

Type Re-housing Project – Summer Internship 2007

John Graf

This NSF funded summer internship was a continuation of the ongoing project of re-housing the type specimens of the fossil mammal collections at the American Museum of Natural History. This two month internship focused on the re-housing of the type specimens from the fourth and seventh floors of the fossil mammal collections. Re-housing was then started on the fifth and sixth floors of the collections.

Recent advancements in the study of collections management brought to light more appropriate materials that were not used in the previous years of the re-housing project. The old standard of blue board was upgraded to corrugated plastic (Coroplast™), a stronger, more durable material. To expedite the process, standard sized treated paper trays and plastic boxes were used instead of creating custom boxes for every specimen. Because of issues with glue failures, a specific glue gun and low melt glue became the standards for use.



Summer Intern Bradley Pearson gluing tri-rod into place to support horns on a type specimen

Along with these new materials, several advancements on the previously developed techniques for re-housing were made. Whenever necessary, Coroplast, cut to the height needed for a given specimen, was used as a backer for the paper trays. This backer was then glued to the inside of the paper tray before further assembly. The box would be made deep enough for the specimen while preserving its accessibility. When dealing with specific special issues, such as awkward space remaining in the drawer, custom boxes were created from the Coroplast. To prevent torquing of larger boxes housing heavier specimens, Coroplast would be cut to line the base of the box. Ornamentation or structural complexities creating stability issues forced the orientation of some skulls to be with the teeth facing downward. Antelope skulls are one example of this problem. For these instances, tri-rod supports were created to shift the resting weight of the specimens onto the basicranium and the palate whenever possible. Some specimens had enough material to be arranged anatomically. For these specimens, reversibility was abandoned for a more specific organization. Counter sinking these elements into several layers of Ethafoam™ or very elaborate tri-rod supports were used to achieve this goal.

One new technique that was developed dealt with the issue of overcrowding. The elements for some of the specimens could not fit together in the same tray, so multiple trays were used to re-house them. Certain spatial constraints prevented some of these multi-boxed specimens to be placed back where they came from. A mezzanine stacking technique was developed as a solution to this issue. Support structures were created out of straddled layers of Coroplast at a height to clear any underlying elements. These structures were anchored to the bottom of the larger of the boxes fitted specifically for the smaller box. This was done before any lining was done. The resultant structure would then carefully hold the smaller box within the larger box without allowing any

contact between the above box and the underlying elements. For larger boxes, it is suggested to run pillars of Coroplast along the longer central axis to prevent sagging.

Certain old and new techniques were abandoned during this project. Creating handles was attempted to resolve the issue of lifting larger boxes without putting any strain on the Coroplast backers. Combining archival quality cloth bands and Ethafoam backer rods, stirrups were glued onto the outside of the paper trays. This technique was abandoned because stability issues. It was unclear whether or not the glue would withhold for larger or heavier specimens. It may be possible in the future to develop a more stable method for attaching the handles to the paper trays. Coroplast was also scored or sanded at times to improve the strength of the glues hold on the Coroplast



Classic example of re-housing a type specimen with a skull and multiple elements where each component is separated into individual compartments



A simple technique of re-housing a type specimen with horns that involves gluing tri rods together to stabilize the horns and the skull



This image illustrates the simplest technique of stabilizing a type specimen that is a skull. Two tri rods are glued at the ends, which creates the oval shape that provides the stability to support the skull.



These are type specimens found stacked on top of each other in a box, which does not allow for adequate long-term preservation. This image shows the many different ways of bending the tri rods into shapes to properly support them in the box.



These boxes represent one whole type specimen with multiple elements. Because of special constraints in the drawer, a mezzanine complex was developed to properly stack elements on top of one another in the box using corrugated plastic (Coroplast).



This is a special case where the cast had elements of a type and a non-type specimen. The real type specimen was still in its jacket and the final decision ruled that the skull remain in its jacket with a piece of VolarTM material to cushion the teeth. The ramus is not a type, however, it was placed in the same box because of the cast.