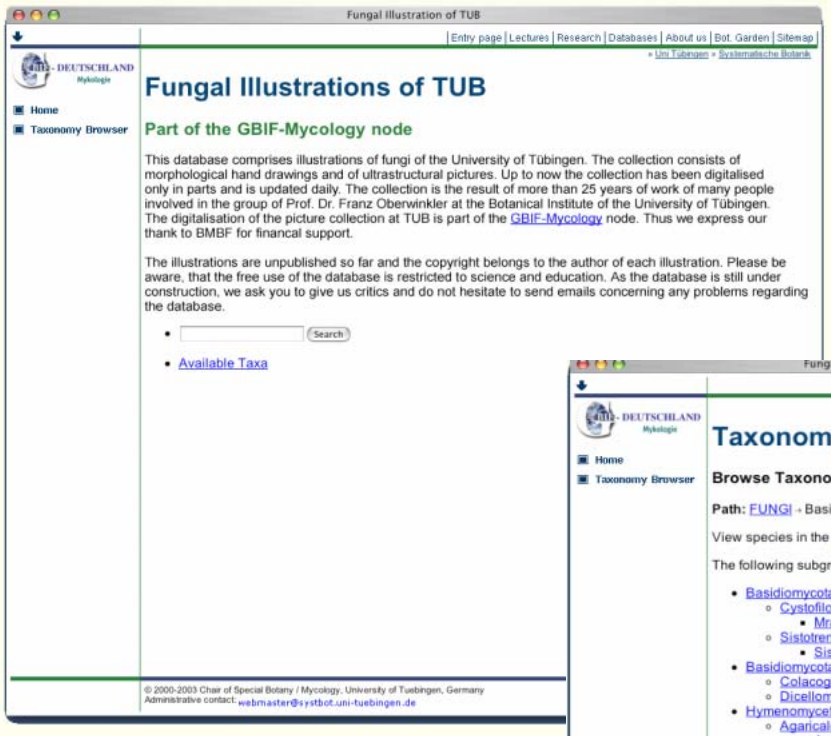
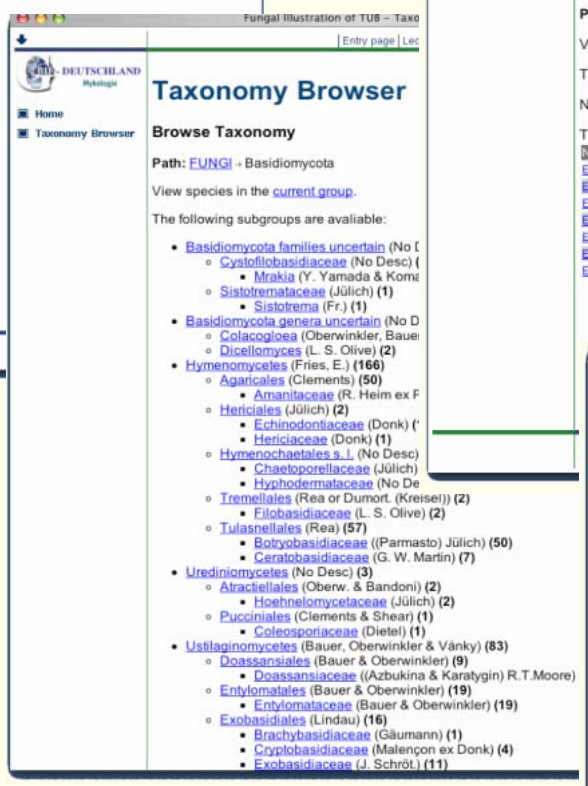
A web-based database of fungal illustrations

