

## Euclid expands

AN enhanced edition of *Euclid*, the CD-based interactive identification and information system for all southern Australian eucalypts, has been released by CSIRO Publishing.

*Euclid Second Edition* includes species in southern Western Australia and western South Australia, as well as the south-eastern species covered in the first edition.

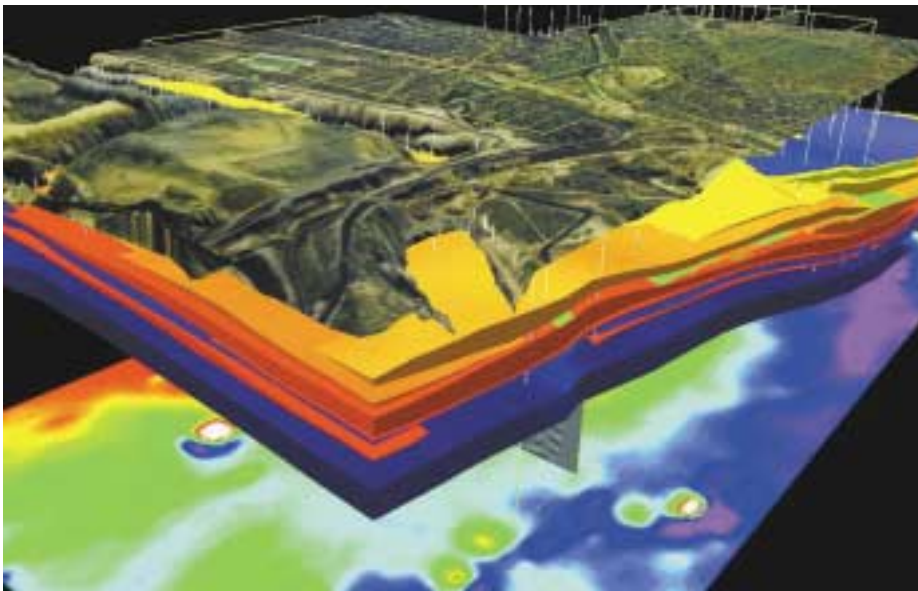
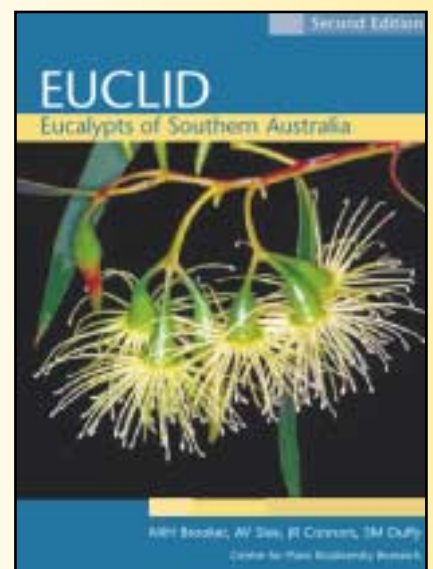
An easy-to-navigate HTML fact sheet is provided for each species, including a botanical description, common and scientific names, synonyms, geographic and ecological information, and notes covering relationships and distinguishing features.

More than 6000 high-quality colour images are included, illustrating the main features of each species, including their seeds and their natural distribution.

Specimens can be identified using any information available. A total of 113 characters, covering the morphology – habit, bark, leaves, flowers, fruits, buds, seeds and juveniles – and some geographic and ecological information, ensure the reliability of the identification key.

*Euclid Second Edition* is designed for a wide range of users, from professional researchers to people with a basic knowledge of plants.

*The package is available for \$110 from CSIRO Publishing, freecall 1800 645 051, email: publishing.sales@csiro.au.*



A combination of remotely sensed and physically measured data will be collected in the Victorian Geotraverse project. Top (brown layer): 3D surface topography with an image of surface features draped over the topographic shape. Middle (coloured layers): 3D models of rock units, created by interpreting various sources of geological information including drill hole, underground mine and geophysical data. Bottom (multicoloured image): geophysical image such as gravity or aeromagnetism. Grey triangle below dark blue layer: seismic cross section.

## An educated rush

Cries of 'there's gold in them there hills' may echo across the Victorian goldfields once again, as a new project designed to probe the state's subsurface geology gets under way.

The Victorian Geotraverse will use state-of-the-art technology to examine the top 10 kilometres of the Earth's crust across a 500 km slice of Victoria. Using seismology, drill cores and aerial survey techniques, a team of scientists from 15 research organisations will map the surface and subsurface geology, allowing them to pinpoint gold and other mineral deposits.

'The Victorian Geotraverse has two scientific parts to it,' Professor Neil Phillips of CSIRO Exploration and Mining says.

'The first is the establishment of a geological framework, where we map the faults, folds, granites, volcanic rocks and other geological surface features characteristic of old gold centres, such as Ballarat. That way we can identify new gold centres that may be buried under metres of soil.

'The second part is a 500 km seismic line, where we will "x-ray" the top 10 km of crust using seismic equipment to send shock waves through the crust. The results from this will tell us where the soil cover is deep or shallow, and where subsurface faults and folds and different rocks are.'

By combining the information obtained from each process, the team will be able to make educated estimates about where previously unidentified gold-bearing rocks might lie.

The research team will also look for underground pods of saline water. As saline groundwater is more conductive than freshwater, airborne electromagnetic survey equipment, originally designed to find ore bodies, will be used to measure the change in conductivity in the top 100 m of the Earth's crust.

'We're used to thinking about salinity in just two dimensions: what's happening on the surface or close to it,' Phillips says.

'But salinity is a four dimensional problem, and we need to understand its movement in depth and time, as well as length and breadth.'

It is hoped the research will benefit both the gold mining industry and land managers in the rich agricultural areas of the Murray Basin. The project will run for the next two years and will involve four CSIRO divisions, four universities and a number of earth science research organisations.

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