

## Why museums matter

Almost as long as I can remember I have been a fan of museums, especially natural history museums. As a child I found the exhibitions of actual specimens exciting and inspirational, and more recently I have made use of their collections of botanical specimens for research purposes. I take the view that museum collections matter – they have a lasting value for several reasons and we are in danger of losing them.

I think we all take it as almost axiomatic that the collections of specimens, especially types, in major museums are key to morphology-based taxonomy. However, there are plenty of other museums around which hold substantial natural history collections which can tell us a great deal; and of course morphology-based taxonomy is falling out of favour too.

So what do these museums contain? As well as the specimens themselves, they usually also have documents, not only the journals, diaries, maps and correspondence of collectors, but also runs of such things as local natural history society journals which typically don't find their way into national collections, and collecting ephemera such as photographs and equipment.

I would maintain that these collections are in danger, sometimes from surprising sources, and I think that one of the main drivers is lack of use. Perhaps the most obvious danger is the need to save money which has become more and more prominent in recent years – with the latest cutbacks even large national bodies are not immune. Collections take up space and need curating, and so getting rid of them is a big temptation. Similarly funding cuts can cause a museum to specialize and so get rid of what is then seen as 'surplus' – with luck this material may end up elsewhere, but too often it can end up inaccessible in a basement somewhere or even in a skip. Even if collections are kept then lack of curating can cause deterioration to the extent they become unusable. A rather insidious danger is the current fashion for online recording, often combined with digital imaging of specimens. Both have their uses, but given the zeal with which they are supported in some quarters they can convince the unwary and financially driven that they are sufficient and that we no longer need the specimens behind the data. I would always maintain that you can't dissect a digital image and in any event our own field of bryology

is singularly unsuitable for the digitization of specimens – although it does happen. You also can't check a dodgy record without a specimen; even the records on major national databases, like the NBN, can be questionable; indeed they may not even actually exist beyond a list of species for a site, and due to the NBN 'ownership' policy may not actually be available to researchers if the 'owners' fail to respond to requests.

Why does any of this matter? There is a huge amount which one can only tell from examination of specimens as only specimen data can allow critical and objective evaluation both now and in the future, perhaps using new and as yet unknown techniques. For example, one of the uses we make of biological records is to examine the distribution of species in both space and time, and one of our most consistent needs is to check their basic authenticity; perhaps because the reliability of collectors is suspect or because taxonomy has changed, but just occasionally because some sort of questionable activity has taken place – perhaps the most notable examples being the 'Rum Affair' in botany and the frauds perpetrated by Meinertzhagen in ornithology. Specimens too demonstrate the geographical variability of species and, if they have decent supporting data, can illustrate basic ecology. Both distribution and ecology have been illuminated by the relatively recent development of stable isotope analysis which has proved particularly helpful in unravelling the details of bird migration. This highlights another point – changes in technology, such as molecular sequencing, open areas of research unknown at the time when a specimen was collected and clearly become unavailable if it no longer exists.

To return to my beginning, I also feel that actual specimens are a valuable training resource, both for enthusing the public and for training future naturalists as so little 'whole-organism' biology is now taught in schools and universities. It is my contention that as active naturalists and biologists we should do what we can to preserve collections for the future – and perhaps the simplest way is to actually use them on a regular basis so as to convince the bean counters that there is actually a need. Try it and you may be amazed at what treasures can be found in the under-catalogued parts of your local museum.

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