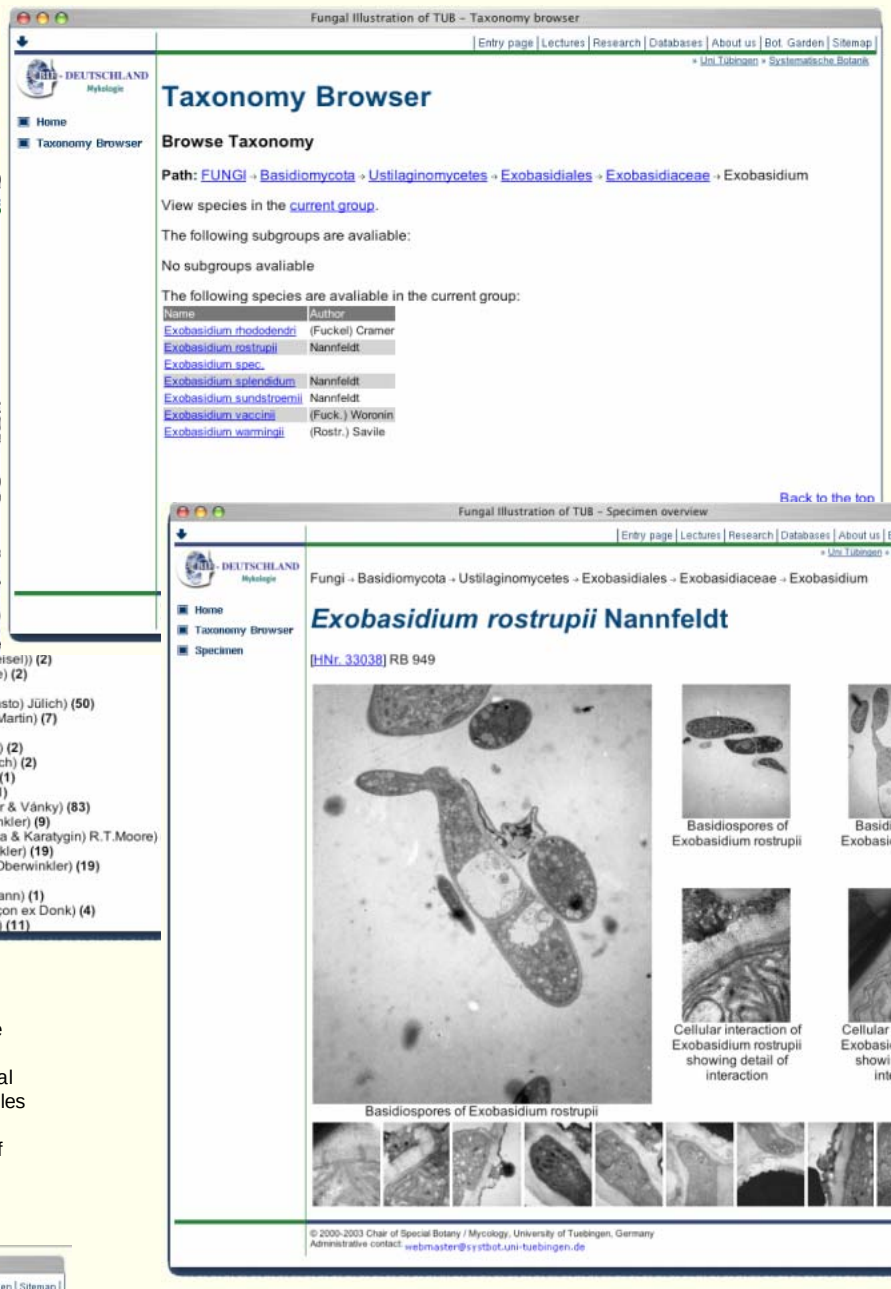
Umbrella project: Establishing the German GBIF Node for Mycology

D. Begerow and F. Oberwinkler
Universität Tübingen, Lehrstuhl Spezielle Botanik/Mykologie,
Auf der Morgenstelle 1, D-72076 Tübingen, Germany

Abstract:
A special collection of some 3000 illustrations obtained from morphological and ultrastructural studies of fungi is digitalised, the data are included in a DiversityWorkbench compatible PostgreSQL database and presented via PHP interfaces in the internet. The collection includes high quality hand drawings of microscopic examinations and unique TEM photographs from ultrastructural studies.

