



Over the past 8 years, AMIRA International with the help of over 100 sponsors (mining companies, government organisations and professional societies) from around the globe has been building the foundations of a community world encyclopaedia of ore deposits through its project *Data Metallogenica* (www.datametallogenica.com). There is already an impressive amount of material available on the website (over 6 gigabytes), much of it unique, which is being continuously augmented with new material. DM is self-funding and not-for-profit. DM is designed to be a resource for reference, training and education as well as a permanent repository of technical data on global mineral deposits.

Recent news in the life of DM includes:

New Sponsorships

We have now received several new Silver sponsorships over the past few months, which greatly help support our efforts in continuing to build DM. The new sponsors are:

- **Buenaventura** – our first sponsor from Peru, with interests in several mines including Yanacocha, Cerro Verde and Colquijirca
- **Dundee Precious Metals** – an active explorer and miner in eastern Europe, including the Chelopech gold mine in Bulgaria
- **Jabiru Metals** – an emerging Australian base metal miner currently developing the new Jaguar VHMS deposit in the Yilgarn
- **Resolute Mining** – active miner and explorer in Africa and Australia, particularly in Tanzania with Golden Pride and in Mali with Syama
- **St Barbara Mines** – a Western Australian producer and developer, including Marvel Loch and other deposits in the Southern Cross area and the famous Sons of Gwalia mine near Leonora

We now have almost fifty Silver Sponsors from 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 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 Metallogenica Centre (to be re-established in 2008)

The cost to sponsor at Silver level is only A\$8,000 (about US\$7,000, payable over two years if required) – details are on the website under the 'New Sponsors' button.

New Commodity Galleries

In the last year, 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. Existing reviews of nickel laterite and PGEs have now been joined by:

- **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. These include:
 - *Unconformity-style* – the classic deposits of the Athabasca and Alligator River regions
 - *Sandstone-hosted* – exemplified by the deposits of the Colorado Plateau and central Asia

- *Quartz-pebble conglomerate style* – covering the Witwatersrand and Elliott Lake districts
- *Volcanic-hosted* – such as the McDermitt Caldera in Nevada and the Streltsovko Caldera in Russia
- *Calcrete-hosted* – including the Yeelirrie deposit in Australia and Langer Heinrich deposit in Namibia
- *Collapse breccia pipes* - such as in Arizona
- *Black shale-hosted* – including the eastern European deposits mined extensively by the former Soviet Union

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.

- **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.
- **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 Sampling

Extensive sampling over the past year by Peter Laznicka has seen the addition of many new sets of representative samples from previously under-represented parts of the world. New sample sets accompanied by brief descriptions and photographic data galleries are now available on the DM website for:

- **Russia**
 - Kola Peninsula deposits
 - Monchegorsk – this mafic-ultramafic intrusion was the first major supplier of Ni-Cu in Russia
 - Khibiny alkaline complex – the world’s largest magmatic apatite deposit
 - Lovozero alkaline complex - Nb, Ta, Zr, REE
 - Kovdor alkaline complex - Fe, Zr, Ta
 - Afrikanda alkaline complex - Fe, Ti
 - Olenegorsk – BIF-hosted Fe deposit
 - Ural Mountains deposits
 - Kachkanar-Gusevogorsk - Fe, PGE deposits in the Urals mafic-ultramafic complexes
 - Lipovo – nickel laterite
 - Berezovskii – produced more than 10 million ounces of gold since the 18th century
 - Saf’yanovka, Uchaly, Uzel’ga, Molodezhnoe, Sibai, Gai and Dombarovka – all copper-zinc VMS deposits in the Urals Belt
- **Ukraine**
 - Krivoi Rog – one of the world’s great iron ore deposits
 - Nikopol – the world’s largest sediment-hosted manganese deposit
 - Zheltye Vody – the first major domestic uranium deposit discovered in the USSR (1946)
 - Klinty, Surozh, Mayske-Savran and Saulyak gold deposits
 - Beregovy - Pb, Zn, Cu, Ag, Au
- **China**
 - Deposits from the Jiangxi Province in eastern China
 - Tongchang (Dexing) porphyry Cu-Mo – China’s largest porphyry copper mine
 - Jinshan – shear-hosted gold deposit
 - Yinshan – Mesozoic vein style base metal deposit
 - Yongping base metal exoskarn
 - Lengshuikeng - a large “porphyry Pb-Ag” deposit
- **Saudi Arabia**
 - Gold and base metal deposits from the Neoproterozoic Arabian Shield
 - Al Masane - Cu, Zn
 - Jabal Guyan - Au
 - Al Halahila - Zn, Cu

- Wadi Kutam - Zn, Cu
- Ash Sha'ib - Zn
- Hamdah – Au
- Al Hajar - Au, Ag, Zn, Cu
- Al Gohafah - Au
- **Oman**
 - Samail Ophiolite Complex and associated Bayda and Aarja Mines, Lasail VMS group

In addition, new deposit sets have been obtained from Sweden (including Kristineberg), the Czech Republic and Australia (including Thalanga, Liontown, Ravenswood, Girilambone, Tritton and Peak).

