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chance of a much better consolidated system at the end of the initial five years being proposed.

Final Observation

A final observation concerns who should be a core or satellite organisation. While a large regional museum would almost certainly be the best choice as the core, the geographic location of the satellites, in terms of providing a service out to the other museums in the region, is very important. This is especially so when considering geographically large regions, such as the North West, Yorkshire and the South West, where outlying communities can be a hundred miles away from the centre of the region. In practice, this will make little or no difference to the core organisations, who will almost certainly be the same whatever options are finally followed. However, some satellites may be different under the different proposals. Furthermore, there seems to be no particular reason why the number of institutions chosen should be limited. It should be for the regional strategic authority to decide on the structure, size and composition of the hub. The drive to avoid dilution of any additional funding across too many institutions should be sufficient to ensure that a suitable compromise is reached. However, some of any additional funding should be directed to appropriate institutions outside of the hub. Support in the form of advice, surveys, expertise, and so on, is all very well, but the crucial factor will still remain lack of capacity, which can only be addressed by additional material and financial resourcing. As the report itself says "it is difficult to be resourceful without resources"

Overall, the findings of the report are to be welcomed, but the proposals and recommendations should be seriously reconsidered if it is not to have an effect contrary to that intended. The above discussion assumes that one of the two principal alternatives considered will be implemented, but it may be that further investigation will produce an alternative that is better than either of these.

Steve Thompson, BCG Secretary and Keeper,
Natural History, North Lincolnshire Museums.

Museums Association Conference

29 - 31st October 2001

Queen Elizabeth II Conference Centre,
London

The Biology Curators Group hosted a session at the MA conference this year on the subject of museums and biodiversity. The session was quite well attended and was up against some hot competition from concurrent sessions. BCG also had a stand in the Market Place where we were able to showcase the new BCG display panels.

The following is the abstract for the meeting and one of the talks presented..

Museums, Biodiversity and Community Biology Curators Group

This is a current hot topic, with concerns riding high at all levels of society over the state of our environment. Museum collections and databanks are vital to biodiversity research. They are key to educating and raising awareness amongst the public and in promoting community involvement in the care of their local environment. This session will look at the activities of a key biodiversity action group and the pivotal role that museums play in fostering essential links between communities and their environment.

Convener:

David Carter

Chair Biology Curators Group

Speaker(s):

Trevor James, Biological Records Centre

Nick Gordon, Leicester City Museums

Caroline Holmes, Holly Hayes Environmental
Resource Centre

Natural History Collections and Biodiversity: an outsider's view?

Trevor J. James

1. Introduction

Whether or not you would consider me an

outsider might depend on what you know about the National Biodiversity Network.

When I was asked to make this small contribution to the Museums Association Conference, I was a Trustee of the NBN, and ran the local biological records centre in Hertfordshire, based in a County planning department. At one time I was also Keeper of Natural History in a local Museum Service. I am still in touch with the museum profession, because I remain an Associate of the Museums Association!

The real reason why I was asked to come was also because the NBN has made a contribution to the deliberations of the recent Resource report on the funding of museums, especially about the importance for biodiversity of natural history collections.

2. Natural History Collections

Our natural history collections across the country must run into millions of specimens. But how often do we actually ask ourselves why we have got them? Having worked in a local museum, I can say that the reasoning behind so many collections has been nebulous to say the least, especially in the past, which will not have helped in getting better recognition.

As for understanding and being able to demonstrate what they consist of, the work of curators over the last 20 years or so has made some inroads into this, through the Collections Research Units and modern data management. But how much of the detail of this work surfaces in the minds of those with the purse-strings? Does the detail tend to obscure the basic message?

As for the users of collections, how many museums have taken a broader look at the potential role that natural science collections can have? While high tech interpretative skills have been put into many an in-house display, how many museums consider the broader role of such collections in relation to what is going on in the world outside? It is this theme which I want to explore, especially in relation to the way "biodiversity" has become a big issue.

3. Museum Collections as a "Biodiversity Resource"

I believe that these collections have four main reasons for existence.

The first of these, lumped as "education" and "demonstration", I would say are two sides of the same coin – showing people at large what natural history is all about, and illustrating the diversity with real examples. This is obviously one of the most highly visible activities of any museum, and as such, I don't want to talk about it any further, as others will be or have been doing so!

