

EDIT Workpackage 5 – Interview 19 Model Detail

The taxonomist is an arachnologist in the Royal Museum for Central Africa, Tervuren. He has produce a wide variety of work over his career, including revisions of groups of species, entire genera, and entire families. Later publications included descriptions of the spider families of Africa, and later the spider families of the world. Other responsibilities include teaching and PhD supervision

His work can be roughly divided as follows:

Curation	20%
Research	50%
Teaching	10%
Admin	30%

The following table describes the individual steps of the process model in detail.

Activity	Select a sub-group to work on	In terms of a revision, the process will start with the RMCA collection. The museum has a comprehensive collection for this family, such that the first step will be to examine the house specimens and come to a decision as to whether a revision is necessary. In the wider picture, the direction of the taxonomists work is subject to the same pressures as most scientists; the institutional focus of the Museum; the pressure for 'high-impact' publications; career advancement; and of course, personal interest in the field.
Activity	Search Literature	A broad category that covers the sourcing and gathering together of literature pertaining to the group under study.
Action	Identify existing literature	The RMCA has a substantial library, including a specialist section for invertebrates and spiders. Searching for literature is never a problem and can be carried out through the library alone. Even if this were not the case, inter-library loans would suffice.
Action	Gather existing literature	Almost all literature can be found in the RMCA library, so gathering the literature simply involves loaning the publication.
Activity	Collecting activities/ Field work	Collecting from the field often takes place in the context of a larger project. That is, a collecting trip would rarely be organised simply to collect for a single taxonomic review, or even in most cases a series of taxonomic projects. The trips tends to be multi-disciplinary, involving a collaboration with different parties having different goals, for example, monitoring projects or ecological studies.
Action	Arrange permits and practicalities	The details of this activity vary greatly from project to project. In modern collections, permits are always required. These may be arranged personally by the taxonomist, but more likely the task will be carried out by collaborators in the host institute, usually in the form of long-term contracts or MOUs. CITES restrictions can apply, though rarely in Africa, where

		most of the current collections take place.
Action	Conduct collection	<p>Methods of collection are numerous, and include:</p> <ul style="list-style-type: none"> - canopy fogging with pyrethrins - pit fall traps - sieving of the forest floor material - sweep nets - beating foliage and catching the fall out <p>Following initial observations, specimens are transferred to alcohol in the field. GPS is used to record location.</p>
Action	Transport specimens home	Specimens are sent home by mail. No significant issues have arisen here, the process tends to be satisfactory.
Activity	Gather existing specimens	<p>A broad activity describing the location and gathering of existing specimens of the group under study.</p> <p>The importance of having all types physically together for a group examination varies according to the level of the group under study. It is suggested that for the lower level groups this can be important, given the natural similarity between specimens at this level. When working on animals at the family level however, this becomes less important and specimens can easily be viewed separately.</p>
Action	Identify existing specimens	<p>Specimens are identified from the following sources:</p> <ul style="list-style-type: none"> - the RMCA collection - speculative request to other institutes. Requests can be for all specimens known to be, or thought to be, of a particular group, or for all specimens with a certain set of characteristics - Specialist publications, e.g., <i>A Generic Revision of the Spider Family Zodariidae (Araneae)</i> - Through personal knowledge of the type specimens
Action	Gather existing specimens	Loan requests are filed, or, if an opportune trip presents itself, the specimens may be examined in the institute.
Activity	Examine specimens	Broad category representing the examination of specimens
Activity	Prepare specimens	Broad category representing the preparation of specimens for examination
Action	Dissect specimens	Dissection is required for the examination of internal structures, and for the removing of body parts for slide mounting and SEM examination. This procedure uses standard dissection tools.
Action	Prepare slides	Slides of the relevant body parts are prepared.
Action	First visual	First visual examination, involves a broad overview

	examination	of the specimens in order to take in their general characteristics.
Action	Sort specimens	As in many branches of taxonomy, physically sorting the specimens can be very helpful. Examining specimens together can highlight common and distinguishing features and serve as an aid in developing the taxonomic theory.
Action	Detailed visual examination	<p>The detailed examination seeks to find the finer characters, usually, though not always, in order to compare similar specimens.</p> <p>Detailed examination generally requires equipments; standard light microscopes, stereo microscopes, SEM, though the latter is not used for comparing specimens, only to highlight known features for publication.</p> <p>Measurements are initially recorded by hand mid-examination, and immediately recorded to computer afterwards.</p>
Decision	Further analysis?	
Action	Further analysis	<p>Molecular analysis of the specimens is not carried out in this case.</p> <p>Phylogenetic analysis is performed, using morphological characters. Software used here includes PAUP, Henning 86 and MACLADE.</p>
Action	Assess emerging theory	A decision as to whether the emerging taxonomic theory adequately describes the variance seen in the specimens.
Activity	Prepare paper	Broad activity referring to the process in which a scientific paper is compiled and published.
Action	Compile manuscript	Compile the manuscript, according to the editorial guidelines of the journal, using a word processing package. Papers will include the standard requirements of a taxonomic review, and also other items such as tables, images, distribution maps, and any other information or analysis appropriate to the study.
Action	Friendly review	An informal review carried out by colleagues prior to any formal submission of the paper.
Action	Revise paper	In the light of the reviewer's comments, carry out any revisions to the paper that are felt necessary
Action	Submit to journal	Submit the manuscript to the journal in accordance with the editorial guidelines. Now almost always by email.
Decision	Manuscript review	<p>The manuscript will be peer-reviewed by a number of independent scientists. The outcome of this review can be:</p> <ul style="list-style-type: none"> - Minor modification

		<ul style="list-style-type: none"> - Major modification - outright acceptance (rare) - outright rejection (rare)
Activity	Curation activities	Curation activities refer to the handling of the specimens when the project is complete, or at least when they are no longer required.
Action	Label specimens	The specimens are labelled, by printed label or hand written
Action	Return loaned specimens / send out paratypes	Loaned specimens are sent back to the institute.
Action	Place specimens in local collection	New specimens are placed in the local collection
Action	Update collection database	The collection database is updated with detailed of any new specimens, and any in which details may have changed.

Notes:

Wish-list for the future: Online gallery of type specimens

A notable aspect of this taxonomist's was the range of his work over the different levels of the taxonomic hierarchy. He has completed revisions and reviews from the level of world families to species, and whereas this did mean a lot of work to fit into a short interview, it was also an opportunity to compare these different projects.

A simple summary of these findings, as a sliding scale:

	World Families	Family revision	Genus revision	Species revision
Collecting activities	Less - > - > - > - > - > - > - > - > - > - > - > - > - > - > More			
Search Literature	More - > - > - > - > - > - > - > - > - > - > - > - > - > - > Less			
Gather Specimens	More - > - > - > - > - > - > - > - > - > - > - > - > - > Less			
Examination	Broad characters - > - > - > - > - > - > - > - > Detailed characters			
	Light microscope - > - > - > - > - > - > - > - > SEM			
Preparing paper	Larger work - > - > - > - > - > - > - > - > Shorter work			