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What do you do with papered insect collections? A new storage system for the Odonata ‘papered’ collection at the Natural History Museum, London.

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Introduction

Insect papered collections have often been considered the least accessible specimens in any Entomology collection. Unset specimens have been placed, into non – archival quality newspaper or blotting paper triangles and square paper envelopes, hopefully with collecting and locality details and then placed chaotically into old cardboard cartons, biscuit tins and shoe boxes of similarly non - archival quality. Initially meant as temporary storage, the specimens might have been forgotten about or put to one side for some future date when time might be devoted to the relaxing and pinning of such specimens (Fig 1).



Fig. 1. Chaotic papered collection.

The Odonata (Dragonfly & Damselfly) papered collection at the Natural History Museum; London is not as described above! and consists of c. 37000 specimens including major donations from J. Cowley BMNH(E) 1968-70, F. Fraser BMNH(E)1963-234 & Richard Gambles BMNH(E)1991-3. Papered Odonata have a reputation for being difficult to relax and set, so the collection has been stored in paper envelopes in metal card file units (Fig 2). The vertically stored envelopes are easy to file and are a self indexed collection, under family, genus and species. Many Odonata collectors ‘paper’ their specimens as setting is time consuming and often takes up much space and they can see the important taxonomic characters without the need to set them. The main negative aspect of ‘papering’ is that the specimens can be prone to being crushed and broken fragments lost.

This collection is arranged in taxonomic order with unidentified accessions placed at the end of the series. This was data-based into our old Entomology Department ‘Paradox’ system and then migrated into the NHM wide KE EMu system.

A collection assessment of the Odonata showed the papered Odonata to be a conservation problem hotspot. The next step was to devise a method of storage using commercially available archival quality materials. Research and product testing led to the use of heat sealed BioQuip ‘Odonata Specimen Envelopes’ which



Fig. 2. Odonata papered collection in index card files.

are made of 1.25mm thick non-static, chemically inert, Polypropylene plastic envelopes 153 mm x 82 mm. (product number 1130DP) with supporting carrier backing card of Perma/Dur® Folder Stock from Preservation Equipment Ltd. We buy sheets of 406 x 508mm of the latter (Product number 750-1620) and cut these into 120 x 80mm rectangles to fit the envelopes. Label paper used is 100% rag from BioQuip with printed script using a Hewlett Packard 1100 LaserJet printer. Within the envelope we have a sandwich consisting of, from front to back, the specimen, the new label, the backing card and old labels. The heat sealer for the Polypropylene envelopes ensures that no fragments will be lost and we use the model supplied by Preservation Equipment Ltd. We had begun to store these into Archival quality buffered and acid free 1300 gm Perma/Dur® 'postcard storage' boxes from Preservation Equipment Ltd (product number 780-4612) in non pest-proof metal cupboards kept near the main collection but not directly associated with it (Figs 3 & 4).

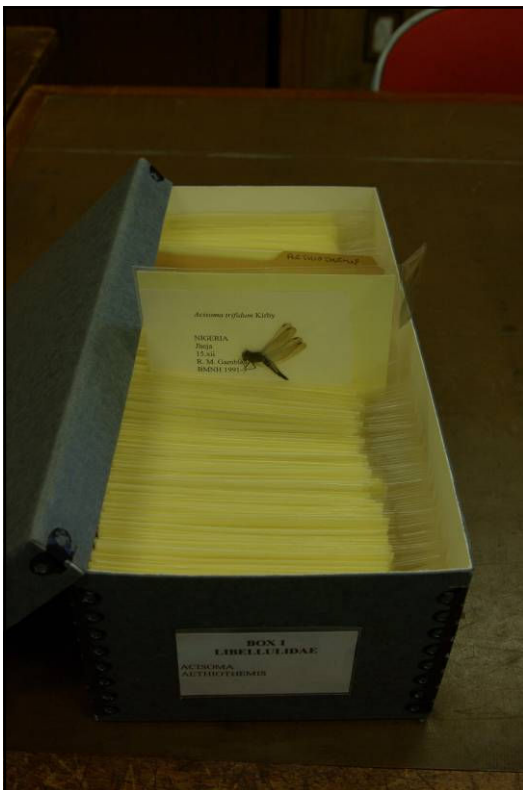


Fig. 3. In 'postcard storage' box.