The other three functions, I believe, are equally important, but tend to get forgotten within museums in the rush to get the work done, and disregarded by those holding the purse strings, especially in local museums. There is also a very strong element of thinking that, if it is not directly related to the interests of the immediate "customers" of the museum – those coming through the front door of the gallery in particular, then it is not very important.

It is this "bigger picture" which I want to explore, and which I think can show the way to broadening the recognition of museums, and perhaps their funding.

4. Documenting the Natural Environment

What do I mean by this?

When I first joined a local museum, I was struck by two things – firstly the enormous amount of local support for its collections by what I would call the local "interested and dedicated public", and secondly, the incoherent way that the museum responded to their needs.

What I was seeing was the recognition by a relatively small band of people in voluntary societies that the museum performed an incalculable service to them in providing a "home" for the material they had researched locally, and which could then be used by others.

I would say that most collections of local

natural history material originated in this way. The result is that many such collections (not all, if we include the “foreign memorabilia” type of collection) are an invaluable source of information on the natural history, in its true sense, of the local area.

So, what role and functions can such collections now play:

Firstly, they tend to confirm what occurred where and when. There is nothing like a real specimen with a good label to be an unanswerable piece of evidence. “What’s hit is history; what’s missed is mystery” used to be the saying, with some truth! In saying this, I would emphasise again the importance of the “good label”!!! I am sure all museum people here would thoroughly agree.

Secondly, we need to be clear that collections of this kind can be **primarily** an archive. They are not there to be plundered for displays – in fact in most cases they are thoroughly useless for such purposes.

There are aspects of natural history collections which also tend to get forgotten about, even by museum curators in some cases. While the labels may be good, what about the associated written records? How many museum natural history curators have an active policy of collecting natural historians’ field notebooks, maps, annotated books, photographs, or, nowadays, computerised data? If they do collect them, do they maintain them in the way that an archivist would? Or are they given second-class treatment after the fine insect cabinets? Are the collections in the cabinets firmly linked in information systems with the written archives that came with them? Further than this, how often are natural science collections recognised by and linked with data on e.g. local history about the same area?

All these aspects are important in the process of ensuring that collections are a genuine tool for the “documentation” of the local or regional natural environment and its changes. Now that the importance of a genuine historical perspective on the environment is becoming more widely recognised, this

function, I believe, is certainly as important as, and probably eventually will become even more important than the demonstration and display roles. If not, then I think museums will have missed the point.

5. Verification and validation

I have already touched on these functions, but I think there are more activities here than most might realise.

Obviously real preserved specimens have always had a central role in the processes of taxonomy. So, the first point here is probably only a reminder to biological curators themselves that this is important, should they need it! But there are two related issues. Firstly there is the confirmation, or otherwise, as to whether the biological record is accurate. Secondly, there is an equally important role in relation to our ongoing understanding of the natural world. In Britain, there is a steady if not massive amount of work going on which requires natural scientists to revise their thinking on what species consist of. In other parts of the world the basic taxonomic task is still enormous. Museum collections, of course, not only allow work on that revision to take place (coupled now with molecular work elsewhere), but also allow people to go back to the original material and see where changes in records are needed. Without museum reference collections, such work becomes next to impossible (unless you rely on field notes or photos, as with birds!)

The corollary of this, therefore, is that museum collections are vouchers for other data. Here is where my interest in biological recording really comes in, and where the NBN has a vested interest. It is all very well having a vast amount of electronic data available at the touch of a keyboard, but where is the meat? How can we be sure that this record of a beetle actually refers to that species rather than another? In many cases we have to accept what we are given, but in important cases, it is only acceptable to state the record if it is backed up by a properly named specimen. These have to be kept somewhere, at least for a good while (and even if techniques like holography are

acceptable in some cases). And this is where museums must come in. We are undertaking more and more survey work for “biodiversity” – but who is thinking about looking after the vouchers? Where is the local or regional storage facility to make sure all our knowledge is not built on hot air or electronic bunkum?

