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The impending crisis for botanical collections held by local authorities: origins, consequences and potential solutions



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Abstract

The origins of the crisis affecting the future of botanical collections held by Local Authorities are examined, using the midlands of England as an example. Severe cuts to local authority budgets have reduced funding, directed local political process, changed museum priorities and resulted in the extinction of botanical curators. The effect of recent events on the botanical community and its use of botanical materials are examined. Recent developments are considered and potential solutions outlined, particularly the role of local natural history societies.

Keywords: Herbaria, botanical collections, local authority, political process, public engagement

Botanical collections matter

The traditional roles of plant herbaria as repositories for type specimens, voucher specimens and the provision of material for taxonomic research, including DNA analysis, is well known and established (Petit, 1991). In fact there are at least 100 uses for a herbarium (Funk, 2004), which are an invaluable resource for BSBI recorders and provide useful material for social historians (Braithwaite, 2012). Herbarium specimens also play a role in ecological studies, as they provide base-line data. Specimens have been used to show how the morphology of plants changes in response to changes in the level of carbon dioxide in the atmosphere e.g., number of stomata (Woodward 1987) and leaf width (Guerin *et al.*, 2012); how the recent infestation of horse chestnut trees by the highly invasive leaf-mining moth *Cameraria ohridella* is not a recent phenomenon and has occurred at intervals in the past (Lees *et al.*, 2011); the effects of management on aquatic flora (Wade, 1976); and as a source of phenological data e.g., the flowering of early spider orchid (Robbirt *et al.*, 2011). Botanical herbaria usually also contain specimens of bryophytes, fungi and lichens that have similar uses and importance. Herbaria and associated collections are also useful in explaining the context of other collections, such as archaeological remains, social history artefacts, materials used in fashion collections and influences on figurative and decorative art.

So, museum botanical collections are important for educational, cultural, scientific and environmental reasons. The museum community knows this and spends a lot of time and effort promoting the role of plant collections to local communities. Recently Martin Godfrey (2011) gave a personal view of his attachment to museums, touching on many of these matters, and highlighting the importance of physical contact with a specimen. He also hinted at some of the challenges facing botanical collections both now and in the coming years, many of which are the result of gradual attrition over several decades. This article intends to show how much more serious the situation has become following recent cuts in Local Authority spending, and what the effects on the botanical community are likely to be. The focus is the Midlands and some specific examples from Leicestershire have been included, where the author was employed, both to alert the scientific community to the way a Local Authority may view its museum collections, and to highlight the issues involved. This article is essentially a snap-shot of the current situation, which will inevitably change in the short- and long-term, as the political landscape changes.

The challenges to local authority collections

Loss of botanical expertise

According to a recent survey by the Museums Association, the number of natural history curators has fallen by more than 35% over the past decade, compared with falls of 23% for art curators and 5% for 'human history' (archaeology, world cultures and social history) in the same period. Gareth Harris (2011) noted that

- Nick Moyes, keeper of natural sciences at Derby Museum & Art Gallery was made redundant in March 2011,
- Steven Falk, senior keeper of natural history and expert botanist at Warwickshire Museum, was made redundant in October 2011, and
- the post of curator of natural science at Wardown Park Museum at Luton had been cut (and there is nothing on the Museum's website about Natural History collections).

Stephen Falk (2011) vented his spleen: "That pretty much sums up the local government-run museum industry...Increasingly out-of-touch, anti-expert, anti-natural history, incapable of engaging meaningfully with the huge environmental and biodiversity agenda and dogged by weak and surprisingly inexperienced managers."

Recently, the Museum Resource Centre in Ludlow, Shropshire, is under threat after Shropshire Council announced plans to make the centre's three permanent staff redundant and replace them with one part-time post (Kendall, 2015).

So far as I have been able to ascertain, there are no botany curators in Warwickshire, Worcestershire, Derbyshire, Northamptonshire, Lincolnshire, Nottinghamshire, Leicestershire or the cities of Leicester, Derby, Worcester, Warwick and Lincoln. Nottingham City Council has a Natural History Curator for its Wollaton Hall Museum that has an emphasis on zoology and, in March 2013, Birmingham Museums recruited a Natural Science curator. Other museums have transferred responsibility for the curation of natural history collections to non-specialist staff, e.g., Derbyshire's collections are curated by social history curators or to existing staff who now have multiple roles, e.g., the Keeper of Collections at The Herbert Museum, Coventry has the wide responsible for Social History and Natural History.