Fig. 4. Storage in metal cupboard

With a directive to standardise the housing of specimens destined for migration into the new Darwin Centre phase 2 (DC2), the Odonata papered collection index card file units and metal cupboards would not be welcomed, so we looked for a new way of storing the Odonata papered material.

We have been standardising our Entomological collections storage over the past few years from a whole series of drawer sizes from old original constituent collections. There are now three standard sizes: 1. the 'main collection – Hill' sized drawers; 2. the 'accession - moth box' Lepidoptera drawers and 3. the large 'Rothschild' drawers, also used for Lepidoptera. Recently we have also been involved with the design of standard metal cabinets made for us by C & D (Sheet Metal) Engineering Ltd, to house the three families of drawers.

We took the 'main collection Hill' style drawer size and asked Stephenson Blake – Sheffield (part of Harry Spurr Ltd) to make us sample drawers to our design to fit the new cabinets being installed into DC2. The drawer is similar in design to our vertical microscope slide drawer with removable dividers and without a glass lid and having the same external dimension and internal side to side width of 438mm and 420mm front to back between the end panels with slots. The new design differs in having 53 mm high internal removable dividers and end panels which reach the same level as the top of the drawer. The envelopes are stored vertically as they are in the card file drawers and the boxes, the larger old paper envelopes fit in two rows and the new Polypropylene envelopes in three rows across the drawer front to back. The height of the filed envelopes protrude somewhat above the top of the drawer but do not exceed 110mm so that a loaded drawer will easily fit between two C & D type A cabinet drawer runners. Envelopes will not be packed in too densely to avoid crushing the specimens.

The drawers have three slots in the front and back drawer frame for the three 3mm wide removable dividers per drawer. The design includes two wooden outer side packer blocks to keep the envelopes protruding above the drawer from snagging the two empty unused C & D cabinet runners above, at 20mm in from the internal edge on each side (Fig 5).



Fig. 5. The new Papered Odonata collection drawer.

To house the larger old envelopes, we divided the internal width into two compartments with one central divider, the two runs being 193.5mm wide. The spare divider being kept until required, and to house the smaller Polypropylene envelopes, we divided the internal width into three compartments with two dividers at 1/3 and 2/3 across the width, the three runs being 128mm wide. I suggested 3 slots in front and back drawer frame so that the dividers can be shifted as the large old envelopes are replaced with the smaller preferred new Polypropylene ones. We can now house 18 of these new drawers per double backed C & D 'type A' cabinet, keeping every other drawer runner unoccupied.

We ordered 60 drawers to house the whole Odonata papered collection and an additional 30 to store small jars of Diptera material, so the design is useful for other purposes. The narrow width of the front and back of the drawer meant that the drawer knob would only be able to have a shallow hole for glue fixing knob reinforced with an angled fixing nail. However by using more than usual of the PVA glue, the knob should hold firm. Use of these compatible drawers can now enable us to bring together the whole dry Odonata collection in one series, for the first time in the collection's history (Fig 6).



Fig. 6. The new drawer in situ in new C & D Type A cabinet associated with main pinned collection drawer.

Acknowledgements

We wish to thank Howard Mendel (Head of Collections for Entomology at NHM) for helpful discussion and funding the drawer production and Richard Mangle of Stephenson Blake – Sheffield, Harry Spurr Ltd. for developing the samples and the manufacture of our new drawers.

List of suppliers

BioQuip Products, 2321 Gladwick Street, Rancho Dominguez, CA 90220, USA. Webpage at <http://www.bioquip.com/>

C & D (Sheet Metal) Engineering Ltd, Monarch Works, Station Road North, Belvedere, Kent, DA17 6JU. Webpage at <http://www.cdsheetmetal.com/>

Preservation Equipment Ltd, Vincens Road, Diss, Norfolk, IP22 4HQ, website at <http://www.preservationequipment.com/>

Stephenson Blake – Sheffield, part of Harry Spurr Ltd. (132-154 Harvest Lane, Sheffield, S3 8EF. email: rmangle@stephenson-blake.co.uk