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Undertaking an Effective Review of Natural History Collections

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Abstract

Understanding what museums have in their collections is vital to ensure that collections are used, researched and engaged with to their fullest potential. This paper outlines a detailed review of a large spirit collection at Plymouth City Museum and Art Gallery (PCMAG), with funding from the Museums Association *Effective Collections* programme. Different review methods are discussed including reviews that can be adapted for specific projects. PCMAG's review is discussed in detail with examples and a stage by stage process. The review resulted in the discovery of two type specimens, two co-types and several scientifically and historically important specimens. 1241 specimens have been highlighted for transfer to other museums. Transferring the specimens has enabled the curatorial staff to focus on conservation and research for the specimens retained at PCMAG.

The need for collection reviews

Museums across the world hold unique and amazing collections which have inspired visitors of all ages for over 100 years to visit their local museum (Asma, 2001). Only a small percentage of collections are on display at any one time, with the remaining in museum store rooms. Local authority museums may have natural history collections that can hold hundreds of thousands of specimens, and the national museums have collections numbering the millions. The numbers of specimens are awesome, but do museums know what they have and can they make the most of their collections?

In 2005, the Museums Association published the *Collections for the Future* report assessing how collections are used. The report found that many collections are underused, not very well understood and could potentially be more mobile (Wilkinson, 2005). To ensure more use of collections, three areas were highlighted; greater engagement using the collections; developing museum collections; and staffing in museums (Wilkinson, 2005). Developing museum collections has been high on the agenda for many museums as a result of this report, along with the subsequent publication of the Disposal Toolkit (MA, 2008a).

The term disposal can be defined as the full de-accessioning of an object through transfer, return to original donor, sale, or physical destruction. If disposal is carried out with disregard of current guidelines, it can have a very negative impact with the public (e.g. BBC, 2006; 2010; Guardian, 2006; Liverpool Echo, 2012). This subject has been the focus of debate across the museum sector (for further discussion see Davies, 2012). Disposal can be viewed as a method of rationalising existing collections in a way which is beneficial to the museum and the public. Through well-planned collection review projects, resulting disposals allow more focus, resources and use of the collections which remain in the museum (NMDC, 2003). Collection reviews additionally assist in understanding what gaps there might be in current collections, allowing focused development of future collection acquisition policies (Knell, 2004).

Costs of collections

There are costs associated with holding collections. It has been estimated that around 38% of a museum's operational costs are needed to retain objects in the collections (Lord, *et al.*, 1989). This percentage includes the curatorial work carried out on the objects (i.e. documentation, conservation, research, auditing) and the security (i.e. staffing, security systems, etc). Intangible costs increase this percentage to around 70% of a museum's annual budget (electricity, heating, administration, space, etc) (Lord *et al.*, 1989). These costs are of a greater concern when collections are not well used or understood (NMDC, 2003).

Museum store rooms have finite space and museums are continually growing their collections through new acquisitions (Merriman, 2007). The large number of objects in museum collections makes it difficult to review them as a whole. Small focused review projects examining parts of a collection to determine their

significance can highlight new information, and new uses, and can also result in rationalisation of the collections (Merriman, 2007).

Collection reviews

Several museums have developed new mechanisms to develop their collections to enhance their understanding of what they hold, and, in some cases, question why they are retaining it. One of the first serious attempts to review museum collections was a large project carried out in Australia aimed to determine the significance of collections and heritage objects. The *Significance* model uses four primary criteria, termed 'degree of significance', for the curator to examine the value of collections and individual objects; *historic, artistic or aesthetic, scientific or research potential, and social or spiritual* (HCC, 2001). Each degree of significance is evaluated against four more criteria; *provenance, rarity or representiveness, condition or completeness, interpretive capacity* (HCC, 2001). By examining objects closely looking at the relevance and *significance* allows the curator to understand and use their collections in new ways.

Glasgow Museums undertook a review focused on one area of their collections. A collections significance report was carried out for over 5000 art and social history objects (Hayes, 2008). The review demonstrated that these objects should be retained in the collections because they were significant to the heritage of the local area (Hayes, 2008). Significance of collections or individual objects may be common knowledge to current curators, so the benefit of these types of reviews is to assist with knowledge management for future staff. The review additionally highlights to the public what the museum holds and why, and are important appendices for funding applications.

University College, London (UCL) Museums carried out a complete review of their entire collections in 2007 (Dunn & Das, 2009). This large review examined the historical significance, potential for use and research, condition, security and documentation of all the objects in the UCL collections (Dunn & Das, 2009). A new and simple assessment tool was developed, the *UCL rubric*, which graded different assessment criteria against a review table. The assessment criteria included storage, security, environmental conditions, housing material, documentation, ownership, teaching, research, public engagement, historical connection to UCL, and the objects uniqueness (Dunn & Das, 2009). The *UCL Collections Review Toolkit* can be used and adapted to fit specific museum projects for any museum. The UCL review has enabled the curatorial staff to manage their collections in a more strategic way. Assessing the completed review table has created a better understanding of what is in the collections, identifies parts of the collections for future development and funding applications, and allows the collections to be the focus of teaching and research, and identifies priorities for documentation, storage and conservation needs (Dunn & Das, 2009).

Renaissance East Midlands developed a similar toolkit to the UCL toolkit and the Australian *Significance* model (MLA, 2010). The model uses a grid to determine the collections importance in a structured way, which is subsequently used to aid planning for future collections projects, use and interpretation (MLA, 2010). As well as identifying the significance of collections, and highlighting potential disposals, the review method can also demonstrate gaps in the collections where future collecting programmes can be focused.

The *New Light on Old Bones* project aimed to develop collections in two small museums in the North West (Chalk *et al.*, 2011). Subject specialists looked at the two natural history collections without a specialist curator and discovered links between the museums, with new stories and histories behind the specimens (Chalk *et al.*, 2011). Reviewers with the subject knowledge provide the opportunity for new information to be discovered, and empower the collections staff with new knowledge and confidence on how to use the collections to their full potential.

A large project in the North West, reviewed over 150,000 objects across 24 different museums (Cooper, 2011). This large review included different collection areas and subject specialist reviewers completed a thorough assessment across the sites. Five of the museums had natural history collections, and the reviewers identified several potential future partnership projects between these museums (Cooper, 2011). As was demonstrated with the *New Light on Old Bones* project, small local authority museums often have non-subject specialist curators and very limited resources. By discovering what museums have, increases partnership work between museums, which benefits the collections, the staff, and ultimately the museums themselves and the services they can offer (Cooper, 2011).