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. More than 700 galleries containing thousands of maps and photos are now available. Some of the major recent additions include:

- **Copper**
 - Bingham Canyon, USA – an excellent geological review of one of the world's classic porphyry copper deposits provided by Kennecott. Bingham is the home of low-grade open pit copper mining and is now the largest man-made excavation on earth.
 - Spence, Chile – this BHP Billiton deposit in the Atacama Desert has recently commenced production. Its discovery was characterised by its being located blind through complete gravel cover.
 - Pebble, Alaska – an excellent new discovery history on this major resource, provided by Mark Rebagliati and Northern Dynasty Minerals
 - Cadia, Australia – previous information on this classic alkalic porphyry copper-gold system has been augmented by detailed data from a recent PhD thesis by Alan Wilson.
 - Xietongmen, China – summary data by Gerald Panneton on a significant new discovery by Continental Mining in the Tibetan Plateau, provided by Continental Minerals.
- **Gold**
 - Challenger, South Australia – an unusual but significant Archaean lode gold deposit found in the Gawler Craton, being mined by Dominion Mining; “unique” in that it is in part possibly remelted during granulite-facies metamorphism. New data also includes a summary report on calcic sampling by Mel Lintern of CRC LEME.
 - Tanami, Northern Territory – comprehensive reviews provided by the NTGS and Geoscience Australia accompany extensive sample photographs from deposits in this large Proterozoic gold province. Also an excellent discovery history for Groundrush has been added.
- **Nickel**
 - Goro nickel laterite, New Caledonia – a giant new oxide laterite resource under development by CVRD Inco, with production planned for 2008.
- **Base Metals**
 - Finlayson Lake district, Canada – contains a number of significant Devonian-Carboniferous VHMS deposits in the Yukon Tanana terrane including Kudz Ze Kayah, Wolverine and GP4F as well as the Cu-Co-Au deposit Fyre Lake and Cu-rich mineralisation at Ice. Provided by Steve Piercey of Laurentian University.
 - Newfoundland, Canada – a review of VHMS deposits in the Appalachian Belt in Newfoundland, including Buchans, was also provided by Steve Piercey of Laurentian University.
- **Alumina**
 - Darling Range bauxite deposits, Western Australia – a review of current mining and rehabilitation practice at these major Australian deposits was provided by Alcoa.
- **Iron**
 - Labrador Trough deposits, Canada – deposits such as Labrador City, Wabush, Mont Wright and Schefferville are described in material provided by the Newfoundland & Labrador Department of Natural Resources. These deposits occur within Superior-style (granular) iron formations.
 - Capanema deposit, Minas Gerais, Brazil – a weathering history of an itabirite (BIF) deposit in the Quadrilatero Ferrifero, provided by Erick Ramanaidou from CSIRO.
 - A comprehensive review of Tertiary channel iron deposits in the Pilbara of Western Australia by Erick Ramanaidou, Dick Morris & Rudi Horwitz (courtesy of the Geological Society of Australia).

Thesis Data on DM

The value of Data Metallogenica as a repository of useful and accessible knowledge for the minerals industry is continually being reinforced. A new and exciting dimension added to the DM website over the past year is the full text of university theses, donated by their authors. Recent examples include:

- 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 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)
- Facies architecture, geochemistry and tectonic significance of the Ural Volcanics and the Mount Hope Volcanics, **central Lachlan Orogen**, NSW (Kate Bull, 2006)

Theses previously available on DM included:

- Textural evolution of the **Hellyer** massive sulphide deposit (Gary McArthur, 1996)
- 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)
- Metallogenesis 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)
- 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)
- Geophysical & GIS applications to **Sediment-hosted Zn-Pb Exploration** (Mark Duffett, 2000)
- Surface detection of **alkaline ultramafic rocks** in semi-arid and arid terrains using spectral geological techniques (Michael Hussey, 1998)
- Geology, geochemistry and genesis of the **El Penon** epithermal Au-Ag deposit, Northern Chile (Ian Warren, 2005)
- The tectono-magmatic evolution of the **Tasman Fold Belt** in NE Queensland, Australia (Ivo Vos, 2005)

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.

In addition, the complete listing of geoscience theses from all Australian universities contained in the **Australian Geoscience Thesis Database** has generously been released by project sponsors to subscribers of *Data Metallogenica*. More than 10,000 thesis titles are listed, including entries from geoscience departments no longer in operation.

Mineral Exploration Roundup

As part of their sponsorship of Data Metallogenica, the Association of Mineral Exploration BC generously provided DM with a trade booth at Mineral Exploration Roundup in Vancouver in January. The booth once again proved very popular, especially a demonstration fly-by movie captured with Google Earth, which visited many of the world's great mineral deposits. The lucky winner of the premium Australian red wine was Andrea Maxey from AngloGold Ashanti in New York.

We will be back in our usual spot on the Mezzanine in 2008 so hope to see you there. Live wireless access to DM is available at the booth for you to try your own searches and see the treasures already stored in DM.

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

The primary objectives of Data Metallogenica are to be:

- A primary web portal for "high-level" information on global ore deposits.
- An information source and rock reference base for experienced geologists, analysts and regulators.
- A training resource for younger geologists in companies.
- An education and research resource for students and teachers at universities.
- A permanent and easily accessible repository of much "fragile" and transient data held by individuals and companies – an ultimate world encyclopaedia of mineral deposits.
- A fast integrated link to detailed and supporting quality data sets elsewhere, including commercial providers, government surveys and university research groups.

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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Data Metallogenica – building the global encyclopaedia of ore deposits