As a response to restructuring, implemented because of the need to reduce costs, but also, because of a change of philosophy driven by Local Authority priorities, specialist Curators are being replaced by more broadly-based Collections Officers or Collections Access Officers (or similar job titles). Their role is to work on the care (preservation, housekeeping etc.) of some or all of a museum's collections, to promote public access, to organise exhibitions etc., they may have little or no specialist expertise in botany (or zoology), as it is not needed. Although a curator can be bought in to curate a display or mount an exhibition, or work on a short-term contract for a specific task, the day-to-day work that makes collections a valuable resource is lost. Not all curators believe this is the right direction to go. Dr John Nudds, a senior lecturer in palaeontology at the University of Manchester, thinks: "In my opinion the *raison d'être* of our museums is the preservation of our national heritage. Directors with no regard for the collections are now culling specialist curators and replacing them with educationalists. My view is that this new role that museums are currently undertaking is to the detriment of the collections. Social work is nothing to do with museums." (Youngs, 2013).

Although a general curator can implement housekeeping and administrative duties to ensure a botanical collection is well preserved, excellent and necessary work in itself, without a specialisation in botany, and an intimate knowledge of the local flora, it is impossible to determine why a particular specimen is important, where gaps in the collection lie and how they should be filled, whether specimens offered as donations should be accepted or not, and to develop or review the acquisitions and disposals policy. Without a botanist with a taxonomic background to check the identification of specimens, more incorrect material accumulates, so the quality of the collection declines and, as nomenclature and taxonomy change, a collection becomes harder to use. A general curator may also find it difficult to "speak up" (i.e., provide advocacy) for a botanical collection and, when faced with financial stringency, may see little reason to retain it. (For those who do, but who lack the required expertise, an advocacy toolkit for natural history collections is being developed at Manchester Museum by Henry McGhie (2014)). Often, generalist curators do not collect specimens because it is not in their job description or work plan, and local botanists may only occasionally deposit specimens. How could we know so much about the distribution of the British flora or have the evidence about the effects of climate change on plant structure, if previous generations of curators had collected and deposited so few of their own and others' specimens?

Politics

Councillors and Senior Managers within Councils usually want to know the answer to the following questions: "Why does the Council have collections?", "What is in the collections?", "Who uses them?" and most importantly, "Why should taxpayers fund them?" The answer to the first question is the preservation of an area's or a region's cultural heritage; to answer the second requires a catalogue, which may not have

been made. Increasingly natural history collections are seen to require a local focus, so that a Museum's acquisition policy may be restricted to local material, possibly U.K. material, but it is unlikely that other European or world material will be collected or accepted from donors. Answering the third question demands the active involvement of local communities in their museums, who must see the museum as their heritage, their resource and their property. When the public does, then it will support funding from local taxation, so providing the answer to the fourth question. If the public does not support its museum, then it becomes "at risk".

Environmental control costs

The cost of environmental control of buildings to maintain temperature and humidity levels between tolerance levels is critically important and has been increasing in line with fuel prices. As each linear metre of shelf space or cubic metre of storage has a finite cost to heat per year, retention of items without direct relevance to the museum's function must be justified. Green initiatives to reduce power consumption may not be possible, or may take some time to implement and require expenditure (i.e., 'investment') so ultimately, collections will need to be housed in smaller buildings that are cheaper to heat.

Rationalisation

Botanical collections contain some or all of the following: herbarium specimens, wood and carpological (seed and cone) collections, a spirit collection, associated documentation ('personalia', photographs, maps, transparencies and posters), a teaching (synoptic) collection, a microscope slide collection, models of various kinds and ages, bound volumes of specimens, objects of economic botany and a library of books and journals. Sometimes great space savings can be made by compressing material to use existing space better, but often this cannot be done because of the need to pack objects appropriately for long-term storage, and space is still needed for new acquisitions. Common storage areas for consumables can help, but Property/Buildings/Estates Departments want to know how much space the collections occupy and how this could be reduced, especially if buildings are rented. This may mean moving to cheaper buildings and/or reducing the size of the collection size. Increasingly, the retention of non-local objects has to be justified and continued retention may conflict with Departmental priorities.

