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Re-housing the Hymenoptera Nests Collection at the Natural History Museum, London

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The Hymenoptera (Ants, Bees & Wasps) nest collection at the Natural History Museum is one of the largest and most diverse in the world. The collection exceeds a thousand examples from all over the world. The collection is also very important historically.

The Nests built by Hymenoptera (wasps, bees and ants) are remarkable feats of construction. Nest structure is the outward expression of complex behaviour patterns, can be used as a taxonomic character and are significant in interpreting the evolution of social insects.

Before undertaking the re-housing project, I took every opportunity to view nest collections of other museums and institutes. All of the collections I saw were in a generally poor state of curation and conservation. It seems they have been a problem for many institutes but have never been a high enough priority to be dealt with properly. Nests are often fragile and irregular in size and shape so their transportation and storage can be extremely difficult. Until recently, the Hymenoptera nest collection at the Natural History Museum was in poor storage and lacked any organisation which restricted access and increased the risk of damage.



Figs 1-3: Disorganised and overcrowded storage of the nest collection before the re-housing project was undertaken.

After compiling a condition survey, the nests were individually re-housed in conservation grade boxes with glass tops or bespoke Correx® boxes. The boxes with glass tops were available within the Museum. They came in a variety of sizes and were used where a suitable size was available. This kept the cost of the project down considerably.

The glass-topped boxes were cleaned as necessary and the base was lined with Plastazote®, a cross-linked polyethylene foam. We used several thicknesses and grades of Plastazote in order to select the most appropriate for the type of nest. The plastazotes used for this project were a 10mm standard (LD18), a 5mm supersoft (LD24) and a 30mm rigid (HD30). All the Plastazote used was white to easily detect any evidence of new breakage or pest attack. A 5mm supersoft Plastazote base was cut exactly to fit the bottom of each box, and a new layer of Plastazote of the appropriate density and thickness was then cut to the same size. The nest was placed carefully on this layer and used to roughly mark the size and shape that needed to be cut. The Plastazote was cut along the nest outline leaving a perfectly sized hole in which it would eventually

rest. The remaining piece of Plastazote was next glued to the base Plastazote using a pH neutral PVA. This meant that the base of the nest rests on an inert, non-abrasive surface and the second layer gave it the support needed to keep it in place. This method allows normal handling of the box without serious risk of damage to the nest.

The same principle was used for the inside of the Correx boxes. Large sheets of white corrugated plastic (Correx) were used to make bespoke boxes. The boxes were made by measuring the nest dimensions, calculating the necessary box dimensions, and then cutting, scoring and folding the Correx to make a secure box. To fasten the boxes we used paper fasteners which were covered with linen tape. The cost of materials for this project was not great, partly because we used a number of boxes already available in the Museum. The corrugated plastic sheets, Plastazote, glue, paper fasteners and linen tape did not amount to a great deal for the size of the collection and the huge improvement the boxes have provided. The biggest cost was the time it took. Bespoke boxes undoubtedly save space which can be vital in a museum with a large, growing collection, but it does take a considerable amount of time.



Figs 4 & 5: Show the construction of the Correx boxes.

The new boxes and lids provide protection from pests and pollutants, such as dust, although they are not completely sealed. The housing is an added layer of protection for the specimen.

After the nest were re-housed they were digitally imaged and copies of the images then attached to the boxes to allow easy identification of a specimen within, This reduced the amount of handling of the specimen and ultimately the mechanical damage caused to these very delicate specimens. Each nest was databased to capture all the information on the specimen and any associated specimens with it in the accessions registers. The images and database information were combined and will soon be available on the Natural History Museum website.



This work now means that what was an underused, vulnerable collection is now a very useful resource with easy access. Improving the housing and care of this collection, in a manner befitting its scientific and historical importance, made it much easier to move to a new location as part of the recent move to a new building.