The Royal Albert Memorial Museum (RAMM), Exeter is currently undertaking a review of their entire collections. This review is using information from the museum database to examine the collections in greater

detail. Different collection areas (e.g.: Lepidoptera) are searched and the results constitute one review area. The curators subsequently go through each collection area with set questions to find out more about the collections' importance, documentation level, research potential, public engagement opportunities and historical significance (Gulliver, 2012, pers comm.). The review aims to discover more about the objects they hold and how they can be enjoyed by future generations (RAMM, 2012).

The models which have been developed can be adapted for a museum's own specific review project. The reader is advised to look at the different models outlined above in greater detail and determine the one that would be most beneficial to their own project. This paper further outlines the review method used by Plymouth City Museum and Art Gallery (PCMAG), adapted from the *UCL Collections Toolkit*, to review a large spirit collection.

An effective review

As a result of the findings in the *Collections for the Future* report, the Museums Association established the *Effective Collections* programme providing an opportunity for museums to apply for grants to develop their collections by understanding what they hold (Cross, 2009). The main aims of the two grant schemes were to assist in reviewing the collections with expert help and increase use through loans and disposal (Cross, 2009). Two strands of funding were open to applications:

- **The Main Fund:** Applicants could apply for up to £10,000 to review their collections to enhance their use.
- **Special Project Fund:** Grants of up to £25,000 could be applied for certain projects to increase loans and transfers.

In January 2009 PCMAG was successful in the Main Fund Application to undertake a complete review of the spirit preserved collection with the following aims:

- Increase skills for curatorial staff (none had a background in marine biology).
- Work with specialist reviewers to assess the collection and make recommendations.
- Improve physical access to the collections.
- Promote the collections to marine science organisations in Plymouth.
- Assess the collection in line with PCMAG's Acquisition and Disposal Policy and highlight specimens for potential disposal.

The funding provided support for developing and implementing the project. A small proportion of the grant was allocated to a project coach who assisted with the work plan and ensuring the goals were achievable and on target. The remainder of the grant was towards:

- £200 - skill sharing visits to Natural History Museum and Oxford University Museum of Natural History.
- £800 - reviewer travel and accommodation expenses, and time
- £2500 - conservation of specimens
- £500 - developing education resources
- £500 - chemical disposal
- £1500 – developing packaging for safe transport of specimens for future loans.
- £2000 – transport costs for transfers

The Old Spirit Collection

PCMAG opened in 1910 for the inspiration and education for the people of Plymouth. As well as many other zoological specimens, the museum amassed approximately 500 spirit preserved specimens prior to opening (Fothergill, 2006, pers comm.). This collection is referred to as the 'old spirit collection' and mainly contains marine specimens in square battery jars for display purpose, which were prepared by the Marine Biological Association (MBA). The old spirit collection includes a number of foreign specimens such as reptiles, amphibians and some beautiful dissections prepared by the Czech naturalist Václav Frič in the late 1800s. In July 2000, PCMAG received a large transfer of over 5,000 spirit preserved specimens from the MBA.

The Marine Biological Association of the United Kingdom

The late 1800s saw many naturalists concerned about the lack of research into the seas and the fish stocks (Southward & Roberts, 1989). This led to a need for an organisation to focus on the study of living marine animals and their physiology as well as researching the fish populations in the seas (Southward & Roberts, 1989). In 1884, the Royal Society committee announced the foundation of the Marine Biological Association (MBA, 1887). Although Thomas Henry Huxley saw no threat to fish stocks in the oceans, he was later persuaded to support the new Association and was elected the first president (Bibby, 1959; Desmond, 1997; Varley, 2003). The new building was built on Plymouth Hoe, and the MBA opened in 1888 (MBA, 1888).

In 1887 a public appeal was made for books and periodicals to support the scientists and the research at the MBA (Southward & Roberts, 1989). Founded, in 1887, and opened in 1888, the National Marine Biological Library (NMBL) holds runs of periodicals, scientific reports, and scientific books. Important historical archives are held at the NMBL which includes material relating to historical scientific expeditions, along with correspondence, notes and illustrations from ex-MBA staff.

The MBA continues to research all aspects of marine life from fish biology to plankton distribution. Since the opening of the MBA, scientists have been preserving many of the specimens they have been researching, and in 100 years the MBA amassed a collection of over 5,000 specimens (fig. 1). This includes specimens from trawls, expeditions, individual researchers and specimens cited in scientific publications. The majority of the collection was amassed to create an encyclopaedic collection of the fauna from around the Plymouth coast known and published as the Plymouth Marine Fauna (MBA, 1904; 1931; 1957).



Fig. 1. The type collection of the fauna and flora at the MBA Laboratory, Plymouth. Image reproduced with permission from the MBA archive collection.

A big transfer

The large spirit collection had been stored off-site from the main MBA building since the early 1990s (Nobel, 2012, pers comm.). Several attempted break-ins and vandalism on the stores, forced the MBA council to find new accommodation for the collection (MBA, 1996). With no available space in the main

MBA building, the MBA and PCMAG discussed the full transfer of the spirit collection to the museum, which was agreed in 2000.

Many jars which were identified by the MBA as not historically or scientifically important were disposed of in a skip (Mavin, 2000). Staff at PCMAG rescued some of these specimens resulting in the transfer including several specimens with unclear origin, poor preservation and little obvious data (Fothergill, 2006, pers comm.). These specimens were partly rescued as re-usable ground glass jars, but also as potential equivalents to the specimens already in the museum's collections (originally sourced from the MBA in the late 1800s and early 1900s). Where specimens or jars were thought to have further potential, and due to the important history of the MBA spirit collection known by PCMAG staff, it was decided to retain as much of the original collection as possible until further research could be carried out. Accompanying the collection were related archive material and library books, which were moved to the NMBL (Mavin, 2000).

The jars were transferred to PCMAG with the original old glass-door wooden cabinets, with glass doors. The cabinets were dirty, and mouldy, with broken locks and broken glass panels. These cabinets proved impractical to allow easy use of the collections. New shelving was purchased to allow easier access, with deep red Gratnell trays to hold the jars (fig. 2). Gratnell trays were chosen as they will contain any leaking fluid and specimens can be easily reached and viewed by taking out the whole tray, rather than having to remove layers of jars to reach a specimen at the back of the shelf. During the refurbishment of the store, all the specimens were removed and displayed in a temporary exhibition *In a Pickle*. This provided the opportunity to carry out basic documentation on all the specimens. The entire collection was accessioned, photographed, recorded, cleaned and returned to the new shelving in taxonomic order.



Fig. 2. Above, the old wooden cabinets holding the spirit specimens. Right, the new open shelving with red Gratnell trays.



The review

A four stage process was undertaken to complete the review from beginning to end (figs 3, 4, 6 & 7). Stages 2-4 were developed as a result of the reviewers recommendations. The flow charts can be used as guidance for a museum to create similar processes based on their own review results.

