



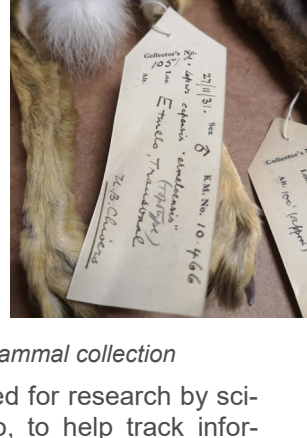
NCSF NEWS

Communication from the Natural Science Collections Facility Hub Team

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FROM AUDREY: WHY COLLECTIONS MATTER



Amathole Museum mammal collection

The collections in the NCSF network are primarily used for research by scientists and academics and are continually added to, to help track information about species, populations and other parts of the natural world. Our ability to understand the natural world depends on the collection, preservation, and ongoing study of these valuable natural history specimens.

Collections help meet the need to see how the populations, species and environments change over time or how the methods of collecting the samples or specimens have changed. The collections represent the natural world through space and time, and they are incredibly valuable for this reason. They are the physical record of earth's life forms and processes. Their study allows us to predict the future of the planet – information that profoundly affects our lives.

The United Nations proclaimed the year 2019 the International Year of the Periodic Table of Chemical Elements. From there, came a theme for the annual national Science Festival "Discover your element". This was held in Makhanda from the 6th to the 12 of March. The Eastern Cape institutions (Albany Museum, Amathole Museum and SAIAB) all participated and showcased their collections, highlighting their importance. We hope you have inspired a life or two from the many SciFest participants. Below are pictures of the institutions that attended:



SAIAB Scifest stands, showing that it is never too early to start thinking about your career. (Pictures by Lucky)



Buyiswa Mahala from Amathole Museum showcasing a lion skeleton. (Picture by Buyiswa)

Musa Mlambo from Albany Museum demonstrating the diversity of freshwater invertebrates and their different ecological adaptations (Picture supplied by Musa)



FROM IAN: TOWARDS DATA STANDARDS FOR SOUTH AFRICAN COLLECTIONS

The NSCF Data Working group met in Cape Town two weeks ago. One of the goals of the meeting was to develop a data standard for collections institutions. During any discussions of NSCF activities it is important to remember the goals of the NSCF are to ensure that collections are secure, properly cared for, and maximally used. The purpose of data standards are to promote wider and easier use of collections data by the scientific and conservation communities.

Imagine that as a scientist or conservationist, if you were to ask for data from several different collections in the country (say butterflies, or small mammals), you would receive the data in the same format, with the same column headings, with the right data in the right columns, with standard names for countries and provinces, and the same formatting for dates, collector names, and so on. For a data user, this hugely simplifies the process of amalgamating datasets from different sources and getting those data fit for use in the shortest space of time. Examples of important users are taxonomists who borrow specimens from multiple institutions to do taxonomic revisions, conservation planners wanting to identify threatened species hotspots in the country, or even environmental assessment practitioners looking for regional species lists.

The draft NSCF standards use the international Darwin Core standard as their baseline. The Darwin Core is tremendously useful in that it specifies a set of data fields and their meanings. By having the meanings clearly defined, a database field for a particular institution can be mapped to those Darwin Core fields. An example might be a field called 'Collector Number' in your database, which would be mapped to the Darwin Core fields 'dwc:recordNumber' or 'dwc:fieldNumber', depending on what values are actually stored in your database and which definition of those two fields your data best correspond to. All of the Darwin Core terms and their definitions are available at <https://dwc.tdwg.org/terms>

You will notice that the field names are prefixed with 'dwc'. This is called a namespace prefix, and it makes it absolutely clear that the term 'recordNumber' comes from the Darwin Core standard. It is becoming increasingly common to include these prefixes with the Darwin Core field names, and should be something that scientists, data managers and collections staff strive to do too.