This, again, is a hidden but extremely important role of museums which has been overlooked or disregarded by funding bodies for far too long, partly because those who are interested in the “records” are now more often than not in separate institutions from those who look after the vouchers. There has been a divorce between providers and users, with neither fully recognising the fundamental importance of the use.

6. Research

Natural science collections therefore are not just static assemblages of objects. They have a function in relation to ongoing studies, and are the back-stop against which our scientific understanding of the environment rests.

These roles, and that of being a part of the research process itself leading to new knowledge are of course all part of a continuum. Or, at least, they should be, if the museum is functioning properly.

How should museums be considering these roles? Natural science collections are almost unique in museums by virtue of what they consist of: individual (formerly) living entities, from a specific place and at a specific point in time, hopefully collected with information on known relationships to other living things and the environment in which they lived. This uniqueness of the individual is both the strength of their value, and a source of problems in their upkeep. For the greatest potential value, the importance lies in the overall, collective detail linked to the scientific sample with its associated data. The sheer bulk of the individual specimens and their fragility leads to the well-known problems of storage associated with natural history collections! It is not entirely surprising that museums have tended to forget the research roles in the face of dealing with

problems of curation.

Nevertheless, the research role must remain a highly significant potential. The specimens are historic samples. They individually, and, even more so collectively, form a window on the environment at a particular time. If this data is accessible, it is a very powerful tool in developing further insights, not least with the advent of new methods of analysis – DNA profiling, isotope analysis, etc. Obviously not all collections will have this kind of potential – much will depend on the level of associated data, and the quality of the material. But even in the lowliest local museum natural history collection, as long as it has associated data there will be opportunities for new insights.

Natural history collections, therefore, are the material which can confirm and support scientific understanding. They are the bedrock of knowledge, and a tool for future study.

7. Collections as the Archives of Science

Why are our natural history collections, therefore, so often seen as inconvenient cinderellas, especially as compared with the “value” of cultural objects in museums?

There has always been a bit of a mantra among museum curators that they should be engaged in at least some “research” around their collections. After all, that was one of the reasons why interested people wanted to join the profession in the first place – not to become paper-pushing bureaucrats, or entertainers, but to develop their knowledge and that associated with the collections in their care. I would suggest, though, that so often museums have failed to grasp the need for such activity to be closely tied in with modern advances across the board in the subjects they deal with, and none less than in the natural sciences. The result has been that the collections become abandoned because their function is lost to other institutions, while those other institutions have no real grasp of the need to maintain collections, let alone the resources to do so. We end up in the ridiculous position of having researchers bemoaning the lack of historic data for lack of

past material to study, while museums bemoan the problem of dealing with vast stores of historic specimens with the lack of their effective use!

So, in response to the points I have listed here, I would categorically emphasise that any museum which considers its natural history collections in the first category is failing in both its collecting and curatorial policies and in its duty to the public!

There are sometimes substantial elements of collections which fall into the second category. We need not belittle this too much. Arousing interest is a very important thing. But it is not the central *raison d'être* for most mainstream collections.

I would say that the last two categories are highly important, and have tended to be seriously neglected. But to fulfil their potential, we need some lateral thinking, some linkages with other interested parties, and some concerted effort.

If we don't succeed, then our country will be the poorer in the long-term understanding of our natural heritage. With the availability of modern electronic information systems, and the means of associating such collections with those areas of activity which badly need their input, we have no excuse now not to press successfully for their support.

8. Where do we go from here?

You may well ask! It is all very well my standing up and saying my piece, but I can only reflect how many times the Biology Curators Group and others have done the same since I first became involved in the subject in 1973!

However, I do believe there are significant opportunities in the pipeline which will offer some way forward, if we have the collective will to develop them.

I would say that the museum biological curators need to work with outside agencies, like my own, to present a coherent case. There needs to be a short, pithy, strategy based on the points here:

- Get the role of natural science voucher collections recognized on a regional basis at least. The proposals for "regional centres of excellence" may be a way forward, but the "regions" don't want to be too big, or the links with local knowledge and expertise will be lost. There would need to be a balance between available skills and resources on the one hand, and this local link on the other.

- There have been some excellent recent publications on the care of collections, but what is needed, it seems to me, is a more broadly supported set of standards which involve not only the museums themselves but the other organisations and institutions which need to be involved if these collections are to be seen to be useful.