PCMAG sought two reviewers to go through the entire spirit collections; a Professor of Marine Biology and a Collections Manager of Zoology at a national museum. Two reviewers were chosen to combine expertise and knowledge allowing the review to be as comprehensive as possible. The professor had a wealth of knowledge about the local scientists and fauna in Plymouth and the collections manager understood the aims and needs of the museum.

The reviewers were booked in together for two full days with the collection. They each received a project brief, outlining the aims of the review to; identify the scientific value of the specimens; assess the subcollections and their relevance to Plymouth; identify potential loans or transfers and submit a written report with recommendations (for full brief see Appendix 1.)

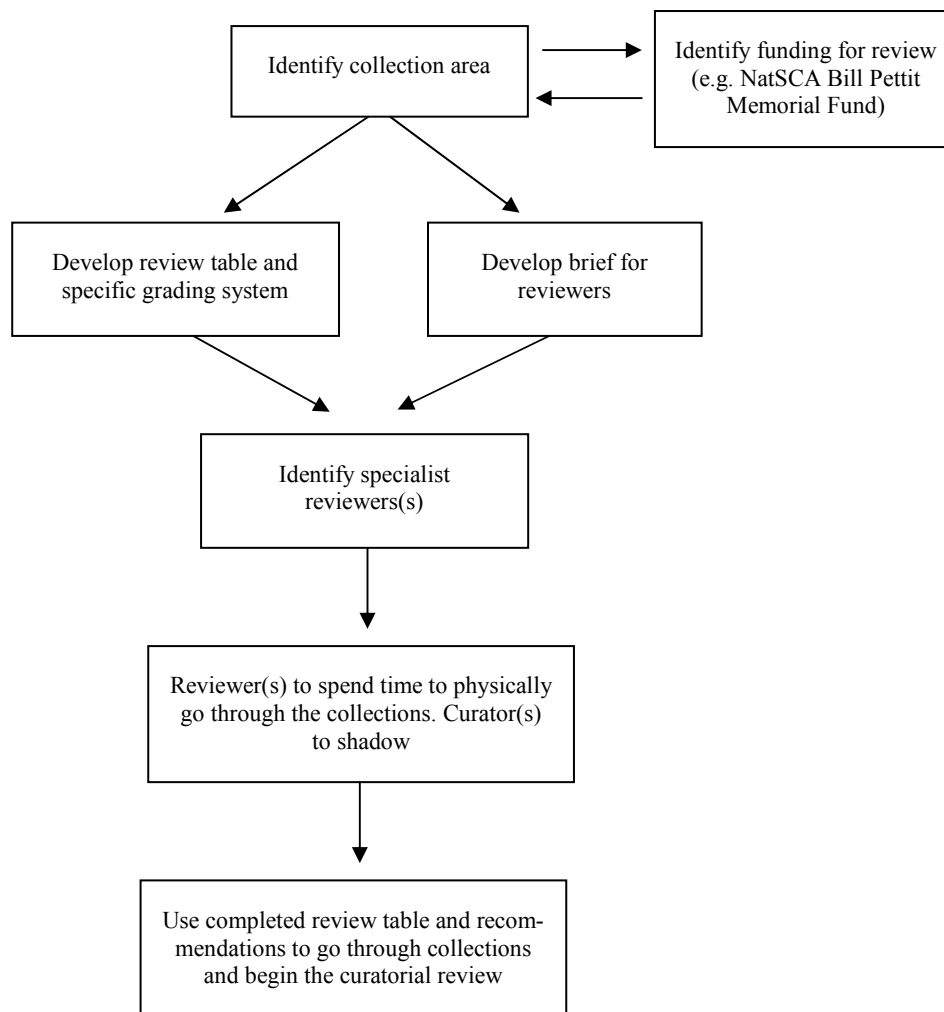


Fig. 3. Stage 1 of the review process highlighting steps needed to prepare for the reviewers.

PCMAG review

Using the *UCL Collections Review Toolkit* as a template, PCMAG developed a review table and grading system to fit this project. The review table was designed to allow the reviewers to assess several criteria relating specifically to the spirit preserved collections. The criteria examined were the jar and content condition, the documentation information, the potential use (research, teaching, public engagement), and the significance (historical, rarity, distribution and relevance to Plymouth). These criteria were chosen to assist in determining the significance of the specimens to Plymouth and their potential use for PCMAG (for example review table see Appendix 2.)

A pre-set grading score was written for each criterion to allow the reviewers to assess what PCMAG wanted to learn about the collection (Table 1). The review table was completed by the reviewers choosing one jar in the tray and grading this against the criteria. There were additional fields for notes on the review table to add extra information about other jars in the tray they were assessing.

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
Potential use: public engagement	No use	Specimen not visible	Difficult to use (complex information required to interpret)	OK visual impact (reasonable size or able to magnify) AND/OR easy to interpret	Good visual impact AND easy to interpret (common species, relevant to Plymouth, unusual story etc)

Table 1. An example of the pre-set grading score for public engagement. The full grading scores can be seen in Appendix 3.

Review recommendations

Although the reviewers were from different professional backgrounds, the written report and final recommendations from the review were similar:

- PCMAG to highlight the specimens stored in formalin
- Highlighted several important specimens in need of immediate remedial conservation
- Reorganise the collection into locality order to see what was from where
- Dispose of specimens with no data and transfer specimens beyond the local area

The completed table and recommendations provided the information to implement Stage 2 of the review process (fig. 4).

