



AMIRA International has spent ten years developing the Data Metallogenica on-line encyclopaedia of ore deposits (www.datametallogenica.com), assisted by more than 100 sponsors (mining companies, government organisations and professional societies) around the globe. The extensive web resource is impressive in its scope and coverage and contains much unique material that is continuously being augmented with both rock samples and descriptive material.

Data Metallogenica's primary objectives are to develop as:

- The premier web portal for "top-level" information on global ore deposits.
- The leading information source and rock reference base for experienced geologists, analysts and regulators.
- A vital training resource in companies and survey organisations for developing geologists.
- An indispensable education and research resource for university geoscience students and teachers.
- A repository of "fragile" and transient exploration and deposit data donated by individuals and companies – an ultimate world encyclopaedia of mineral deposits that is permanent and easily accessed.
- An easily navigated threshold to third-party the detailed data of commercial providers, government surveys and university research groups.

DM is not-for-profit but must be self-funding. Your support is essential for its continued growth.

Year-In-Review

2008 was a fruitful year for DM which saw some valuable new initiatives as well as the continuing flow of high quality new data and samples to augment the sample collection and extend the data galleries.

New Map Search Function



Possibly the most important innovation of 2008 was the development and release of our new interactive facility *MapSearch*, based on Microsoft Visual Earth. As an alternative to advanced text-box searching, *MapSearch* provides a highly intuitive, scalable, satellite view of the world, where every deposit in DM appears as an icon and every icon links to the matching deposit page in the database.

In practice, *MapSearch* is organised by major commodity groupings, which can be separately turned on or off. Moving the mouse over any icon will display the deposit name, summary details and a live link to the deposit page in the database. The public can freely use this facility but only subscribers can open the file links on the portal pages.

We haven't forgotten Apple Macintosh users either; *MapSearch* is now fully compatible with the Mozilla Firefox web browser. PC users can use either Firefox or Microsoft Explorer: Firefox is faster but Explorer is recommended.

New Economic Geology Thesis Data

The complete listing of geoscience theses (all disciplines) from all Australian universities contained in the **Australian Geoscience Thesis Database** is now available to subscribers of *Data Metallogena*. More than 10,500 thesis titles are listed, including entries from geoscience departments no longer in operation, as well as over 1,600 abstracts of theses on economic geology.

DM subscribers can search the database using various criteria, including geoscience discipline and commodity.

In the future it is planned to add listings of theses from other countries progressively through AMIRA's proposed Global Geoscience Thesis Database project (P1018).

A further new and exciting dimension to the DM website introduced over two years has been the full text of important university mineral deposit theses, donated by their authors. The new *MapSearch* function can also be used to locate those deposits with associated full text theses. These theses are currently available:

- The geology, genesis and exploration context of the **Cadia** gold-copper porphyry deposits, New South Wales, Australia (Alan Wilson, 2003)
- Mid-Cretaceous magmatic evolution & intrusion-related metallogeny of the **Tintina** gold province, Yukon & Alaska (Craig Hart, 2004)
- **El Teniente** porphyry copper-molybdenum deposit, Central Chile (James Cannell, 2004)
- New identity of the kimberlite melt: constraints from the unaltered diamondiferous **Udachnaya-East** pipe kimberlite, Siberia, Russia (Maya Kamenetsky, 2005)
- Volcanic stratigraphy and hydrothermal alteration of the **Petikkäs South** Zn-Pb-Cu-Au-Ag volcanic-hosted massive sulfide deposit, Sweden (Denis Schlatter, 2007)
- A refined model for the magmatic, tectonometamorphic & hydrothermal evolution of **Leonora** district, Eastern Goldfields province, Yilgarn Craton, Western Australia (Matt Baggott, 2006)
- Evolution of volcanism & hydrothermal activity in the **Yanacocha** mining district, northern Peru (Tony Longo, 2005)
- Architecture & emplacement origin of Archaean komatiitic dunite & associated NiS mineralisation: **Mt Keith**, Agnew-Wiluna Greenstone Belt, Yilgarn Craton, Western Australia (Nicholas Rosengren, 2004)
- The **Marcona-Mina Justa** district, south-central Peru (Huayong Chen, 2008)
- Multivariate simulation of channel iron ore deposits at **Bungaroo & Yandicoogina**, Western Australia (Cameron Boyle, 2007)
- Breccia-hosted copper-molybdenum mineralisation at **Rio Blanco**, Chile (Peter Frikken, 2003)
- The geological context of alteration & gold mineralization at the **Campbell Mine, Red Lake**, Ontario (Robert Penczak, 1996)
- Petrogenesis of **Mount Dore**-style breccia-hosted copper±gold mineralization in the Kuridala-Selwyn region of northwestern Queensland (Trevor Beardsmore, 1992)
- The **Yanacocha** epithermal gold deposits, northern Peru: high-sulfidation mineralization in a flow dome setting (Stephen Turner, 1997)
- The petrogenesis of the **Wesselton** Mine kimberlites, Kimberley, Cape Province, RSA (Simon Shee, 1985)
- Tectonic, magmatic and metallogenic evolution of the **Cajamarca** mining district, northern Peru (Charlie Davies, 2002)
- The integration of structural geology and directional variography at three orogenic gold deposits (**Sunrise-Cleo, Union Reefs, Randalls**): implications for orebody geometry and mine practice (Phillip Newton, 2000)
- Geology, geochemistry and genesis of the **El Penon** epithermal Au-Ag deposit, Northern Chile (Ian Warren, 2005)
- **Cornish tin-tungsten** - the tectonics of Variscan magmatism & mineralisation in south west England (Nicholas LeBoutillier, 2002)

