's and early 1900's have been deposited at OSUM, enriching the research collections of both the Division of Bivalve Mollusks and the Division of Gastropods. A few of these are the freshwater shells of the Santa Barbara Museum of Natural History (the L. G. Yates Collection); the Oberlin College Collection, duplicates from the A. A. Gould collection and other historic material from the Museum of Comparative Zoology, Harvard University; and the Samuel P. Hildreth and Harla Ray Eggleston Collections from Marietta College.

The bivalve collection is cataloged in a single numerical sequence, but is housed in three areas of the range: 1) allochthonous material, consisting of shells with soft parts and of soft parts dissected from the shells, preserved in airtight glass jars in trays systematically arranged on steel shelving; 2) large lot of dry shells, usually 25 or more specimens per lot, packed in flat white boxes arranged systematically on steel shelving; and 3) smaller lots of dry shell systematically arranged in trays in drawers in standard wooden cabinets.

All specimens cataloged into the collection are cleaned, and all dry shells are numbered. Plastic foam is used in the trays to prevent the specimens from being jostled and chipping each other. The consistent orientation of the shell in the trays (nacre down, right valve or top) allows a researcher to scan quickly over an entire drawer to compare the facies of the shells and to rapidly note major variations between lots. Unique stand-up labels make it possible to locate a lot in minimal time without disturbing the shells. Where time and space permit, the lots of each species are arranged in drawers by drainage system. Wherever possible, large series of 25 or more specimens are kept in each lot in order to provide statistically significant sample sizes of intra-population variation.

Division of Crustaceans. The strong staff interest in the distribution and systematics of riverine animals, particularly those of central and eastern North America, has led to the accumulation of a substantial collection of crustacean material from this area. David H. Stansbery, who curates this division, has made a determined effort over the past two decades to build a collection of these animals, especially the crawfish, in order to study the systematic and zoogeographic problem of the group.

To date the crawfish collection contains 2,247 cataloged lots which contain 23,266 specimens. Approximately three times that many crawfish are yet to be processed.

A small but historically valuable nucleus of crustacean material was collected in Ohio around the turn of the century by OSU faculty and students, especially R. C. Osburn and E. B. Williamson. Additions to the collection were sporadic until 1962. Rendell Rhoades actively col-

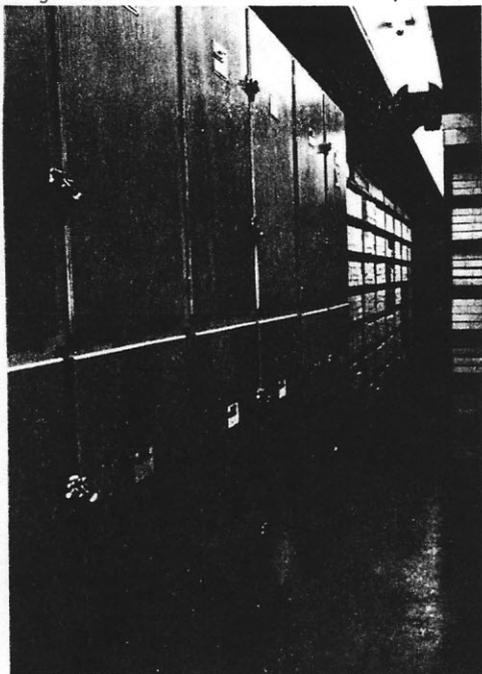
lected Ohio crawfish during the 1930's and many of his specimens are now deposited at OSUM. Donal Francois' New Jersey crawfish are here. The Illinois Natural History Survey contributed nearly a thousand lots from the Illinois River system. The rivers of the Ohio, Cumberland, and Tennessee River basins are especially well represented through the collecting activities of Stansbery, Stein, and several other OSUM staff, students, and associates. Raymond F. Jezerinac, F. Lee St. John, Roger F. Thoma, Joanne Stillwell, Karen J. Reese, and several others have made many contributions.

Following his retirement from Ohio Wesleyan University, William F. Hahnert has been active in identifying and cataloging the terrestrial isopods. Other relatively small crustacean collections awaiting cataloging include amphipods, ostracods, cladocera, and a variety of marine taxa, mostly decapods.