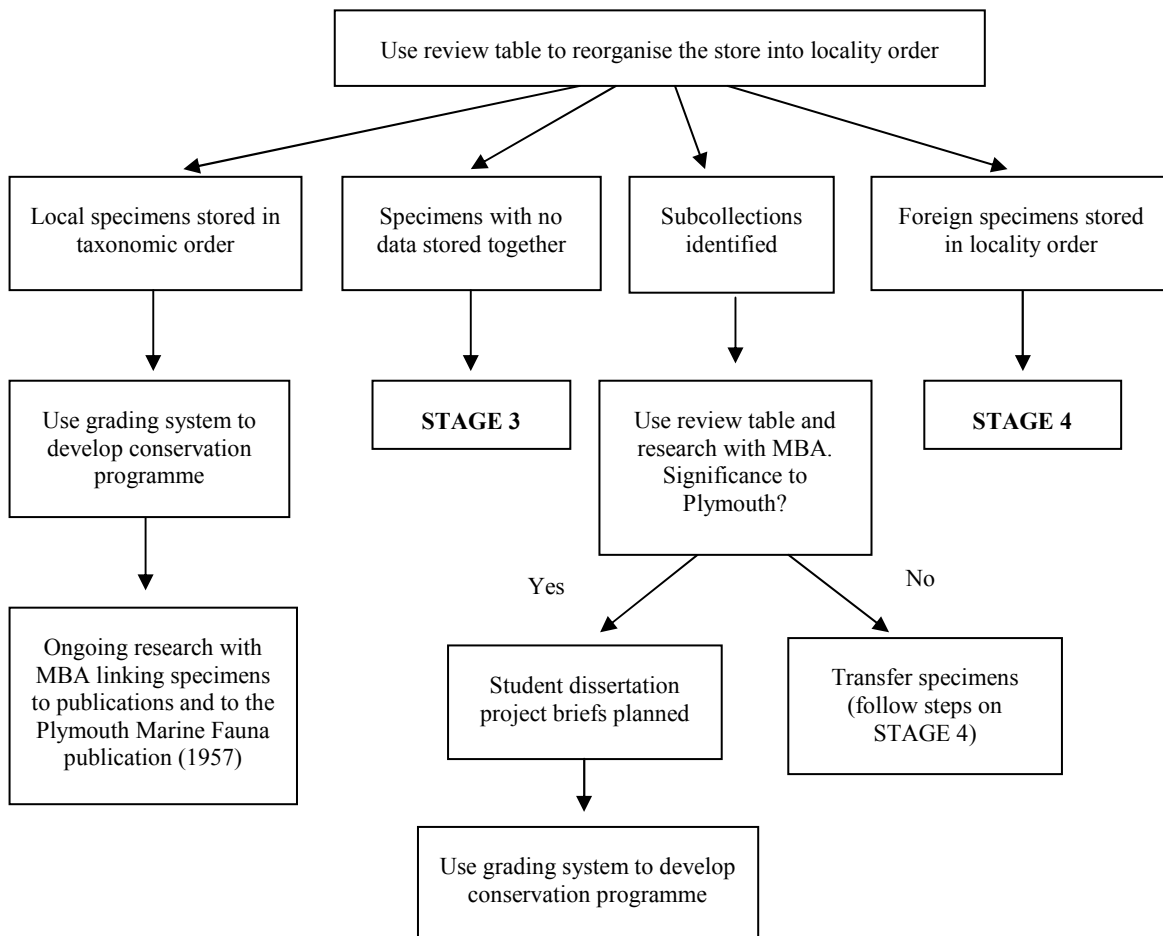


Fig. 4. Stage 2 of the review process. The recommendations highlighted the need to reorganise the store into locality order. This allowed for the specimens without data to be stored together.

Reorganising the store

Each jar was checked and reorganised into locality order. More than half of the specimens were from Plymouth and these were stored together in taxonomic order. Specimens from other localities included Cornwall, the North Sea, France, Chile and India. The review table highlighted several specimens in need of conservation and a conservation programme was developed.

Unknown in the collections previously, the review discovered the type specimens of *Amalosoma eddystonense* (Stephen, 1956) and *Hyperia tauriformis* (Bate & Westwood, 1869) and the co-types of the sea squirts, *Polycitor searli* (Knott, 1952) and *Lissoclinum cupuliferum* (Knott, 1952). *A. eddystonense*, *P. searli*, and *L. cupuliferum* were highlighted by the review and have been subsequently conserved (fig. 5).



Fig. 5. The type specimen of *Amalosoma eddystonense* (Stephen, 1956) and the co-types *Polycitor searli* (Knott, 1952) and *Lissoclinum cupuliferum* (Knott, 1952) as discovered in the review (top row). Remedial conservation work carried out on the specimens has ensured their future preservation (bottom row).

The reorganisation of the collection allowed the subcollections to be stored together, which were originally dispersed throughout the store. A conservation programme has been developed for the subcollections as a result of the review table. The table additionally highlighted that all of the subcollections will benefit from further research, and project briefs for student dissertations have been developed as a result.

The subcollections include:

- Bay of Biscay (77 jars)
- Challenger (1970s Exp.) (69 jars)
- Crawshay Fauna of the English Channel (183 jars)
- H.M.S. Research (15 jars)
- Holt and Brown Medusae Collection (61 jars)
- Kitching's Gully (367 jars)
- Marie Lebour Mollusc Collection (81 jars)
- Norman Arthur Holmes Echinoderm Collection (170 jars)
- S. S. Huxley (6 jars)
- S. S. Salpa (8 jars)
- S. T. Albatros (26 jars)
- S. T. Myra (1 jar)
- S. T. Plover (2 jars)
- S. T. Shamrock (2 jars)
- Trawler Prince (3 jars)
- Zoological Station, Naples (15 jars)

Approximately 500 jars with no associated data were stored together. These specimens were highlighted for disposal; through transfer or for education use by developing resin casts (Stage 3 of the review, fig. 6).

Assessing potential disposals

Before disposing of any specimens, it is recommended to review the selected disposal as outlined in the Code of Ethics (MA, 2008b) and the Disposal Toolkit (MA, 2008a). PCMAG contacted staff at the MBA and the NMBL for additional support from local marine science experts to examine the specimens highlighted for disposal. The reviewers included the ex-curator of the MBA spirit collection at the MBA, two colleagues from the NMBL, and two fish experts working at the MBA. These additional external reviewers were approached to examine the potential disposals; they had the knowledge of the history of the MBA, were able link the handwriting in the jars to historical collectors, and two were collectors of some of the specimens in the collection.

Within the trays labeled 'dispose' there were approximately 200 jars with 'Plymouth Marine Laboratory' labels followed by a species name written in pencil with no other information in the jar (fig. 5). In the early 1970s, a placement student had been carrying out remedial conservation on many of the specimens. They added new labels to each of the jars, but disposed of the original labels (Southward, 2012, pers comm.). However, The MBA published a list of the known species found off the waters of Plymouth (MBA, 1904; 1931; 1957). To supplement the publications, the MBA had been attempting to complete a full reference collection of the marine species off Plymouth (Southward, 2012, pers comm.). This collection was referred to by the MBA as the 'Type specimen collection of marine fauna' (Mavin, 2000). These were not type specimens in the usual sense; they were figured and cited specimens of the Plymouth Marine Fauna (MBA, 1904; 1931; 1957). It was recommended to check the species in each of the jars against the Plymouth Marine Fauna (MBA, 1957); if the species was listed, it is more than likely to have been collected from the Plymouth area (Southward, 2012, pers comm.).

Of the remaining jars highlighted for disposal, 87, which contained specimens in good condition not requiring a large amount of conservation work, were removed and stored together with the aim of being used for display and loans to other museums. 17 jars were removed and stored together for education use (examples of different marine Phyla to be set in resin for a secondary school for pupils to see up close). The specimens for display and education were checked by the independent five reviewers to verify the decision.