For example, Leicestershire Museum's natural history collections no longer have the objective of being a centre of biological or taxonomic expertise, and employ no taxonomists. But, with 30,000+ specimens, the lichen collection is the UK's fourth largest (after the NHM, Edinburgh and Cardiff), but only the previous curator (who built up the collection) uses part of the collection: nobody uses the world lichens, mainly because nobody knows they are there! Nobody is to blame: publicising the collection was not considered a priority in the past and the outlook for museums was different. However, the continued retention of this part of the collection could be justified only with difficulty. In common with other collections, there is a backlog of specimens that have not been accessioned which are an easy target for disposal. Rich (1998) proposed some criteria for evaluating the importance of herbaria and of individual collections which could assist with prioritising collections or parts of collections in straightened times. Cuts mean that difficult decisions will need to be made, but, if done against well thought-out and clear policies made by museum staff, rather than *ad hoc* decisions imposed by property services or administrators, then a museum that more closely matches its desired function will be produced.

Wholesale disposal of a collection might be undertaken, but, which institutions would accept it? Larger, national institutions may be reluctant to take an undocumented, uncatalogued collection without some cash to cover storage and integration costs. Paul Smith (2013) argues that agglomerating smaller collections under the roofs of the larger institutions, apart from the resource implications, would leave natural history deserts across large swathes of the country, with little or no access to well-interpreted natural science collections except in a few specialised centres. In the worst case scenario, it would be destroyed, either in its entirety or in part (e.g., all unaccessioned objects).

Public access

A good way to save money is to reduce opening hours, but it is then less easy to visit a museum's collections. Museums have made great strides in encouraging access, and digitisation of botanical collections to provide on-line catalogues of material for people unable to visit a museum in person may be considered an important means of outreach. However, both the volume of data and lack of staff preclude progress in the production of on-line material. Involving volunteers is seen as a good way to increase public access and many museums have active volunteering programmes. But, if a museum chooses to allow a collection to be taken over by amateurs, then its survival depends on those individuals, their goodwill, amount of free time and longevity.

Legislation

Legislation has had some direct effect on botanical collections. The Misuse of Drugs Act 1971 (Amendment) Order 2010 made it a criminal offence to possess fungi that contain psilocybin or psilocybin esters. But which species contain them? The British Mycological Society's website contains a 'Preliminary list of British Fungi reported to contain psilocybin/psilocin', but, until all the British species have been tested, we do not know

which to consider. The cost of a new licence to possess them is £3,133 with an annual renewal fee of £326, so is a considerable and on-going cost. Museums submitted a case for exemption, but this was refused by the Home Office. Retention of psilocybin-containing fungi was not possible by the Leicestershire Museum's collections, so they have been transferred to Kew, or destroyed. For this reason, Herb. LSR does not contain any specimens of *Cannabis sativa* either.

Budgets, consultations and service provision choices

Leicestershire County Council estimated in 2012 that it would have to make £82 million of savings, which increased to £110 million in 2013. All councils face similar budgetary cuts, but the provision of museums is not a statutory service, so they are an easy target when savings need to be made. It is worth noting that even statutory services do not have to be provided by a Local Authority itself: it can contract the service out to a provider.

Where do cuts fall and why? The process Leicestershire has been made public and it is important to consider it, as it forms a model for how Local Authorities allocate money. A public consultation, the Budget Consultation Survey, was held from October to December 2010, giving the public the opportunity to state their preferences for areas where services could be cut. In 2010, "the County Council heard the views more than 5,000 residents via an online survey, a questionnaire that went to every household via Leicestershire Matters (the Council's magazine), and three independently facilitated in-depth deliberative workshops with a representative cross-section of Leicestershire residents at three locations across the County." As the population of Leicestershire was 648,700 (mid-2010 population estimate), and assuming 60% are eligible to vote, this figure represents the views of about 1% of the electorate. The findings of the consultation published in January 2011 showed that, "Generally, service areas where residents felt that the Council should consider making the most cuts were street lighting, grass cutting, and museums (record office and arts). These were seen by many as non-essential services. These findings reiterate those from the focus groups who also listed these services the most likely candidates for budget reduction." The Communities & Wellbeing Section's budget was cut by 42% approximately, and all the specialist Curators posts were deleted. The cuts were justified by the Council on the basis of its consultation.

