

The Australasian Pollen and Spore Atlas

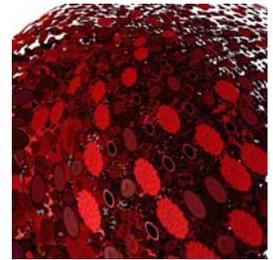
The Atlas is designed to:

- enable online accessibility to the largest collection of pollen and spores information in the Australasian region (currently >15,000 species cataloged with 4400 sp. morphology descriptions and >1000 sp images).



- fills a large-scale geographic gap, complementing the extensive development of modern and fossil palynological databases in the Northern Hemisphere, and extending into South America and Africa

- increased research capacity across the institutes involved in this project through a reduction in duplication and enhanced accessibility to key knowledge available in the Australasian Pollen and Spore Atlas.



Atlas: digital media impression of 2D pollen images taken from pollen held in the Australasian Pollen and Spore Atlas. This was part of an exhibition titled 'Palynology: microscopic life in the world' held at ANU in November 2007. Other images can be viewed at <http://www.digitalator.net/technology/>.

History, Structure and Innovation:

- The Atlas is flexible in its design. It may be browsed according to family, genus or species, or utilised as a multiple access key – where the physical attributes of an unknown pollen grain or spore can be entered. Searches may be performed using graphical or textual keys.
- Details relating to pollen/spore morphology are provided, parent plant habitat, growth characteristics and modern-day geographical distribution. Each taxon is illustrated via several images.



Over 4000 pollen taxa were photographed, described and mounted onto laminated cards in the 1970s to form an easy-to-handle card reference collection in the laboratory.

FileMaker database for in-house cataloging of reference pollen material

Morphological search

Detailed results page with Google Search option

Browsing Family/Genus

Seamless uploading of data to web browser

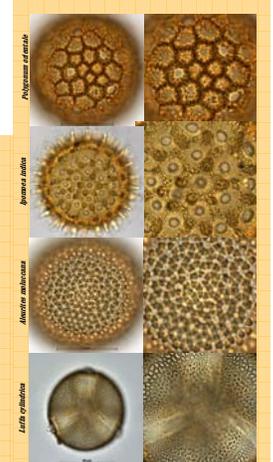
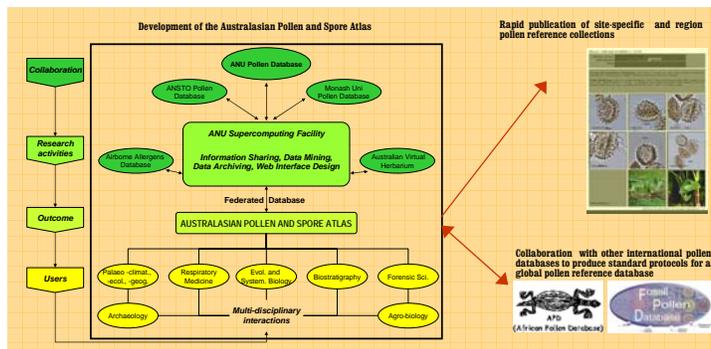


From 2005 state-of-the-art image capturing on Zeiss AxioImager microscope and software enables rapid acquisition and morphological analysis of pollen.

- Provision of a stand alone FileMaker-based database that is easily translated into a user-friendly web/query interface, with a powerful and fast search engine, accessible to professionals as well as novices and students.

Implementation:

- The project team have developed an automated data cleaning and ingest system for FileMaker Pro export data (the current preferred format for in lab data entry). With this software in place the Australasian Pollen and Spores Atlas data can be exported from FileMaker Pro and automatically cleaned, cross-checked and loaded into a relational database (PostgreSQL) on demand.



Future directions:

- Collaboration with international efforts to construct a global atlas incorporating an e-identification key with highest quality digital images that will be compatible (standardised metadata protocol) with other databases around the world.
- through an open and free exchange of information we hope to encourage greater collaboration among researchers across a wide range of research areas, creating the potential for new and innovative research.

Investigators: Dr Simon Haberle, Dr Cassandra Rowe, Mr Stuart Hungerford, Mr Paul Warren, Dr Marcus Buchhorn, Ms Feli Hopf, Mr Andrew Thornhill, Prof Geoff Hope, Dr Chengyu Weng, Dr Janelle Stevenson, Ms Iona Flett, Prof Peter Kershaw, Dr Sander Van der Kaars, Prof John Dodson, Prof David Bowman

http://apsa.anu.edu.au/

Administering Organisation: Australian National University

Collaborating Organisations: Monash University, Australian Nuclear Science and Technology Organisation, University of Tasmania

