

## **PALAEOZOIC AMMONOIDEA IN THE DATABASE SYSTEM GONIAT**

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GONIAT is designed as a tool for investigations on the systematics of the Palaeozoic ammonoids, their palaeogeographic distribution and their biostratigraphic range. This database management system provides not only determinations based on morphological characteristics, but also information on occurrence, duration, literature, and phylogenetic relationships of every taxon of family, genus, and species levels. GONIAT is available in the INTERNET (<http://www.uni-tuebingen.de>; KULLMANN et al. 1998).

GONIAT has been established at the University of Tübingen (Germany) as part of a research project (DFG, grant no. Ku164/8: Diversitätsentwicklung und Provinzialismus der Ammonoideen-Faunen im Paläozoikum). The actual GONIAT version 2.8 is using the software package dBASE IV, equipped with a supplementary GONIAT program. It is arranged in the concept of a relational database structure. It consists of six independent databases connected by three link information files: TAX for taxonomy, MORPHA/MORPHB for all distinctive morphological characters in adult or early and middle growth stages, LIT for literature, LOC for localities, BOUND for biostratigraphy. In order to achieve relevant time planes which can be used on a world-wide scale, the radiometric time scale is used as well as biostratigraphic names of global or regional significance. The morphology is described in two MORPH databases (for different growth stages); because of the linkage of these with TAX and BOUND the user does not recognise the separate parts of GONIAT.

The data of each separate database can be looked up on the screen, either one record after another, or as a list. The linkage of the databases enables the user to switch from one database to another. If viewing TAX, the user can look up the taxonomy and morphology of each taxon, and switch over to a list of the localities and publications connected with that taxon. While examining LOC, the user can immediately produce a list of all species which have been found in a particular layer, and all publications which describe this goniatite locality. In LIT the user can look up the records of the taxa or their localities described in a special publication. The search command enables the user also to search for special characters of the morphology, e.g. characteristics of shell form, ornamentation, suture. Each search condition can be combined with questions concerning the time range.

GONIAT is not yet completed. It includes the complete set of records of the categories Family, Subfamily, Genus, and Subgenus presently recognised. Species and subspecies are covered to at least 95 %. The actual version contains 6219 TAX, 6696 LOC, 1270 LIT, 675 BOUND and 620 PICTURE records. Picture files are incorporated for illustration of ammonoids and localities. System requirements are: IBM compatible PC with DOS, WINDOWS 3.1 or WINDOWS 95/98/NT, 25 MB hard-disk storage; the GONIAT homepage provides the download function for GONIAT database, pictures in PCX format and instruction booklet in WORD6 (including manual of codes, boundaries, classification).