Further cuts were announced for 2012-13, and a second consultation exercise was undertaken. "Following the publication of the draft 2012/13 budget proposals, a survey form was made available on the County Council's website with a feature link on the website's homepage (which was available throughout the consultation period of 17th January – 31st January 2012). This provided the opportunity for any member of the public, including Leicestershire County Council employees, to complete the survey. Paper copies of the survey and copies in alternative formats were available on request." In total, 149 responses to the survey were received during the period 17th January – 31st January 2012 (LCC, 2012). One of the key findings was that, "The library service, within a broader arts and heritage context, has already suffered service reductions and it would be socially detrimental and short-termist if they endured more." Hooray! But, the authors noted that "The demographic profile of respondents...shows that there is an over-representation of responses from county residents who: Are aged 60-69...Have a long standing illness or disability..." i.e., the results are not representative. Their conclusions only addressed library closure and omitted any reference to museums. The lesson for museums is that public consultations are important: mobilising the help of volunteers and supporters to campaign for museums has a crucial role in their survival.

To be fair, given the simple choice between cuts to social care for the elderly, vulnerable people and children's education or to museums, the choice for the electorate is easy to make. But how much does public opinion really matter? Further budgetary cuts in 2013-14 led the Council to propose even more cuts to its museums, including approving plans to close its flagship Snibston museum and sell off the land for housing. Local people collected a petition of over 8,000 signatures opposing the change (more than the 7,200 replies the Council received to its August 2013 budget consultation) and obtained the involvement and support of both local businesses and the local Chamber of Commerce which offered advice and skills, but Councillors rejected their plan, and also ignored North West Leicestershire MP, Andrew Bridgen, who urged Councillors to re-think the closure (Martin, 2015). In contrast, the planned closure of Walsall Museum and some of Bristol's museums were stayed by public opinion. Currently, any effect of public petitions to reverse the cuts planned by Birmingham City and Derby Councils to its Museum Trusts has yet to be seen. So, it does seem that public opinion matters to receptive and responsive local authorities, but it has no power against determined intransigence.

It is also instructive to note that the outreach and public engagement work done by curatorial staff at Leicestershire, (increased volunteering, public talks, attendance at local fairs etc.) including organising a meeting for members of local organisations to express their views about the Council's intentions, had no effect on the Council's decision to close Snibston. Outreach activities may help sometimes to keep a museum open, but cannot be relied on.

The effect on the botanical community

All these issues mean that the fate of many collections is precarious and will affect the local botanical

community in the following ways.

- All the specialist curators and their expertise have gone and will impact on services offered, such as identifications, advice, local knowledge and support for the collections when threatened.
- Collections may have to be dispersed, or transferred in part or in whole to new institutions, so users will have to travel longer distances to major cities to examine material, rather than do it locally.
- If large institutions are unwilling to accept the transfer of herbaria (if, for example, they have no catalogue), then they are at risk of destruction.
- Collections may be disposed of accidentally, which has happened recently to the Flintshire collection (Wynne, 2012).
- Lack of routine housekeeping leaves collections vulnerable to damage by pests.
- Access may be reduced as museum hours and staff availability are reduced to save money.
- Spirit collections, though little used by botanists are expensive to maintain, so are highly vulnerable.

What is likely to happen to collections in the future? What can be done to stop the decline?

New priorities for museums

The future priorities of museums will be access, outreach, exhibitions, engaging new audiences and revenue generation. Taxonomy and science are highly unlikely to be considered, as science is not a priority for councillors. In contrast, there is substantial demand for science from the general public and an appetite for understanding plants, for the historical and cultural context of plants, for information about the lives of local botanists, and for taxonomic products, especially (local) keys and floras. Perhaps these will be done by volunteer groups rather than specialist curators, but, at least the collections will be used. However, the emerging dichotomy between museum priorities and botanical priorities needs to be addressed.

