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## The Laxarus Collection: What Has Been Found

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The Laxarus Collection: What has Been Found

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## WHAT HAS BEEN FOUND

### Abstract

The donated Bippus collection, comprised of over 15,000 specimens of gastropods and mollusks, has mostly gone unnoticed and untouched since its donation. These collections are known as ‘orphan collections’ which escape notice and are forgotten. However, this is not the only instance in which collections are kept out of sight. Museums, whether specializing in art or natural history, display only a small portion of their entire collection at once. The majority of collections found in museums are kept out of sight from the public for various reasons. Instead of keeping the Bippus collection out of reach for both the public and scientific community, the following Honors project will bring the collection to light. The aim of the project is twofold: to first will grant professional organizations, such as the American Malacological Society, to view the specimens photographed to aid in research (American Malacological Society). The second is to allow amateur shell clubs and organizations to have access to a valuable resource.

Keywords: collection, shells, gastropods, mollusks, malacology

## WHAT HAS BEEN FOUND

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Francis Bacon and Issac Newton can be identified as the men who allowed the Western world to start examining the natural world with a scientific eye. In eighteenth century England, amateur naturalists competed amongst one another to obtain new species to describe and name, their obsession ranging from the organisms in Europe to the colonized New World (Conniff 18). However, it is Carolus Linnaeus who is credited for his development of the binomial nomenclature for classifying and organizing the relationships of species to one another. While his original guidelines of classification have since been abandoned, the framework of his writings over organizing the natural world still remains to this day.

This new method of organization allowed for the craze of discovering new species to spread through the Western world. This brought about an explosion of hobbyists and amateur naturalists in the 18<sup>th</sup> century and widened the Western world's understanding of the natural world.

While not as prolific, today's hobbyists can purchase chemicals and materials for keeping and maintaining their own collections. Not only are these products affordable, but also they are safer than attempting to mix together materials to create the desired product. (Moyer 16-21). The Internet also provides means as to helping amateurs identify organisms or make purchases to add to their own collections (Conchylinet).

### **Literature Review**

The purpose of museums, whether it is a museum focused on art, the natural world, or on human history, are the same. As a non-profit institute, they are defined to be:

in the services of society and its developments, and open to the public, which acquires, conserves, researches, communicates, and

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exhibits, for the purposes of study, education, and enjoyment, material evidence of people and their environment (Talboys 4).

While museums serve to meet this definition, the biggest problem that occurs for these institutes is the conflict between conservation and the display of items to educate the public (Stolow 1).

The Smithsonian Museum of Natural History houses over 127 million objects, yet only 2% of their collection is on display for the public at a single time (Smithsonian). Some items are not displayed due to the state of their condition, deeming them too delicate to be placed on display.

In the case of species, there are usually multiples of the same species.

Preservation and restoration of these items occurs to both displayed and artifacts that are kept in storage. In art, it is noted that there has been restoration of paintings since at least the sixteenth century (Conti 16). Techniques in conservation have evolved over time. Modern preservation takes into consideration multiple variables with any item in their possession, such its intrinsic value, the cost-benefit of restoring the item, and how closely the item is to its original condition (Applebaum 257).

However, some museums are taking measures to allow items within their collection to be viewed by anyone who has access to the Internet. Digitizations of collections through photography and 3D scans have allowed access to public collections and pieces previously unseen (Falk, Dierking, Foutz 190). The advantage to this development is the prevention of damage caused by moving and packing for transport to multiple locations over a period of time (Stolow 37).

Mollusk shells are no different than works of art or pottery. Age can make shells more brittle while poor storage can cause color to fade. A variety of maladies can occur to shells if not kept in ideal storage conditions. Mollusk shells present a challenge in that the curator must be

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able to keep the shells together with their labeling. Labeling is vital in knowing scientific information about the specimens, and without the data they are considered scientifically useless (Sturm, Pearce, Valdés 101-10). The value of keeping labels and specimens together is imperative for those who wish to study these specimens and for museums that keep holotypes—the organisms used in order to describe and organize any newly discovered species.

### **Methodology**

The foundation of the applied research in this project is photography. It is imperative that the color, appearance, and detail of each mollusk be captured. These details provide the scientific community and public who view these specimens a chance to examine them in depth. Each photograph is to be performed under the same conditions to maintain consistency. For this, a light tent and the lights that accompany are used concurrently. A centimeter ruler will be placed beside each shell for size reference alongside a label containing the genus and species of the specimen to maintain identification.

Most species within the Bippus collection have multiple specimens of the same species. When this is encountered, there is to be a checklist in which to choose which to photograph: the quality of the overall shell, color, and morphology. All specimens must be collectively examined in order to determine which shell or shells will be chosen. Specimens to consider for photography are those that display vibrant and/or unusual color. For instance, color differences may be the result of a unique color variation. Specimens with obvious cracks, chipped lips, or broken off spines should not be considered for photography. The only instance in which these should be photographed is if that specimen is the only one of its species in the collection, or if the damage is minimal enough to be overlooked.

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After the photography has been completed, all images are to be uploaded to digitally edit the images. Digital editing will be defined and limited to cropping of the image, rotating the image to straighten out the photograph, and placing multiple pictures of the same specie together in a single, larger image. Color and editing of each shell should not be performed in order to preserve true color and any of the “flaws” that may be apparent in a specimen’s photograph.

### **Results**

Almost 600 photographs were taken over the course of the project, documenting only two boxes and half of a cabinet. Each photographed specimen was given a numeric and alphabetic label for recording them. BSC starts each label to indicate the connection to the Bippus Shell Collection. The next part of the label indicated the location the specimen was photographed from (Box 1, Cabinet 1, etc). A number was then used for the numeric order in which they were photographed, followed by the year in which the specimen was collected. In cases when the year was not recorded, ‘XXXX’ was used in its place.

All specimens within Box 1 and Box 3 were mounted within display boxes, allowing for quick photography to be performed. Figure 1 illustrates the display box with mounted specimens.



Figure 1. Standard mounted specimen, labeled BSC.B.I.10.1955. Photograph by Avonelle Combs.

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Ideal specimens were picked out to photograph for detailed macro shots to show the condition of specimens and to make it possible for them to be studied should they be examined (Figure 2). In certain cases, shells with unusual color were found and photographed beside another of the same specie to show these differences. However, multiple species were found to not have any specimens that were undamaged but were photographed anyway to document them. In instances of damage, the source of the damage could be identified to be from Byne's decay or from physical damage. Byne's decay was identified by small, white deposits of mineral on the shell surface (Figure 3). In more severe cases that were found, it had progressed to encompass the entire shell.



Figure 2. Detail of BSC.B.III.26.1950. Photograph by Avonelle Combs.



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Figure 3. Byne's decay on BSC.B.III.04.1950. Note the white 'dots' on the right side of the shell along with the left side. Photograph by Avonelle Combs.

Damage was also noted on the outermost layer of the shell on certain specimens, the periostracum. The outer protein layer of the shell had become severely dehydrated, resulting in the flaking seen in certain photographs (Figure 5).



Figure 5. Detail of Byne's decay on BSC.C.I.81.1949. Photograph by Avonelle Combs

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### **Prospectus**

While the visual catalog was not completed from the entire collection, it still serves as material that can be used for whomever may one day take the collection for education or adding to a larger collection. The photographs will serve a larger purpose in being allowed to be added to an online catalog that can be accessed by amateur and professionals for identifying shell species. Along with a digital record of Excel documents to identify what the collection possesses, its existence is invaluable to preserving the collection/

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