The NSCF standard specifies which fields should be included in any dataset that is extracted from a collection database for any purpose, whether it be for answering a query from a scientist for records for a species, or sharing data to an online aggregator such as GBIF. Having a standard on paper is only of limited use though, so the important work that needs to be done is in setting up or modifying the queries and picklists in our specimen databases to provide the data in the way that is consistent with the standard. The Data Working Group members will be driving this work forward across the institutions over the next few months.

The standard will be published together with the collections management guidelines that are being developed by the Collections Management and Curation Working Group. We hope that these will make a valuable contribution to increasing the value of our collections.

SAMA 2018 CONFERENCE

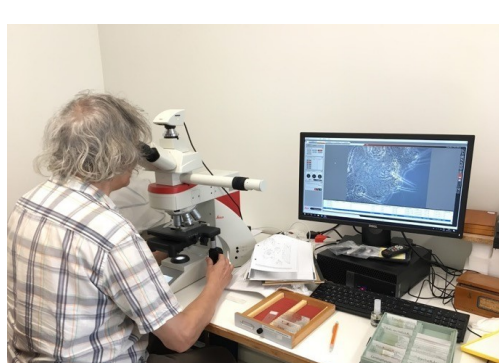
Dr Helen James from Albany Museum recently presented on the role of the NSCF in supporting museum collections at the 2018 South African Museums Association Conference.

Attached to this newsletter is a special edition of *Samantics* with selected conference presentations, including the NSCF article on page 8.



NSCF TRAVEL GRANTS

Iziko Collembola collection growing
By Charlene Janion-Scheepers



Dr. Louis Deharveng working on the Collembola collection at the Iziko South African Museum, Cape Town. The NSCF funded phase-contrast compound microscope is fundamental to the identification and study of Collembola.

Collembola (springtails) are vital to soil health in terms of decomposition and nutrient recycling. They are also one of the most important prey species to other arthropods such as spiders, thus knowing their identity is critical to understanding the functional roles of soil fauna. Collembola are among the least known groups of soil fauna in South Africa, and, together with mites, Collembola make up 90% of the micro-arthropod population in soils and play a fundamental role in terrestrial ecosystem functioning.

A travel grant for visiting researchers to work on collections was awarded to Dr. Louis Deharveng from the Museum Naturelle d'Histoire National (Paris, France), in collaboration with Dr. Charlene Janion-Scheepers, a postdoctoral research associate at the Department of Entomology, Iziko Museums of South Africa. Dr. Deharveng is a world expert in Collembola systematics* and has over 40 years' experience in working at museums.

During Dr. Deharveng's three week visit to the Iziko South African Museum, Cape Town, approximately 300 specimens on microscope slides were checked, verified to genus or species level where possible, and entered into our database Specify, including several holotype specimens. These included some specimens that were already in the collection, but consisted mostly of new additions. A further 200 microscope slides and 300 samples in ethanol were checked and will be digitised over the next few months. Much work was also done to update the species list of Collembola of South Africa and develop a key to the families, which will be published on the website *Collembola of South Africa* (www.collembola.co.za). This visit not only contributed to the growth of the Collembola collection at Iziko Museums of South Africa, but also enhanced our taxonomic knowledge to curate this growing collection and hopefully apply to other Collembola collections available in South Africa.

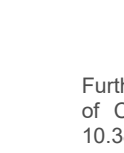
Many thanks to the NSCF for the travel support awarded to Dr. Deharveng, Iziko South African Museums, and Iziko data captureers Mujahid and Zikhona for their assistance!

*collembologist - one who studies springtails (hexapods of the class Collembola).

Collembola are usually between 2 and 4mm in length and grouped into four major orders.



Further reading: Janion-Scheepers C, Deharveng L, Bedos A, Chown S (2015) Updated list of Collembola species currently recorded from South Africa. ZooKeys 503: 55-88. doi: 10.3897/zookeys.503.8966



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