Identifying, documenting and digitizing types: a priority program in collections management at MUSE - Science Museum of Trento (Italy)

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Introduction

It is known that types are the most important specimens for taxonomy. Nevertheless, their management in natural history museums is not always adequate to their relevance.

In fact, for several reasons, curators and collections managers are often unable to determine with good precision how many and which type specimens are held in their collections.

Types at MUSE

Among the 2 million specimens held in the MUSE - Science Museum of Trento natural history collections, spanning more than 2 centuries and mostly of local origin, we estimate that there are about **1000 types**.

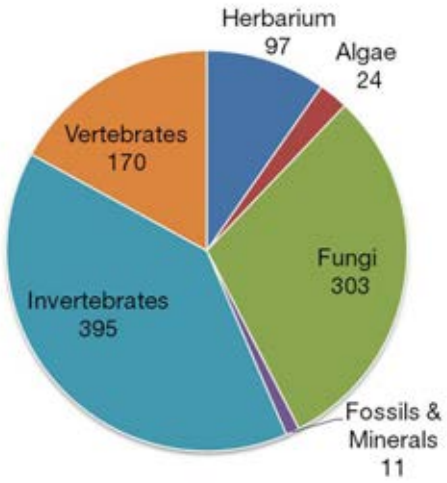

Fig. 1. Estimates of number of types held in MUSE scientific collections

Many of them are connected to the collections of important botanists and mycologists held in the *Herbarium Tridentinum* (TR) (Ambrosi, Gelmi, Porta, Bresadola); numerous others are amphibians and reptiles coming from the Eastern Arc Mountains (Tanzania) and other tropical African countries collected in the last 25 years; the number of insect and spider type specimens are also relevant.

During a first survey held in 2019, 60% of types specimens results clearly identified; 10% is thoroughly catalogued, whilst only a few dozen are digitized.

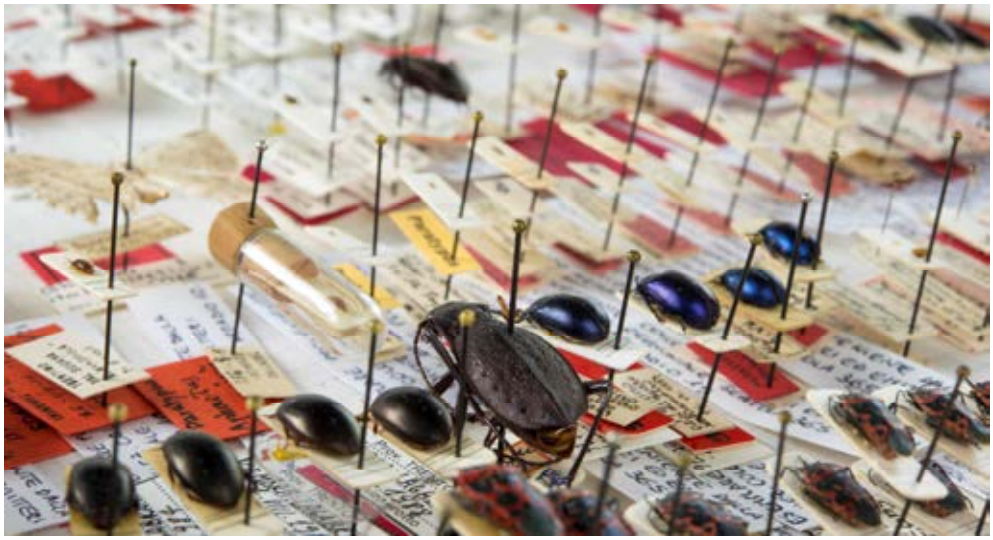

Fig. 2. Insects type specimens

The program

To fill this substantial gap and follow the recommendations of the Codes, MUSE undertook in 2019 a program for the identification, documentation and digitization of type specimens, that aims to allow full access to their data and to make them *open digital specimens*. The identified workflow steps are:

1. Identification

Gathering of information from catalogues and publications written by scientists that collected and/or studied our collections

2. Care and Conservation

Checking specimens preservation conditions, undertaking specific conservation actions where appropriate; checking environmental and safety conditions of storage location.

3. Detailed cataloguing

with a new performing CMS developed in collaboration with MUSE (comwork.eu).

4. Digitization

with pictures and/or 3D scanning models.

5. Publication

Realization of types inventories and web open access to all documentation.

Fig. 3. Atheris matildae Menegon *et al., holotype*

Fig. 4. Hypochaeris facchiniana Ambrosi, *lectotype*

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