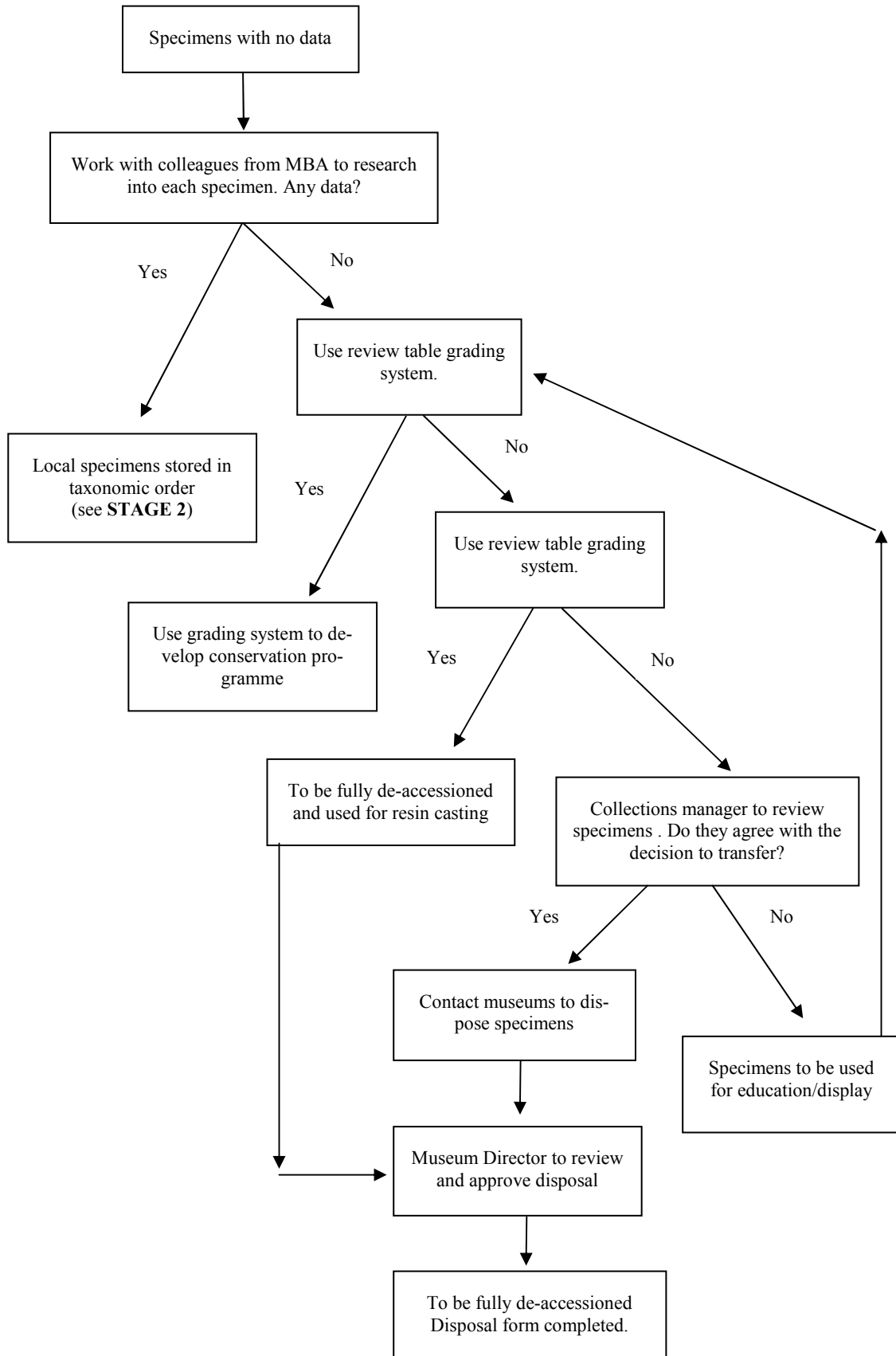


Fig. 6. Stage 3 of the review process, outlining the steps taken towards disposal of specimens with no data.

Disposals

103 jars were identified for disposal all of which had no associated data and were in very poor condition. The Disposal Toolkit recommends the appropriate steps to be taken for undertaking any disposal, in the following order (MA, 2008a):

1. Offer as a gift or transfer
2. Return to the donor
3. Sale to another museum
4. Transfer outside the public domain
5. Sale outside the public domain
6. Recycle the item
7. Destruction of the item

Each method is not without its problems if it is not carried out ethically. Transfer of specimens to another museum is the most ethical method of disposal. This method moves specimens to museums where they are more relevant to their collections and local community. In 2011, two taxidermy collections which were held at the Botanic Gardens Museum, Merseyside were considered for disposal by Sefton Council (Atkinson, 2011). Although there was a keen interest by Liverpool Museums to take parts of the collection, the specimens were transferred to the British Historical Taxidermy Society Charitable Trust (Formby Times, 2012; Liverpool Echo, 2012). The process of this transfer neglected to advertise to the museum sector as a whole and did not seek professional advice throughout the process (Merriman, 2012).

The method of disposal which can cause national media coverage is the sale of collections. The sale of an LS Lowry Painting at Bury Museum and Art Gallery for £1.4 million was to assist with budget deficits within the council in 2006 and resulted in the museums' expulsion from the Museums Association (MA, 2006). This story was covered in national news (BBC 2006; Guardian, 2006). A large collection of taxidermy was put up for auction by Northampton Borough Council (BBC, 2010). Although a catalogue for the auction was published, the author is unaware of the outcome of the sale (BHT, 2011).

PCMAG sought to dispose of the items through gift or transfer (fig. 7). The reviewers from the MBA and the NMBL examined each jar and all independently agreed that these specimens were suitable for disposal. The collections manager at PCMAG approved the selected specimens. The research carried out on the specimens by the curator and the reviewers involved searching old archives to find handwriting matches, log book records from trawls around the period and checking any species data with the Plymouth Marine Fauna (MBA, 1957). The selected jars for disposal had very little data with them, and often no label at all. The research carried out by the expert reviewers from the MBA covered all known avenues, outlined above. There may never be enough research into a specimen, but there is a point when the curator can make an informed decision with assistance from outside experts. All disposals are presented to the museum director for final approval.

The MA website *Find an Object* holds a database of objects which museums are offering for disposal (see MA, 2012). The group of 103 jars were listed on the database on 31 October 2011. A note was also posted on the NatSCA JISC mail offering the disposals to interested museums. Cambridge University showed an interest in the 20 battery jars. The National Museum Wales, Cardiff agreed to take the remaining 83 jars.