Division of Fishes. With Ted M. Cavender, Curator, and Craig R. Ciola, curatorial assistant, this division houses a research collection of 917,000 alcoholic specimens which is 61% cataloged. There are 563,252 cataloged specimens in 50,282 lots. The type collection consists of 265 paratypes in 12 taxa. Supporting research collections include 1,920 osteological preparations (skeletons and cleared and stained specimens), considerable fossil material from the North American Cenozoic, and photokaryotypes of 116 eastern North American freshwater species.

The cataloged alcohol collection occupies a range of 1,800 square feet and is equipped with adjustable steel shelving, fluorescent lighting, and an overhead sprinkler system.

Representational strengths of the collection are eastern North American freshwater fishes, particularly the Ohio River Basin. There is complete drainage coverage for the states of Ohio, Indiana, and large sections of Missouri. Specimens



A portion of the OSUM bivalve collection range. Large lots of dry shells are packed in white boxes on the rear shelving. In the foreground are specially designed wooden cabinets housing drawers of smaller lots of cataloged shells.

are cataloged from 31 additional states, as well as Mexico and Canada. A limited amount of marine material is included.

The collection had its origin at The Ohio State University about 1895 with the work of R. C. Osburn and E. B. Williamson, under the direction of Kellicott. Hine, another of Kellicott's students, curated the zoological collections, including fishes, until 1930, when Thomas became curator.

In 1921 Milton B. Trautman began to collect and study Ohio fishes. His collections over several decades eventually led to the publication of his 1957 monograph *The Fishes of Ohio*, the revised version of which was published in 1982. The two books constitute an exceptional documentation of a state fauna and its changes.

During the period 1925-1970 the collection was housed by the Ohio Historical Society in the Ohio State Museum, where it was joined in 1955 by a second large fish collection built by Trautman and others at the OSU F. T. Stone Institute of Hydrobiology. Trautman, as Curator of Vertebrate Collections, took charge of the fish collection in 1955 until he retired in 1970.

In 1970 the collections were transferred to OSU as part of the Museum of Zoology, and Ted M. Cavender was appointed Curator of Fishes. With the aid of his students, Cavender has expanded the collection to include a wide range of the North American freshwater fauna. During the past five years the collection has grown at the rate of 10% per year. Some important additions have been the Shelby Gerking collection of Indiana fishes from Indiana University; Missouri state survey material from William L. Pflieger, Missouri Department of Conservation; TVA survey material from the Tennessee River basin; and a New Jersey coastal marine collection from Ichthyological Associates, Inc.

Over the years the collection has served an important function in teaching and research at the university, especially as a source of material for graduate theses and dissertation problems. As a data base for environmental work, the collection is continually utilized in cooperation with local, state, and federal agencies.

The Division of Gastropods. Although it is the youngest museum division, the Division of Gastropods has quickly become one of the largest, with over half a million specimens cataloged since its inception in 1970. The division's major emphasis is on non-marine gastropods, especially the freshwater snails of North America.

The Henry Moores Collection, acquired by the university in 1891, included many lots of gastropods. Additional specimens were contributed over the years by various faculty members, students, and local naturalists. The museum's early curators, James S. Hine and Edward S. Thomas, accepted contributions of gastropods and other invertebrate specimens, and occasionally collected snails in the course of their field work in Ohio.

The 1962 arrival of David H. Stansbery, an aquatic zoologist, as State Curator of Natural History renewed the interest in gastropods, bivalves, crustaceans, annelids, and other major animal groups frequently overlooked in museum collections. Stansbery and his graduate

student and colleague Carol B. Stein spent much of their time for several years ferreting out the many collections of "natural curiosities" packed away in various nooks and crannies of the Ohio State Museum. As these collections were sorted, thousands of gastropod specimens came to light. When these were added to the extensive collections of freshwater gastropods made by Stansbery and Stein during their field work in the streams of North America, it became obvious that the gastropods constituted a major resource of zoological data.

