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1996

**THE BIVALVE MOLLUSK COLLECTION**  
of the  
**OHIO STATE UNIVERSITY**

Museum of Biological Diversity  
1315 Kinnear Road  
Columbus, Ohio 43212-1192  
U.S.A.

**ADMINISTRATION**

The Bivalve Mollusk Division of the Museum of Zoology is administered by the Department of Zoology of the College of Biological Sciences and housed along with the other life science collections of Ohio State University in the Museum of Biological Diversity.

**MISSION**

The mission of the Bivalve Division is teaching, research and service through the use of collections of specimens, literature and related data. As needs arise and opportunities become available the emphasis on teaching or research or service changes so as to achieve maximal productivity of the staff and the facility. The scope of interest is both fossil and recent, local and world-wide; but the collections are richest in North American material, and current programs involve the study of some aspect of the recent North American, European or Asiatic faunas.

**HISTORY**

The OSUM Bivalve Collection is really a collection of collections. Over the years a number of private and institutional collections have been assembled on the campus and organized into the collection here today. The earliest large accession was that of Henry Moores (1812-1896) and was world-wide, fossil and recent. Through exchanges with Say, Binney, Conrad, Lea, Haldeman and others, Moores assembled one of the most diverse collections of labelled shells of that period. The University purchased this collection (3500 specimens for \$1,750) circa 1890, added to it several other private collections and catalogued the material as part of the holdings of the first organization of the Ohio State University Museum of Zoology in 1891. This collection and others were given to the Ohio State Museum on campus in 1925, maintained and enlarged for nearly half a century, then returned to the administration of the University in 1970. Although the greater part of the collection has been assembled by Museum staff and students since 1950, the importance of the earlier contributions in documenting a fauna that has been extensively extirpated and, in too many instances, become extinct, should not be overlooked.

**SIZE AND HOUSING**

The Bivalve Collection presently has 54,975 catalogued lots totaling 357,817 specimens. Of these, 12,781 lots are represented by soft parts as well as shells. The smaller lots, numbering 46,487, are arranged in systematic sequence in trays in cabinet drawers. An additional 5,621 lots comprise the larger series of specimens, which yield data having a correspondingly higher statistical significance. These are stored in labeled boxes, in catalog-number sequence, on steel shelving. All three parts of this single collection are catalogued in a single numerical system. All data is computer-stored as well as catalogued in bound books, and carded for additional convenience in data retrieval, search, recombination and other uses. The computer software used is our own custom application written in dBase 4. All three collections are housed in a single large range room (7,500 square feet) with ample vertical space for expansion - the addition of a second floor if necessary. For students and visiting researchers there are a number of conveniently placed desks and tables. Three adjacent laboratories are devoted to 1) processing of incoming material, 2) cataloguing incoming collections and computer data entry, and 3) research.

Some grasp of the breadth of world fauna available here can be had by noting that specimen lots from 73 different countries representing all continents except Antarctica have been catalogued. All states of the United States are represented except Hawaii. In all 541 species and subspecies of bivalve mollusks are

represented. These are almost exclusively freshwater taxa.

The fossil material should really be termed subfossil and is represented mainly by archaeological specimens from prehistoric village and burial sites. A growing aspect of the collection comprises the "bones" of species from streams and lakes where the fauna has been extirpated within the last century.

## ADVANTAGES

Every collection has its strengths and its weaknesses. We are no exception. Two of our weaknesses are 1) our modest collection of marine bivalves and 2) the very few primary types housed here. We do, however, have several innovations which save time and avoid confusion for both the student and the researcher while helping to preserve the specimens themselves for generations to come.

These include:

1) Stand-up Labels. These enable the user to obtain all basic collection data without touching the specimen(s) unless necessary for other information.

2) Tray Placement of Individual Specimens. Specimens are placed in their trays or boxes with nacre down and with the right valve over the left. In this manner they are arranged in rows moving from the smallest to the largest specimen within each lot series. Each specimen then presents a full lateral view of the external surface of the right valve. By scanning each drawer of lot trays the user may quickly and easily ascertain the facies of the material so presented with no risk of damage to the specimens themselves. Students and researchers wishing to familiarize themselves with the gross characteristics of each species or subspecies usually find this technique satisfactory. More detailed examination and study is available if desired.