Museum trusts

Interest in trust status has accelerated in recent years. The anticipated fiscal benefits of trust status include greater tax and VAT reliefs, Gift Aid and new opportunities for corporate donations and sponsorship as well as lottery and other charitable funding. In effect, this is another way of saying: "Go and find the money to run the museum yourself". If a museum is lucky enough to have the staff and, increasingly, the volunteers who have that particular skillset and the time and motivation to do it, then this new direction may prove successful.

In April 2012, Birmingham merged the city's museum and art gallery, Thinktank science museum and several historic buildings into the Birmingham Museums Trust with an annual budget of £11m, making it the largest independent charitable trust of museums in the United Kingdom. In September, 2012, three of Derby's museums were transferred to a trust, with the ownership of museum buildings and collections remaining with Derby City Council. Funding for this trust is fixed for the first two and a half years, and future years will be agreed at least two years in advance. But, Birmingham is now facing a proposed 15% cut in funding, and Derby Museums is facing a proposed cut of 26% to its council grant (Kendall, 2015). It remains to be seen how these two Trusts will weather this new round of cuts and what solutions to reduced funding they can find.

Regionalism

Paul Smith (Director of the Oxford University Museum of Natural History) believes that the solution to these problems is effective networking to enable the continued use of collections in small museums with no specialist staff and more efficient regional networks to provide mutual support for natural sciences, whilst recognising that there is little point in saving the collections unless they are to be used. Regional museums with expertise could establish networks of mutual support, working to help smaller museums help themselves in relation to natural history in a way that complements more general museum development programmes in e.g., collections care and conservation, but could equally apply to the development of exhibitions, education and public engagement programmes, and the provision of specialist advice and support for funding applications (Smith, 2013).

The West Midlands Biological Collection Review, a project is funded by Arts Council England and managed by Birmingham Museums Trust, aims to "record the significance, usage and condition of each collection and provide tailored advice to the museum on improvements in these areas" and to provide "a guide to caring for biological collections aimed at non-specialist custodians", is a step towards helping non-specialist staff to ensure continued care and use, but it does not address the loss of expertise.

Although national collections remain, and their funding is more secure, how will they interact with local

museums when faced with perpetual staff shortages, differing priorities and budgetary constraints themselves? University herbaria still remain in the Midlands, although they face much the same pressures as local authorities and are unlikely to be providers for this solution and, more likely, users of it.

Partnerships with local botanists and recorders

Don Steward, the Collections Officer (Natural History) for Stoke reports that the Museum has a couple of good volunteers who deal with the herbarium collection (ca. 15,000 specimens) and that it has excellent contacts with members of Staffordshire flora group. John Radley (Curator of Natural Sciences, Warwickshire Museums) has responsibility for Warwickshire Museum's herbarium and states that... "it is afforded a good degree of care through excellent storage and frequent pest-checking. It is still being used by local botanical recorders." In Leicestershire, volunteers from the local group help to maintain both the County Museum Service's herbarium and Leicester University herbarium. Local botanists and recorders with their store of expert knowledge should be able to make up the shortfall in experience of more general curators; they can work together as partners. From the museum's point of view, it demonstrates local involvement and active use of their resources. Training activities for local botanists and groups could take place in herbaria, the specimens could be used to construct local to local flora, and most museums would doubtless be delighted to get requests to host this type of activity. The 'Herbaria @ Home' project, run under the auspices of the Botanical Society of Britain and Ireland, offers the chance for small local herbaria to digitise their collections and make them available to a much wider audience (BSBI, 2014). Local groups could provide a fertile recruiting ground for volunteers for this project, many of whom would offer to help with digitisation, if they were able to develop the confidence to contribute, using local guidance and expertise.

Conclusions

Botanical collections are important for many educational, cultural, scientific and environmental reasons. Severe cuts to local authority budgets have reduced funding, directed local political process, changed museum priorities and resulted in the extinction of botanical curators in the Midlands of England. Although the collections remain, it is clear that the future for collections held by local authorities is bleak. However, new ways of working and engagement with volunteers from local natural history societies may help to preserve botanical collections, particularly where local councils are responsive to public opinion.

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