- Geology and origin of the **Century** zinc deposit (Graeme Broadbent, 1999)
- The evolution of supergene enrichment in the **Morenci** porphyry copper deposit, Greenlee County, Arizona (Steve Enders, 2000)
- Porphyry-related hydrothermal systems in the **Ertsberg-Grasberg** District, Papua, Indonesia (Kylie Prendergast, 2003)
- **Rio Blanco** - A new methodology for the study of the magmatic-hydrothermal transition in felsic magmas: applications to barren and mineralised systems (Paul Davidson, 2004)
- **Ruddock Creek** - Quantitative interpretation of responses of helicopter-borne concentric loop EM geophysical survey systems (Marcus Svilans, 2006)
- The **Tsumeb** orebody, Namibia, and related dolostone-hosted base metal ore deposits of central Africa (Martin Hughes, 1987)
- Geochemical analysis & modelling of the weathering profile at the **Las Cristinas** gold-copper deposit, Venezuela (Marcus Willson, 1998)
- The geological setting, geochemistry & geochronology of the host rocks to high- and low-sulphidation style **epithermal systems of the eastern Avalon belt**, Eastern Avalon Zone, Newfoundland (Greg Sparks, 2005)
- **Castlemaine Goldfield**: a reappraisal & assessment of economic potential (Adrian Moore, 1983)
- Lithogeochemical alteration around the **Century & Elura** Zn-Pb-Ag deposits: detecting alteration expressions in deep & near surface environments (Michael Whitbread, 2007)
- Provenance and tectonic setting of late Archaean metasedimentary rocks in the **Eastern Goldfields** of Western Australia (Matthew Godfrey, 2004)
- **Carlin** - Exploring conceptual geodynamic models (Chris Wijns, 2004)
- Regional Setting of Gold Mineralisation in the **Mudgee-Gulgong** District NSW (John Watkins, 2007)
- An infrared spectral reflectance study of the hydrothermal alteration minerals from the **Campamento** Au/Ag Deposit, Southern Mexico (Nicholas Jansen, 2007)
- The geochemistry and origin of xenoliths from the **Roberts Victor Mine** (Chris Hatton, 1978)
- Metamorphic petrology of the SJ area (**Rossing**), Swakopmund district, South West Africa (Colin Nash, 1971)
- Facies architecture, geochemistry and tectonic significance of the Ural Volcanics and the Mount Hope Volcanics, **central Lachlan Orogen**, NSW (Kate Bull, 2006)
- Textural evolution of the **Hellyer** massive sulphide deposit (Gary McArthur, 1996)
- The tectono-magmatic evolution of the **Tasman Fold Belt** in NE Queensland, Australia (Ivo Vos, 2005)
- The setting, geometry and timing of intrusion-related hydrothermal systems in the vicinity of the **Batu Hijau** porphyry copper-gold deposit, Sumbawa, Indonesia (Steve Garwin, 2000)
- Metallogensis of the **Jales** Au District, Northern Portugal (Diogo Rosa, 2001)
- Geology and genesis of the **Bulyanhulu** gold deposit, Sukumaland Greenstone Belt, Tanzania (Claire Chamberlain, 2003)
- Magmatic and hydrothermal evolution of the **Cripple Creek** gold deposit, Colorado, and comparisons with regional and global magmatic-hydrothermal systems associated with alkaline magmatism (Eric Jensen, 2003)
- Volatile and precious metal geochemistry of the **Mount Isa** ores and their host rocks (Peter McGoldrick, 1986)
- Structural and geochemical evolution of the **Rosario** copper-molybdenum porphyry deposit and related copper-silver veins, Collahuasi District, Northern Chile (Glen Masterman, 2003)
- The Upper Critical and Lower Main Zones of the **Eastern Bushveld Complex** (Charlie Seabrook, 2005)
- The geology, timing of mineralisation, and genesis of the **Menninnie Dam** Zn-Pb-Ag Deposit, Eyre Peninsula, South Australia (Mike Roache, 1996) – this intrusive-related deposit is coeval with the Olympic Dam mineralisation event
- Geology and genesis of the **Mammoth** Cu deposit, Mt Isa Inlier, Australia (Darryl Clark, 2003)
- Tectonostratigraphic evolution of the Archaean volcanic-intrusive-sedimentary **Boorara Domain** succession, Eastern Goldfields Superterrane, Yilgarn Craton, Western Australia (Jessica Trofimovs, 2004)
- Magmatic-Hydrothermal Gold Deposits of the **Maricunga Belt**, Northern Chile (John Muntean, 1998)
- Surface detection of **alkaline ultramafic rocks** in semi-arid and arid terrains using spectral geological techniques (Michael Hussey, 1998)
- Geophysical & GIS applications to **Sediment-hosted Zn-Pb Exploration** (Mark Duffett, 2000)