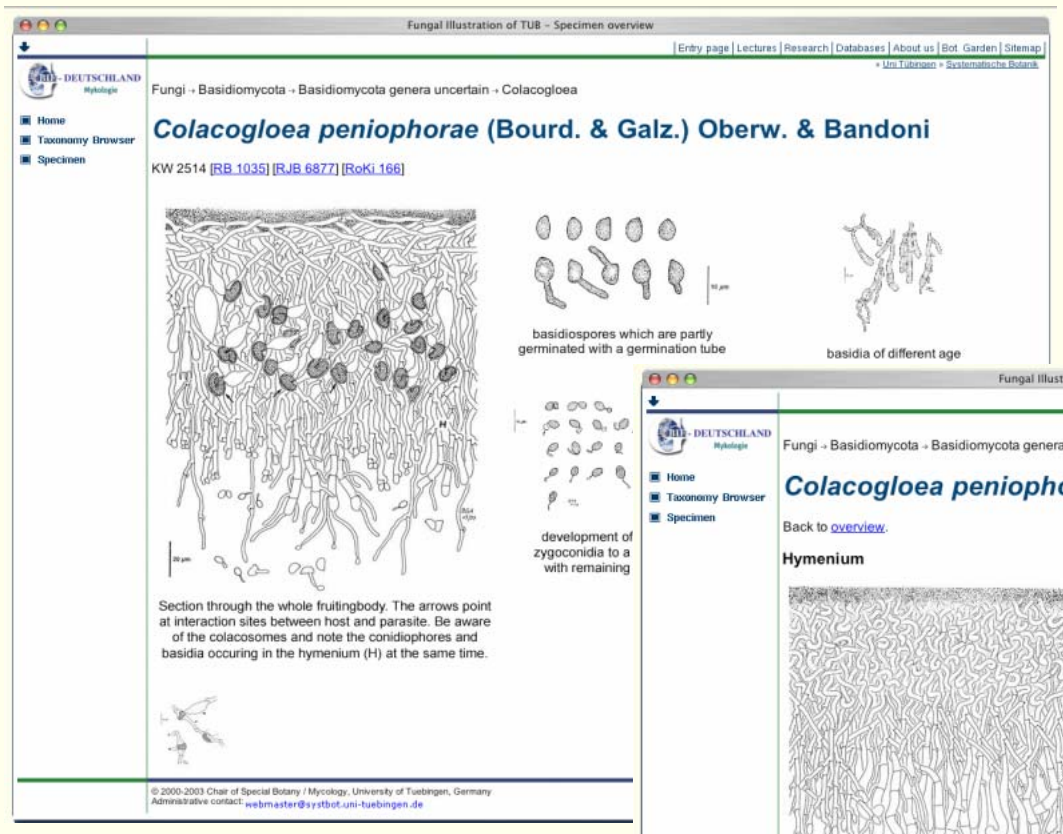


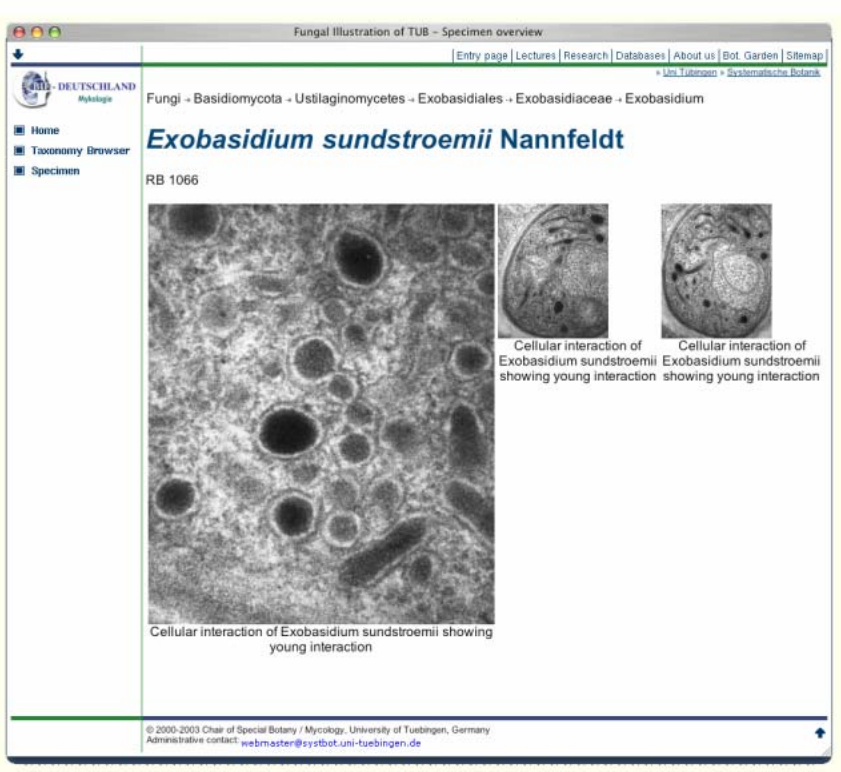


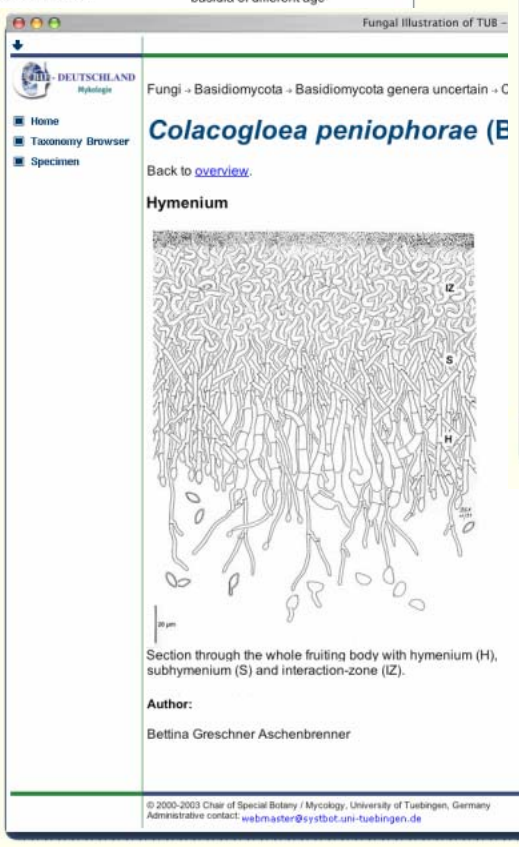


Morphology:
The knowledge of evolution and diversity of fungi is based mainly on collections of the last 200 years. Most of the known species are conserved in herbaria or culture collections and are still available for ongoing studies. For more than 95% of these species no other than a morphological species concept could be applied due to missing data. Therefore, illustrations of these fungi are the most important sources of information on the structure, morphology and anatomy in addition to latin diagnoses.
There is a tradition in Tübingen of famous microscopic drawings, illustrating the morphology of different groups of fungi. Mainly basidiomycetes have been studied between the last 30 years and an impressive collection of published and unpublished drawings has been accumulated. Illustrations of the fruiting bodies as well as detailed microscopic studies of anamorphic and teleomorphic structures of various genera and species are much more informative than descriptions.

Ultrastructure:
Since the availability of transmission electron microscopy in Tübingen this technique became very important for phylogenetic analyses. Ultrastructural studies about hyphal walls, septal pores, parasitic interaction, specialized organelles and nuclear behaviour resulted in over 80.000 photographs. Up to now only a small amount of these illustrations is available to the scientific community outside of Tübingen.







Based on the “Digital Exsiccate of fungi” we went on developing a web-based database compatible and connected to the DiversityWorkbench modules. At the present stage we have included 1500 drawings and 800 TEM photographs. The pictures are presented in different qualities including high resolution for further scientific use. They are kept in a PostgreSQL database and the webinterface is realized in PHP. The ongoing project will connect this database with Diversity Workbench modules and finally the illustrations will be available together with morphological descriptions and reference data. There will be an initial dataset of about 3000 drawings and photographs of different fungal species.

References:
http://www.mycology.uni-tuebingen.de/databases/gbif/
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