Transfers

The preservation of specimens for future generations is one of the key functions of a museum. If specimens are not being used and would benefit by being transfer to another museum, this should be considered (NMDC, 2003). The reorganisation of the spirit collection highlighted specimens which are outside of the PCMAG's current collecting policy and may benefit from being transferred (PCMAG, 2012). Due to their provenance, these specimens are unlikely to be used to their fullest potential, so transfer to another museum ensures that they will be used (NMDC, 2003). The following localities were highlighted for transfer to museums where the local community will benefit:

- Bristol Channel (2 jars)
- Essex (3 jars)
- International localities (228 jars)
- Norwich and the North Sea (26 jars)
- Scotland (52 jars)

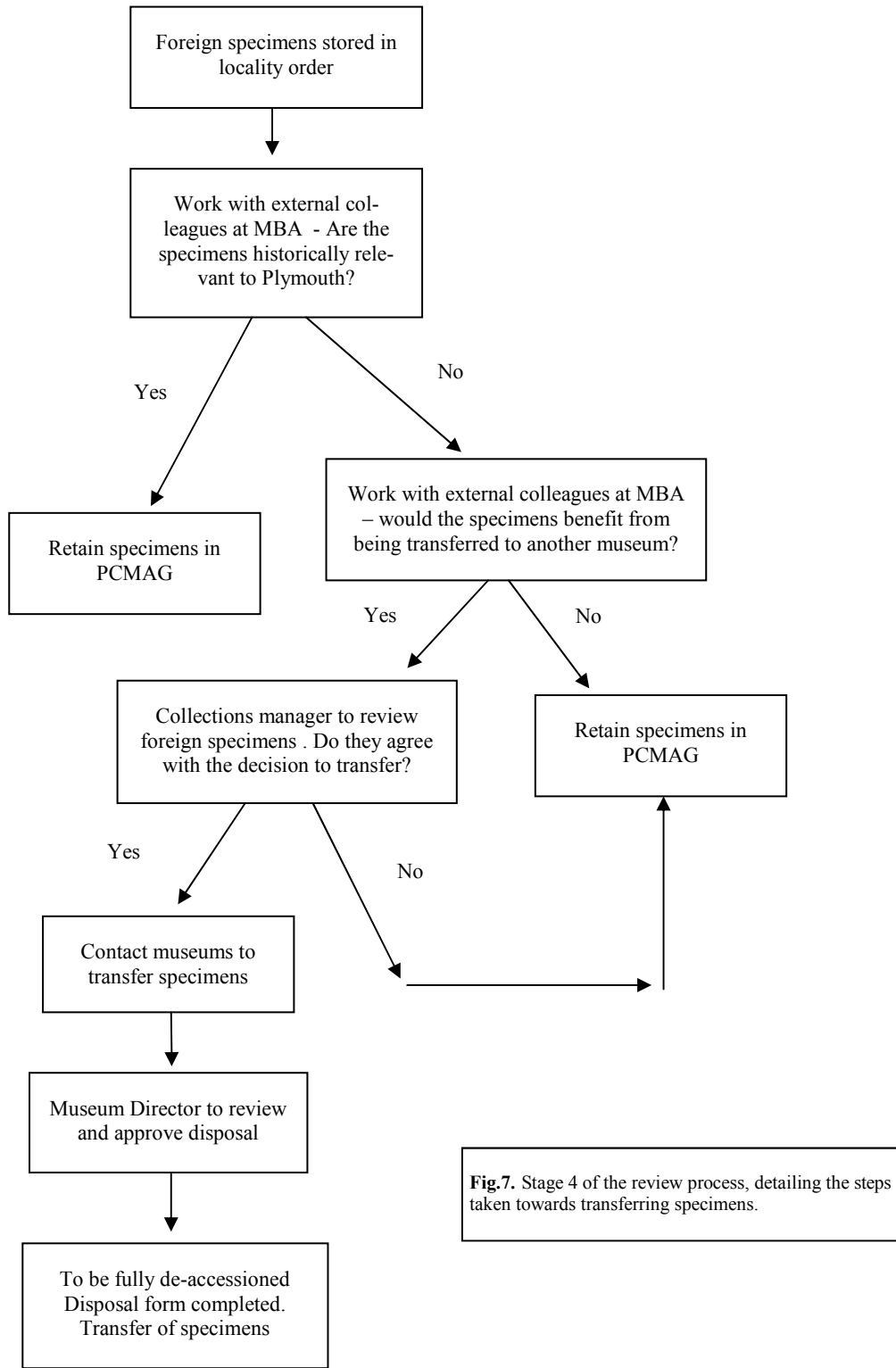


Fig.7. Stage 4 of the review process, detailing the steps taken towards transferring specimens.

Stage 4 of the review process is shown above, in fig. 7. The five expert reviewers from the MBA thoroughly checked each specimen and carried out research into the collectors. They independently agreed that these specimens would be used more if transferred to another museum. Not all specimens from international localities were transferred; due to their historical and scientific importance, and relevance to Plymouth, the reviewers recommended that the specimens from the Zoological Station Naples, and the Terra Nova Expedition, 1910, should be retained in PCMAG’s collections.

Full details of specimens which were disposed of have been recorded, including photographs of the jars and transcriptions of any information on the labels. The database has been updated with the image and any additional information and a copy of the Disposal Form attached to the specimen record. This information is important for future enquiries and future curators to understand what has been transferred to where.

It is important to ensure museums are aware of what they are disposing and to seek independent expert advice before disposing of items. Within the collection were 829 microscope slides from the MBA, which were highlighted for transfer to an interested museum. After consultation with colleagues at the NMBL, it was decided that the microscope slides would benefit from being transferred back to the MBA. Without consultation, this large microscope slide collection could have been transferred to another museum removing the local significance of the collection.

Summary

Collection reviews generate a greater understanding of the significance of objects in the stores. A collection may be large with only a small percentage of it being used or understood. Undertaking a review discovers new information about objects and provides the confidence to rationalise collections where necessary.

Using the methods outlined above, the review of the spirit collections at PCMAG has resulted in several positive outcomes. Subject specialist reviewers have enabled the curatorial staff to learn valuable information about the species, the collectors and the localities; resulting in new contacts and research projects with colleagues at the MBA and NMBL. As well as discovering historically important specimens, previously lost type and co-type specimens have been found. Most importantly, PCMAG now know what is held in the collections and can develop future projects with this new knowledge.

Examining other museum review methods is important to see which one is best suited for your project. Using the *UCL Collection Review Toolkit* worked for PCMAG to assess several criteria and grade these. The short timescale of the reviewers prevented individual jars to be examined. However, the benefit of the expert reviewers was their enthusiasm for the collections, and they did make numerous additional notes regarding other jars in the tray, even though they were only grading one jar.

The completed review table clearly illustrated specimens with poor documentation, little teaching and display potential and no significance to Plymouth. Planning the different review stages allowed specimens to be critically checked before transferring them to another museum. Several specimens were noted by the reviewers as not suitable for disposal (e.g. the microscope slides, and specimens from the Zoological Station Naples, and the Terra Nova Expedition, 1910).