This development allows much primary data that previously was largely unavailable to become accessible to exploration geologists and researchers all over the world. We are very grateful to the contributors for allowing their data to be presented to the global community, and urge other students to consider placing their own theses in DM in the future to add value to their work.

New Commodity Galleries

Another style of data gallery has been added to Data Metallogenica. These are galleries which contain global commodity reviews that will be a significant resource for teachers, students and many economic geology professionals. The content of the commodity compilations may be augmented by more detailed data contained in galleries attached to individual deposits.

- **Uranium** – a comprehensive review of volcanic- and sediment-hosted uranium deposit models has been provided by David Thomas, Gerard Zaluski, Dan Brisbin and Garth Drever of Cameco. In addition, an excellent review of the Colorado Plateau roll-front uranium deposits was provided by Bill Boberg of Ur-Energy Inc. These reviews are complemented by individual deposit descriptions including sample photographs and other data from almost 200 uranium deposits within the general DM database.
- **Nickel and PGEs** – global reviews of komatiitic sulphide deposits by Steve Beresford and of nickel laterite deposits by Mick Elias and INCO are available, together with a comprehensive summary of the petrogenesis of the Bushveld Layered Intrusion by Wolf Maier and a global review of PGEs by Tony Green.
- **Opals** – a review of opals from the Australian opal fields is accompanied by individual deposit data from Lightning Ridge and other famous deposits such as Coober Pedy and Andamooka.
- **Porphyry Copper** – a review of the latest thinking on porphyry copper models by Professor David Cooke and John Holliday.
- **Broken Hill Type Pb-Zn-Ag** – a major global review of the fundamental characteristics of this important class of base metal deposits by Professor Steve Walters
- **Skarns** – all you need to know about the fundamental characteristics of all types of skarns by Professor Larry Meinert
- **VHMS Petrochemistry** – a review of the use of petrochemistry in regional exploration for VHMS deposits provided by Steve Piercey of Laurentian University.

The galleries can be found by clicking on the 'Commodity Presentations' button located on the main Search Screen, displayed immediately after logging on.