3) Plastic Foam Tray Liners. Each tray and box has a thin sheet of plastic "foam" dropped into the box and the specimens placed on this soft resilient material. When drawers are pulled out and pushed back, specimens in trays can slide back and forth, strike each other and produce chipping of edges and even breakage of very fragile specimens. The plastic liner prevents this sliding and the damage it causes. The recent move across the University campus to the new Museum of Biological Diversity caused extensive jostling (apparently due to truck and dolly motion) but breakage was kept to a minimum thanks to the foam liners.

4) Cross-Labeling. When the soft parts are dissected from their shells and held separately in liquid preservative both the empty shells in their trays and the soft parts in their jars have labels bearing the same basic collection and cataloguing data. Notations on both shell nacre and the label with the soft parts inform the user that the entire specimen is available.

5) Locale Checking. Each incoming collection from the field has its collection data checked using the museum Map Library for errors of omission or commission. Any information added to a label is always placed in [brackets] to inform the user of its origin. We can make errors, too!

6) Field Collection Data Records. Each incoming collection is assigned a Collection Number composed of the abbreviation of our institution: "OSUM", the year the collection was originally made in the field, and the next number in the series for that year. Thus OSUM:1993:7 would be assigned to the seventh collection for the year 1993 to be accessioned into the OSUM Bivalve Division. This number appears on the computer entry for the collection, on all labels of all species taken, on all collection cards and on the Field Collection Data Record. The Field Collection Data Record contains all collection site data including a list of all species and other forms taken at that place and time.

## COOPERATIVE EFFORTS WITH OTHER INSTITUTIONS

In instances when incoming material from our field projects is greater than our anticipated needs (usually from large middens of empty fresh shells) the "duplicates" are set aside as part of our exchange

collection. These specimens along with duplicate literature items have been useful in exchanges with other institutions. In this manner we enrich the collection materials here while helping others do the same at their locations.

Over the past 35 years we have exchanged specimens and/or literature with something over 30 foreign museums and nearly all the major museums in North America. At the present we have exchange programs on-going with museums in Brazil, China and Japan.

#### **LIBRARY OF BIVALVE MOLLUSK LITERATURE**

We are of the opinion that collections of specimens and related data should have collections of pertinent literature housed in the same or in an adjacent facility. Our collection of journals, monographs, surveys, reports, bulletins, reprints, "gray" and other literature is being catalogued on computer. Space is being organized in the range room so that eventually this literature resource and the means of using it effectively will be easily accessible to both student and researcher. At this time 4,275 literature items have been entered and indexed using our custom software. It's only a beginning, but we believe we are headed in the right direction.

#### **EDUCATIONAL EFFORTS**

The Curator's specialty (1962-present) has been the study of freshwater bivalve mollusks with an emphasis on the unionids. The demand for an on-going course in malacology has not been great enough to teach such a course during the normal school year. Biological field stations presented the opportunity for students wishing to take such a course to do so during the summer session. Such a course was taught at the Upper Cumberland Biological Station, Tennessee; Stone Laboratory, Ohio and Auburn University, Alabama.

Although something over 70 students were exposed to the 2-3 week "too much, too fast" course in the study of unionid mollusks, the greater number of students were taught informally one on one, in the range, in the laboratory, in the field, at meetings and traveling between meetings or collecting sites. There is still much to be said for the apprenticeship method. Apprenticeship is alive and well in malacology.

#### **ACCOMPLISHMENTS**

The most obvious accomplishments of the Bivalve Mollusk Division can be seen in papers published, students taught, degrees conferred, and the growth of the collection itself. But the most valuable contribution may well lie in the area of service. Over a ten year period essentially all of our spare time and energy that might have been used in research and writing was devoted to helping enact the federal Endangered Species Act of 1973. This was followed by an equally lengthy and active period of providing information to the Department of the Interior supporting the listing of unionid mollusks as endangered species. This was done species by species until a group of some 25 unionid species of the 41 we recommended were protected. We were commended by the Office of Endangered Species for our role in generating both the "red book" of endangered mollusks and the "blue book" of endangered unionids and for providing much of the information needed to firmly protect these elements of our natural heritage.

One never knows what problems tomorrow will bring for solution to the curators and staff of a museum. It is because of this inability to predict the future that museum collections are so very valuable as well as interesting.

David H. Stansbery  
Curator of Bivalve Mollusks  
23 October 1993