Undertaking disposals requires understanding of the objects and their significance to the museum. Collection review projects increase the knowledge about the objects and provide the curator with confidence to determine potential disposals. The Museums Association *Disposal Toolkit* should be followed when carrying out disposals. All disposals in this project were checked by five external experts from the MBA, the collections manager and finally the director of PCMAG.

Transferring specimens which have no significance to the museum ensures that resources are spent on developing, promoting and using the collection which remains. The receiving museum benefits by adding new specimens to their collections which have a greater significance to their museum and their local community.

References

- Asma, S., T. 2001. *Stuffed Animals and Pickled Heads. The Culture and Evolution of Natural History Museums*. Oxford University Press. Oxford. pp.3-9.
- Atkinson, R. 2011. Future of two taxidermy collections is in jeopardy. *Museums Journal*. Issue 111(11): 7.
- Bibby, C. 1959. T.H. Huxley. *Scientist, Humanist and Educator*. Watts. London. p.189.
- British Broadcasting Corporation. 2006. Lowry sale council faces auction. *BBC News*. <http://news.bbc.co.uk/1/hi/england/manchester/6083426.stm>. Viewed 10 June 2012.
- British Broadcasting Corporation. 2010. Council in Northamptonshire to auction taxidermy collections. *BBC News*. <http://www.bbc.co.uk/news/uk-england-northamptonshire-11097146>. Viewed 10 June 2012.
- British Historical Taxidermy. 2011. Taxidermy Book Shelf. <http://www.britishhistoricaltaxidermy.co.uk/books/catauction.html>. Viewed 8 Aug 2012.

- Chalk, H., *et al.* 2011. *New Light on Old Bones*. MLA Renaissance North West. http://newlightmanchester.files.wordpress.com/2011/04/nlob_final_lores.pdf Viewed 10th July 2012.
- Cooper, S. 2011. *Revisiting Collections: Regionally dispersed collections in the North West*. MLA Renaissance North West. <http://www.museumsassociation.org/download?id=273073>. Viewed 11th June 2012.
- Cross, S. 2009. *Effective Collections Programme Prospectus*. Museums Association. <http://www.museumsassociation.org/download?id=14112>. Viewed 26th Sept 2009
- Davies, P (Ed). 2012. *Museums and the Disposals Debate*. Museums Etc.
- Desmond, A. 1997. *Huxley: Evolution's High Priest*. Michael Joseph, London. p.151.
- Dunn, J., & Das, S. 2009. *The UCL Collections Review Toolkit*. UCL. http://www.ucl.ac.uk/museums/research/review/documents/CR_Toolkit_Final. Viewed 14 June 2011.
- Formby Times. 2012. Review called after taxidermy collection leave Sefton. <http://www.formbytimes.co.uk/news/formby-news/2012/06/19/review-called-after-taxidermy-collections-leave-sefton-66401-31207602/>. Viewed 31 July 2012.
- Guardian. 2006. Sold: One Lowry. For all the wrong reasons. <http://www.guardian.co.uk/artanddesign/artblog/2006/nov/17/lowrytobesold>. Viewed 11 July 2012.
- Hayes, F. 2008. *Collections Significance Report: Glasgow History: People and Places*. Glasgow Museums. http://collections.glasgowmuseums.com/media/glasgow_history_people_and_places_significance_report.pdf. Viewed 10th April 2012.
- Heritage Collections Council. 2001. *Significance: A guide to assessing the significance of cultural heritage objects and Collections*. Commonwealth of Australia. http://www.collectionsaustralia.net/sector_info_item/5. Viewed 20 June 2012.
- Knell, S.J. 2004. *Museums and the future of collecting*. 2nd edition. Ashgate. Hampshire. p.17
- Liverpool Echo. 2012. Sefton Council to give away Botanic Gardens Museum exhibits. <http://www.liverpoolecho.co.uk/liverpool-news/local-news/2012/04/19/sefton-council-to-give-away-botanic-gardens-museum-exhibits-100252-30791201/>. Viewed 31 July 2012.
- Lord, B., *et al.*, 1989. *The Cost of Collecting. Collection Management in UK Museums*. Her Majesty's Stationary Office. London. p.xxiii.
- Marine Biological Association. 1887. The history of the foundation of the Marine Biological Association of the United Kingdom. *Journal of the Marine Biological Association of the UK*. 1(Old Series): 17-39.
- Marine Biological Association. 1888. Opening of the Marine Biological Laboratory. *Journal of the Marine Biological Association of the UK*. 1(Old series): 125-141.
- Marine Biological Association. 1904. Plymouth Marine Invertebrate Fauna. Compiled from the Records of the Laboratory of the Marine Biological Association. *Journal of the Marine Biological Association of the United Kingdom*. 7(2): 155-298.
- Marine Biological Association. 1931. *Plymouth Marine Fauna*. 2nd edition. Compiled from the Records of the Laboratory of the Marine Biological Association of the United Kingdom. 2nd edition. Marine Biological Association of the United Kingdom. Plymouth. pp.1-371.
- Marine Biological Association. 1957. *Plymouth Marine Fauna*. 3rd edition. Compiled from the Records of the Laboratory of the Marine Biological Association of the United Kingdom. 3rd edition. Marine Biological Association of the United Kingdom. Plymouth. pp.1-457.
- Marine Biological Association. 1996. The Citadel Hill Laboratory. *MBA Annual Report*. Plymouth: Marine Biological Association. Pp 89.
- Merriman, N. 2007. A sustainable future for collecting? *NatSCA News* 12: 27-32.
- Merriman, N. 2012. A Report to the Museums Association on the Transfer of Taxidermy Collections from Sefton Borough Council to the British Historical Taxidermy Trust. <http://www.museumsassociation.org/download?id=864940>. Viewed 2 October 2012.
- Mavin, J. 2000. The Citadel Hill building refurbishment. *MBA Annual Report, 116th Year*. Plymouth: Marine Biological Association. Pp 86.
- Museums Association. 2006. *MA concerned by museums' plan to sell art works*. <http://www.museumsassociation.org/news/12164>. Viewed 30 March 2012
- Museums Association. 2008a. Disposal Toolkit. Guidelines for Museums. Museums Association. <http://www.museumsassociation.org/collections/disposal-toolkit-and-training>. Viewed 3 September 2011.
- Museums Association. 2008b. *Code of Ethics for Museums. Ethical principles for all who work for or govern museums in the UK*. Museums Association. <http://www.museumsassociation.org/download?id=15717>. Viewed 10 July 2009.