When the university acquired the Ohio State Museum's zoological research collections in 1970, Stein was placed in charge of the Division of Gastropods and the Division of General Collections. As she neared completion of her doctoral work she became the official curator of these divisions in 1972. William N. Kasson is the curatorial assistant for both divisions.

The first gastropods were cataloged in 1972. A decade later there are 14, 175 cataloged lots containing 661,363 specimens. Several thousand additional lots have been cleaned, sorted by family, and made available for study. Approximately half of the research collection has yet to be cataloged.

The Pleuroceridae of eastern North America are especially well represented, with several thousand large lots of alcohol-preserved specimens plus extensive, statistically significant series of cabinet specimens. Most of this material has been collected within the past quarter-century by Stein, Stansbery, and their associates and students, and is exceptionally well documented. The pleurocerid collection assembled by Lorenzo Yates, formerly housed by the Santa Barbara Museum of Natural History, adds many historical records of vanishing species.

Terrestrial gastropods are also well represented in the collection, especially those of eastern North America. The Archie L. Jones Collection of over 9,000 specimens of the Floridian tree snail, *Liguus*, was recently acquired. Eugene P. Keferl's collection of the snails of Cedar Bog, Champaign Co., Ohio, is deposited here. The David Tracy Jones material includes many Ohio specimens from the 1930's. Land snails from the West Indies collected by George A. Seaman, William J. Clench, Barry D. Valentine, and Eugene P. Keferl are in the collection.

Worldwide land, freshwater, and marine gastropod collections deposited here include not only the Henry Moores Collection, but also the Oberlin College Collection, the Ohio Wesleyan University Collection, and the Harry and Mary Smith Collection.

Division of General Collections. A number of small collections which have not yet grown to the size or research significance of the museum's major divisions are grouped together here. They are curated by Carol B. Stein with the assistance of William N. Kasson, and are housed adjacent to the gastropod range.

The collections of sponges and coelenterates consist mainly of dry specimens, and frequently have little data. Bahamian specimens with good data, collected by Stein and Keferl, are included.

A collection of parasitic worms is increasing rapidly through contributions from several parasitologists, including John L. Crites, C. L. Cooper, and Paul

Stromberg. The specimens are preserved in liquid or as microscope slide mounts.

Many specimens of leeches and branchiobdellids have been contributed by Stansbery to the annelid collection, which also includes oligochaetes and polychaetes.

The arthropods are represented in this division by millipedes, centipedes, and spiders. Although these collections are small, they contain useful distributional records from Ohio and other states.

Collections of the molluscan classes Polyplacophora, Cephalopoda, and Scaphopoda are also housed in this division, as are the echinoderms, tunicates, and several of the less common marine phyla.

Division of Mammals. The mammal collection consists of 3,929 specimens, and is completely cataloged. Most specimens are skins and skulls; some are skeletons. The majority of the material is

from Ohio, although there are also specimens from Mexico, Panama, Brazil, and Australia. The collection includes mammals collected by Woodrow W. Goodpaster in the southwestern United States.

The oldest specimens in the collection were acquired in the 1890's by the old OSU Museum of Zoology. However, the majority of the specimens were collected and prepared by Robert M. Goslin, who worked as an assistant in the Departments of Natural History and Archaeology in the Ohio State Museum from the 1930's until his death in 1964. Goslin's interest in the identification of animal remains from archaeological sites led him to prepare many skeletons of Ohio vertebrates, including mammals. Goslin was especially interested in the Chiroptera, and the collection has an excellent series of bats from the state.

John M. Condit first volunteered to help organize the mammal collection in

1965, under the supervision of Trautman, who was then Curator of Vertebrate Collections. When the zoological research collections became part of OSU in 1970, Condit was given the responsibility of curating the mammal collection, still on a volunteer basis. The collection has experienced little growth in recent years, but is well maintained. It is used by faculty and graduate students at OSU and other universities. Various students, staff members, and friends of the museum, as well as Ohio Department of Natural Resources personnel, have contributed a number of important specimens to the collection.

This article has been prepared by Ted M. Cavender, John M. Condit, David H. Stansbery, Carol B. Stein and Milton B. Trautman. ●