- Part of this process is getting the museums profession as a whole, as well as its funding bodies, to understand that there is a legitimate role of museums as archives of such material, and that this can be a source of strength, not a diversion. The preparation of a joint strategy with outside bodies may be one way of doing this – showing that other institutions and interested parties have a legitimate stake in the museum, not just those interested in education or "outreach".

- Recognition of linkage with outside needs will require museum professionals to actively forge links with those organisations that might be involved. Natural science societies, research institutions, conservation agencies, and the National Biodiversity Network, are examples. In some cases, such links are already there to some extent, but much more needs to be done, especially at senior levels.

- The Cinderella of cinderellas has always been the natural history documentary archive. So often it is forgotten, even where the specimen collections are well-maintained. I have shown how important these can be, and so there needs to be a greater forging of links perhaps with the Archivists profession at least, and even libraries (dare I say it?) in developing systems of management, and with information scientists generally in propagating their use.

- Finally, I think more creative thinking, in relation to outside uses and potential partnership working, needs to be given to the role of electronic documentation. This is

particularly important because of the potential role of voucher collections in support of biodiversity data. The National Biodiversity Network has recognised this potential since its inception, but so far there has been little integrated thinking as to how this role could be developed effectively.

With the advent of the NBN, there has been an increasing awareness of the need to encourage higher standards of data collection by those involved in recording wildlife. Part of this process must involve the quality of identifications, and the support of these identifications by voucher specimens. As was pointed out above, the housing of such collections is vitally important, and therefore the NBN has a real interest in encouraging partnership approaches to the designation of such repositories across the country. The development of local information networks around local biological records centres is one aspect of such work, but the parallel development of natural science archives and resource centres ought also to be on the agenda.

There are opportunities in all this for support. It may not be immediate, but the linkage with the interests of the NBN may help in developing bids to bodies such as the Heritage Lottery Fund for support. The NBN has so far agreed a strategic approach to involvement of the voluntary movement in biological recording as a basis for making bids to the HLF. The role of museums in acting as repositories of volunteer survey material or archives could well be a very legitimate extension of this. Further thought as to how this can be developed would be needed, but what is clear is that "joined-up thinking" (all the rage now of course) is needed, and that real partnerships need to be forged between museums and the rest of the biodiversity community. In this way biological collections might, again, be seen as a real resource for the community at large, not just an albatross around the cultural museum curator's neck.

Trevor James
**NBN Development Officer for Recording
Schemes & Societies**

A SYNOPSIS (WITH ADDED PERSONAL THOUGHTS) OF THE FLUID PRESERVATION SEMINAR, HOSTED BY HAMPSHIRE COUNTY COUNCIL MUSEUMS SERVICE ON 7TH NOVEMBER 2001.

The seminar titled 'Fluid preservation – do we really understand it?' was hosted by Hampshire County Council Museums Service at their headquarters, a converted farm called Chilcomb House on the outskirts of Winchester. Simon Moore and his colleagues had arranged a number of interesting talks and demonstrations. In addition, there was a handling display of ground glass and storage jars from Stoelzle-Oberglas, the company who had sponsored the seminar, plus a display of fluid-preserved material in various media dating back to 1957. We were also presented with files, stuffed with interesting papers and information relating to the talks.

The seminar was divided into three parts - the biomechanics of fixation and preservation, more specific areas such as rehydration agents, and practical demonstrations. After an interesting welcome speech by Stephen Locke, the Director of Hampshire County Council Museums Service, Simon gave a brief history of fluid preservation. He then outlined the processes of fixation and preservation, and discussed 'new' preservatives, such as Opresol. Julian Carter (National Museums and Galleries of Wales) gave a talk on the biomechanics of formaldehyde with alcohol fixation, and a brief outline of DNA fixation and storage in alcohol. What I found most interesting was the difference between 'true' and 'pseudo' fixatives, where true fixatives create chemical cross-linking, whereas pseudo fixatives merely denature/coagulate. Although I found Julian's molecular diagrams a little hard to follow, as I had given up chemistry in the second year at senior school, I was left feeling that I wanted to find out more about the chemistry of the collections that I curate. I also felt safe in the knowledge that I know who to call if things get tough!