THE VALUE OF NATURAL HISTORY COLLECTIONS


This report covers the basics of natural science collections and why it is important to continue their funding. It explains why they should be maintained and expanded, what can be done with the specimens within them, and how they are a benefit to the general public. It also outlines specific examples of how natural collections support other research in a wide range of fields, such as in agriculture, medicine, and social history. Lastly, uses of collections are outlined in order to support their continued expansion.


Because natural science collections document species diversity, they are invaluable in work involving conservation biology. This article highlights the benefits in three areas, with the first being the expansion of projects and taxonomic influence on data collection. Next is the expansion of digitization, ending with the importance of community involvement through outreach and education. Finally, the challenges facing natural science institutions are addressed, such as inconsistent technology and lack of funding.


It was identified that taxonomy is a discipline in decline, and as such the goal of the Australian forum was to measure the capacity of the science sector to supply identification and research services in a timely manner. The forum was divided into three parts, with the first being the creation of a national action plan where priorities were identified, expanding the public profile was worked upon, and funding was assessed. The second portion of the forum was workshop sessions where the priorities were addressed and a predictive matrix was created to organize all taxa. Lastly, a plenary session was held where presentations were given from each of the professional sectors that summarized the ideas brought forth in the workshop sessions. This document therefore is a summary of the proceedings and the information and plans that arose as a result of it.


In regard to long-term studies done on the natural world, natural history collections are the most important source of information as they contain a wide variety of information that reaches far into the past. The topic of study in question in this particular study was the response of biota to ongoing climate change. By using natural history collection data, it was possible to reconstruct biotic responses to environmental changes as well as noting
significant change over time, information that would be nearly impossible to obtain without detailed collections. However, although these collections are highly valuable, their full potential in relation to large-scale studies cannot be realized until digitization has occurred on a greater scale.


This article points out that in previous research contributors have rarely discussed the importance of natural history collections in regard to survey data. Since few studies are conducted for longer than a couple decades, natural history collections provide additional information to supplement and reinforce the findings of the research. Additionally, in cases that involve such things as habitat destruction, climate change, etc., NHC data is essential as it provides baseline data that can be used as a basis of comparison for current and changing conditions.


Pettit examined studies that were done on natural history journals and found that a very small percentage of articles used specimens from natural history collections. He says that non-biologists, administrators, and research funders tend to overlook the importance of taxonomic work, and as a result this can lead to costly problems (an example given was the failure of preserving voucher material, turning an expensive study into a waste of money). He then goes on to explain the importance of natural history information in a variety of fields, from environmental biology to medicine to law enforcement and commerce, ending with the idea that natural history collections are a national resource and as such should be paid greater attention.


Although biological collection research has declined in recent years in most areas, there are some exceptions, the most prominent being in environmental and ecological fields. Collections made in the context of these two areas of study have shown impressive increases in recent years and as a result it is expected that support for biological collections will also increase if this trend continues as it is now. However, there are still issues surrounding the way in which to best utilize such collections and how to manage their use, and these issues are mentioned throughout the article, as are policy and record keeping changes.


Semper discusses the importance of Science Museums, especially in relation to education. He explains how they are invaluable learning tools as they invite interaction between the exhibit and the viewer. However, despite their significance, he explains the lack of research
on learning in museums, and discusses several methods that museums use to educate those who visit, stressing the implications that design can have over a varied audience.


This article talks about the importance of biological collections across the nation and their widespread contributions to numerous aspects of society. It also explains how natural science collections can save both the government and taxpayers money by aiding government spending, reducing redundancy, securing natural resources, etc. However, because the general public does not appreciate these contributions, there is insufficient funding for the collections to be maintained and improved—which is what Suarez and Tsutsui are attempting to counteract by raising awareness.


Thomson explains how natural history collections revolve around three main ideas—information, identity, and comparison. He also discusses how the process of collecting has changed over time, beginning with blanket collecting and ending in present-day target specific collecting practices. Lastly, he mentions the importance of preserving the collections, and also goes into the 50-percent paradox, which, explained simply, is the idea that at least half of collections are unused at any given time, although they often prove to later be useful.


Using a case study that focuses on kiwi feather samples, the importance of natural history collections in scientific research is stressed and three main areas of concern are discussed that revolve around the interpretation of data that is gained from using natural history collections. These concerns include sampling issues, analysis methods, and cross-referencing information found in collections with written historical information. Through the course of this paper it is explained that sampling and analysis methods need to be carefully improved to benefit the accuracy of studies and that the findings resulting from natural collection data needs to be supplemented with written historical data to ensure its accuracy.