- Museums Association. 2012. Find an Object. <http://www.museumsassociation.org/collections/find-an-object>. Viewed 26 October 2011.
- National Museum Directors Conference. 2003. *Too much stuff? Disposal from museums*. The National Museums Directors Conference. http://www.nationalmuseums.org.uk/media/documents/publications/too_much_stuff.pdf. Viewed 21 Feb 2012.
- Plymouth City Museum and Art Gallery. 2012. Collections Policy. <http://www.plymouth.gov.uk/museumcollections.htm>. Viewed 10 Feb 2012.
- Royal Albert Memorial Museum. 2012. *Collections Review*. Royal Albert Memorial Museum, Exeter. <http://www.rammuseum.org.uk/collections/collections-review>. Viewed 31 July 2012.
- Southward, A., J., & Roberts, E., K. 1989. One hundred years of marine research at Plymouth. *Journal of the Marine Biological Association*. 67: 465-506.
- Varley, A. 2003. *Archives Collection*. Marine Biological Association. <http://www.mba.ac.uk/nmbi/archives/introduction.htm>. Viewed 29 March 2012.
- Wilkinson, H. 2005. *Collections for the Future*. Museums Association. <http://www.museumsassociation.org/download?id=11121>. Viewed 6th July 2009.

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Appendix 1. Excerpt from a Brief to two specialist reviewers to assess the spirit preserved collections.

Collection Review: Plymouth Marine Fauna Collection **Plymouth City Museum and Art Gallery (PCMAG)**

Scope of work:

1. Review the current content, condition, potential use and significance of the Plymouth Marine Fauna collection held at Plymouth City Museum & Art Gallery according to the attached “collections review framework”.
2. Produce & submit a report, with clear recommendations, based on collection content, and focusing on sub-collections or series within the main collection and its significance to Plymouth.
3. To complete the review & submit the written report by January 2011 as part of a funding agreement (through Museums Association: Effective Collections programme).
4. Submit a single invoice for the work carried out. To include: travel, accommodation, subsistence and time.

Background details

The collection comprises approx 4000 jars which contain single or multiple specimens preserved in formalin solution (approx 1000 jars) and 70% IMS (approx 3000 jars).

A vast majority of the Marine Fauna collection was donated to PCMAG in 2000, from the Marine Biological Association (MBA). The collection was transferred as part of a ‘rescue’ process, and included a number of specimens of unclear origin, poor preservation and little obvious data.

Sub-collections transferred to PCMAG, as part of this process, included specimens from the Irish Sea, Naples and specific scientific surveys.

The MBA hold detailed records on parts of the collection (i.e. sub-collections within the main collection). This can be researched at a future date, if a sub-collection is highlighted for disposal/transfer.

Details of the work to be undertaken

Plymouth City Museum & Art Gallery will provide access to:

- appropriate reference material
- specimens & any necessary equipment
- images of specimens if required
- museum’s collection database
- additional assistance (staff & volunteers)
- personal protective equipment (PPE)
- spill kits
- appropriate risk assessments

The “assessor” will be expected to:

- Spend 2 days reviewing the Plymouth Marine Fauna Collection: assessing condition, potential for use and relevance to Plymouth according to the attached “collections review framework”.
- Produce a written report with recommendations including:
 - o 3 key target series/groups that require urgent conservation
 - o 3 key series/groups that would benefit from disposal (i.e. transfer to other more relevant museums, use of specimens for educational purpose, or actual physical disposal).
- Provide clear reasons for their recommendations
- Carry out the work in confidence
- Comply with directions of the museum staff in relation to health & safety at work
- Provide the written report in 2000-2003 MSWord format (one printed version, and one electronic version)
- Submit and invoice once the report has been completed for payment

Points of contact:

Project lead: [name] XXXXX XXXXX
 [position] XXXXX XXXXX
 Issues: Access / Financial / Contractual / Background Information
 Contact details: [email] XXXXXXXXXXXX
 [tel] XXXXXXXXXXXX

[name] XXXXX XXXXX
 [position] XXXXX XXXXX
 Issues: Health & Safety / Logistical & Financial Support
 Contact details: [email] XXXXXXXXXXXX
 [tel] XXXXXXXXXXXX

Appendix 2. The review table used for the review of the entire spirit preserved collections at PCMAG.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Collection:						Store name:									
2	Assessor:						Bay:									
3	Date:															
4	Audit ID	Tray / unit	no. of specimens	content condition	jar condition	documentation: id label	documentation: collection data	documentation: additional info	potential use: teaching	potential use: research	potential use: public engagement	significance: historical	significance: rarity	significance: distribution	relevance to Plymouth	Notes
5																
6																
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11																
12																

Appendix 3. The grading system developed for the review. This review has been adapted from the UCL review toolkit to fit the specific need of this project.

(The *UCL Collections Review Toolkit* is available at www.ucl.ac.uk/museums/research/review)

	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
CONTENT Condition	Small amount of fluid remaining and/or mould	Dehydrated specimen	Visible lipids and/or darkened fluid and/or specimen > ½ out of fluid	Discoloured fluid and/or specimen ≤1/3 out of fluid	Clear fluid Covering specimen
JAR Condition	Broken and/or unsuitable (inappropriate jar, wrong size, loose lid)	Degraded and/or rotted lid	Dirty and/or degraded seal and/or poor seal	OK condition	GOOD condition
Documentation: ID Label	No label	Family or Order name ONLY	Genus name ONLY	Binomial name and/or common name	Binomial name and common name
Documentation: collection data	No data	Reference code to locality OR survey OR broad locality (i.e. Naples, Plymouth, Irish Sea)	Detailed locality	Detailed locality and Collection date or named collector	Collection date AND detailed locality AND named collector
Documentation: additional info	No data		Method of collection		Habitat data AND/OR depth of collection
Potential use: teaching	Should not be used	Not relevant to teaching programmes	Relevant to teaching programme (some interpretation & background needed)	Part of curriculum/teaching programme	Multiple specimens (allowing extraction) AND part of curriculum/teaching programme
Potential use: research	No use	Limited number of specimens	Multiple specimens OR part of larger series or survey	Multiple specimens AND part of larger series or survey	Multiple specimens AND active research field AND part of larger series or survey
Potential use: public engagement	No use	Specimen not visible	Difficult to use (complex information required to interpret)	OK visual impact (reasonable size or able to magnify) AND/OR easy to interpret	Good visual impact AND easy to interpret (common species, relevant to Plymouth, unusual story etc)
Significance: historical	None known	Little historic significance	Known & published survey OR collector	Known & published survey AND collector	SIGNIFICANT Known & published survey AND collector
Significance: rarity	Common in UK		Red data list species		Type specimen
Significance: distribution	World wide	Northern Europe	UK	South West	Plymouth
Relevance: to Plymouth	Not specifically relevant	Collected by MBA staff	Collected in or around Plymouth	Collected by important local scientist	Collected AND studied in Plymouth