New Data Galleries

Through generous donations of data by individuals and companies, new data galleries and other information containing numerous maps, sections and field photos continue to be constructed for major deposits in a range of commodities. About 700 galleries containing thousands of maps and photos are now available, with many more waiting to be loaded. Some of the major recent additions include:

- **Copper**
 - Boyongan, Tampakan and Didipio-Dinkidi, Philippines – major new galleries of three significant new porphyry copper discoveries in Mindanao and Luzon.
 - Xietongmen, China – an additional gallery on this new discovery in the Himalayas.
- **Gold**
 - Fruta del Norte, Ecuador – the discovery history of a major new blind epithermal discovery provided by Aurelian Resources
 - Chelopech, Bulgaria – a high-sulphidation Au-Cu deposit owned by Dundee Precious Metals.
 - Macraes and Reefton, New Zealand – two significant gold deposits from the South Island, owned by Oceanagold.
 - Sons of Gwalia, Tower Hill, Ghost Crab and Southern Cross, Western Australia – new galleries of typical Archaean lode gold deposits from the Eastern Goldfields, as well as an important discovery gallery for the new and different major Tropicana deposit from the easternmost parts of the Yilgarn Block.
 - Cracow, Queensland – a significant new epithermal gold producer
 - Wattle Gully and Castlemaine, Victoria – classic 19th Century lode gold producers in the central Victorian goldfields
 - Sukhoi Log, Siberia – additional galleries showing the petrographic and chemical evolution of different generations of pyrite in this major and enigmatic deposit, provided by Professor Ross Large
 - Ayanfuri, Ghana and Sabodala, Mali – exploration histories provided by Perseus Mining and Mineral Deposits respectively for these important Birimian deposits.
 - Donlin Creek, Pogo and Fort Knox, USA – new galleries on several major gold deposits in Alaska.

- **Nickel**
 - Goro nickel laterite, New Caledonia – a giant new oxide laterite resource under development by Vale Inco, with production planned for 2009.
- **Base Metals**
 - Lennard Shelf, Western Australia – new data on this classic but high-grade MVT province in the Kimberleys now owned by Teck.
 - Windy Craggy, British Columbia – the largest volcanic-hosted massive sulphide deposit known.
- **Uranium**
 - Yeelirrie, Western Australia – further information on the type example of calcrete uranium deposits
 - Kintyre, Western Australia – new data on this major but undeveloped unconformity-style deposit in the Rudall Province
- **Diamonds**
 - Fort a la Corne – an additional gallery provided by Barbara Scott-Smith.
- **Tin-Tungsten-Molybdenum**
 - Merlin, Queensland – an exciting new discovery of an unusual high-grade Mo-Re resource located within the previously known Mt Dore copper deposit in the Cloncurry district
 - Hemerdon and South Crofty, Cornwall – classic tin deposits from SW England
 - Totoral, Bolivia – information on a vein tin deposit near Oruro, provided by Nic LeBoutillier.
 - Mactung and Cantung, Canada – some of the world's foremost tungsten deposits, located in the Yukon

Sponsorships and Subscriptions

Most of the world's major mining groups are Gold Sponsors of DM, and we also have the support as Silver Sponsors of almost fifty small to medium sized mining and exploration groups from around the world. It would be great to see even more support for DM's effort in providing a high quality technical data resource for the future. The more tangible benefits of becoming a Silver Sponsor (or even a Gold one), apart from a feeling of contributing to a very worthwhile cause, are:

- Permanent recognition as a Foundation Sponsor on the DM home page, with a direct hotlink to your own home page
- One year of free, unlimited web access for all staff
- Permanent major discount to annual web subscription fees (non-sponsors pay an additional 50%)
- The right as a Silver Sponsor to nominate one university in developing countries in Asia, Africa, South America, Russia or eastern Europe for free web access (Gold Sponsors have the right to nominate three universities)
- Free access to the Data Metallogena Centre (to be re-established in 2009)

The cost to sponsor at Silver level is a one-off payment of only A\$8,000 (about US\$5,000, payable over two years if required) – details are on the website.

The other main source of funds to allow the continued growth of DM is through annual subscriptions, which are graded in cost from individual access and usage (A\$100 or US\$75) through to corporate and organisational subscriptions of various levels. Subscriptions allow unlimited access to all users. Over 15,000 visitors have bookmarked the DM site – *why not convert your interest to become an active supporter?*

Please consider:

- [Becoming a web subscriber](#) or [Becoming a sponsor](#)

Apart from providing the necessary financial support for continued growth, your involvement will give you and your colleagues unlimited access from virtually anywhere in the world to a great and growing unique database of real value.

We would welcome your individual or corporate support in becoming part of this great enterprise. The cost is surprisingly low at about \$1 – 2 per week per geoscientist.

Please circulate this email to your colleagues and friends.

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