



Project no. 018340

Project acronym: EDIT

Project title: Toward the European Distributed Institute of Taxonomy

Instrument: Network of Excellence

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C 2.1.16 Refining the classification of approaches to taxonomic research

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Dissemination Level		
PU	Public	
PP	Restricted to other programme participants (including the Commission Services)	x
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

Introduction

EditExpertNet currently enables filtering and search facilities to find taxonomic experts based on any combination of the following categories covering scientific methods, taxonomic activities and geographical distribution:

- Taxon/taxa of expertise down to family level.
- Geographic area of taxa covered by the taxonomist's expertise.
- A list of seven different types of activities encompassed by taxonomy *sensu lato* as defined by Enghoff and Seberg (2006)¹
- Methods used.
- Environment and habitats of taxa covered by the taxonomist's expertise.

The screenshot displays the 'Methods used:' section with a scrollable list of techniques including 3D reconstruction, Acoustics, Automatic image recognition, Behavioural studies, Chemical methods, high performance liquid chromatography (HPLC), secondary compounds analysis, Embryology, Genome analysis, chromosome counts, fluorescence in situ hybridization (FISH), Genomic in situ hybridization (GISH), meiotic pairing analysis, Key construction, Microscopy, fluorescence microscopy, interference contrast microscopy, laser confocal microscopy, Other microscopy, and photomicroscopy. A note below states: 'Methods like microscopy, 3D reconstruction, morphometry, specialized software. Ctrl+click to select multiple terms'.

The 'Georegions / Geographic areas:' section includes a text input field and a search icon. Below it, a note reads: 'Your selected geographic areas (e.g., countries, continents, clima zones, terrestrial or aquatic areas). Please enter a comma-separated list of geographic areas. As a huge number of options are available, browsing is inexpedient, and 'auto-complete' is chosen. Type as many letters you need until you'll find your choice (e.g., "mad" will suggest Kermadec Is., Madagascar, Madeira...)'.

The 'Environments / habitat:' section features a scrollable list of habitats such as Alpine, Arboreal, Epiphytic, Desert, Freshwater, Marine benthic, Marine pelagic, Neritic, Paleontological, Parasitic, Subterranean, and Terrestrial. A note below states: 'The habitat of your taxonomic group. Ctrl+click to select multiple terms'.

The 'Type of taxonomic activities:' section has a scrollable list of activities including Recognition, description and naming of taxa, Comparison of taxa, including studies of relationship, Classification of taxa, Study of genetic variation within species, Construction of tools for identification, and Identification of specimens.

On the right side of the form, there are three buttons: 'search family/higher levels', 'search genus or species', and 'Perform gapanalysis'. Below these is a link 'Submit your taxonomic expertises' and a note: 'Help make this site better. Add your taxonomic expertises by clicking on the title.'

At the bottom right, there is a vertical menu with buttons for: Groups, My Unread, My account, Create content, Ad-hoc network, Advertisement, Chat, Chat room, Checklist, Expertise information, Institution, Institutional membership, Interest, Network, and Network interests.

Fig 1. From the EditExpertNet page for registering and specifying taxonomic expertise.

The decisions on which categories to include in the database and the sources used to obtain this information have been documented in D2.1.12. However, these decisions stem back to EDIT' month 18 and a revision now three years later is performed to check if these categories are still valid currently among the professional taxonomists.

To obtain a status of the present used methods and activities performed by taxonomic specialists, we have conducted a survey among the scientific personnel employed at the Natural History Museum of Denmark and the Biological Institute, Copenhagen University. These institutions houses taxonomic experts working with organisms representing all the major branches on the tree of life and they therefore employ all the different methods used when working on all these different taxa. They also represent several years of experience within this scientific discipline are therefore acquainted with different ways to do taxonomic work.

Results

We were happy to receive new and **thoughtful suggestions** from the professional taxonomic community of Copenhagen University. They shared many similarities and we have therefore decided on presenting them in a short summary here:

- Inventories of taxa through geological time to anchor phylogenetic relationships in deep time (palaeontology)
- Building of scientific collections of evidence, reference, comparison, etc., including the registration of those collections.
- Theses and monographs. To be added to the list of taxonomic activities under recognition, description and naming of taxa.

Conclusion

Even though, at first sight the number of suggestions is not overwhelming, these suggestions are still very valuable in other aspects. First and foremost because some of them put the emphasis on establishing collections, a task which is crucial for taxonomy and which is being performed by many of EDIT's partner institutions. Secondly, they do not refuse any of the already chosen criteria, thus showing the ones used in EditExpertNet to cover almost all aspects of conducting modern taxonomy.

References

Henrik Enghoff and Ole Seberg. A Taxonomy of Taxonomy and Taxonomists. *The Systematist* 2006 No. 27, pp 13-15

EDIT Deliverable 2.1.1 Report on existing relevant directories.