



FIELDNOTES

From the Director's desk

For a number of years liaison with our main customers has been an increasingly important feature of the management style of the Geological Survey. This has been achieved primarily through the Geological Survey Liaison Committee and its various specialized sub-committees, through the annual publication of our work program and plans for the forthcoming year and, for the last two years, the publication of a GSWA Annual Review which documents our achievements over the preceding year.

These are formal reporting mechanisms and although a lot of informal interaction goes on, it is largely behind the scenes. We hope that FIELDNOTES will strengthen our less formal communication with our customers by keeping them informed about where we are working, how we are progressing, where we are going next, and what we have produced – on a regular basis. We plan to use it to tell you a little more about some of our publications than you may get from a catalogue, or abstract, and to bring to your attention internal and external issues affecting the Survey that may be of interest or importance to you.

I hope you find this newsletter interesting. We intend to publish FIELDNOTES quarterly in future, and welcome your comments and suggestions for further issues.

Pietro Guj
Director
Geological Survey of Western Australia

A century of service to a million mile state

Geological Survey of Western Australia

DEPARTMENT OF MINERALS AND ENERGY OF WESTERN AUSTRALIA





NEW ASSISTANT DIRECTOR

Tim Griffin

Assistant Director
Regional Geoscience Mapping
and Exploration Branch

Upon the retirement of **Peter Dunn** the Geological Survey of Western Australia has appointed **Tim Griffin** to the position of Assistant Director to head the Regional Geoscience Mapping Branch.

Tim completed a Bachelor of Science (Hons) at the Australian National University in Canberra and obtained a PhD from James Cook University in Queensland.

He joined the Geological Survey of Western Australia in 1980 after three years work with the Geological Survey of Papua New Guinea.

Highlights of Tim's career include mapping and geochemistry of granitoid rocks on the south coast of New South Wales; mapping, geochemistry and mineralogy of basaltic rocks in the McBride Province in North Queensland; mapping of Tertiary igneous intrusive rocks in association with major thrusts in the highlands of Papua New Guinea; mapping structural repetition of greenstones in the granite–greenstone terrane of the Eastern Goldfields and mapping major Early Proterozoic igneous sequences in the Kimberley region.

During his time with the Geological Survey, Tim spent five years as Officer-in-Charge of the GSWA Kalgoorlie office and, prior to his appointment to the position of Assistant Director, was Project Leader for the Eastern Goldfields Regional Geological mapping team.

“REPORT 39” - WORTH ITS WEIGHT IN GOLD

Report 39 - **“Gold Mineralization in the Menzies–Kambalda Region, Eastern Goldfields, Western Australia”** by W. K. Witt is a valuable addition to the literature relating to Archaean gold mineralization in Western Australia. Most published works in this area are dated, while more recent descriptions have been biased towards larger deposits in greenschist facies greenstones. This report and the three accompanying GSWA Records (Witt, 1992/13, 14 and 15) fill a gap in the literature by systematically documenting all gold mines in a densely mineralized portion of a very large greenstone belt, and attempting to relate these gold occurrences to regional structural, metamorphic, and lithostratigraphic observations.

In gathering data for this report, each of the 215 mines in the region that produced more than 5kg of gold was visited, and host rocks, structural controls, and alteration styles (including textural and fabric relationships) were recorded. The author was aided in this task by an appreciation of the regional geological history derived from involvement in the mapping of several relevant 1:100 000 sheets. Although many mines have been abandoned for up to 80 years, meaningful data were obtained from most localities. Field work was biased towards documenting smaller mines and mining areas which have not been described in the past. More extensive investigations were carried out at a number of selected deposits where there was ready access to mine exposures and drillcore. Approximately 200 days in the field and laboratory were required to collect data and a further 100 days to collate the information for publication.

For the study, the Menzies–Kambalda region was subdivided into seventeen mining areas or groups of mines. The mining areas were based on distinctive geological characteristics, particularly structural style, and did not necessarily conform to the administrative mining districts and mining centres created by the Department of Minerals and Energy.

Three GSWA Records contain a summary of the geology and the main characteristics of gold mineralization in each of the seventeen mining areas, followed by systematic descriptions of each of the mines within that mining area. Report 39 draws all of this information together and relates those data to the regional tectonothermal evolution of the greenstone belt. Accompanying maps summarize much of this information. The report concludes with a genetic model involving convective circulation of a deeply sourced, synmetamorphic fluid in a large-scale hydrothermal system which is centred on late-stage granitoid plutons.

Report 39 and two accompanying plates can be purchased for \$40.00, and Records 1992/13, 1992/14, 1992/15 for \$20 each.

THE MAPPING PROCESS UNDER ONE UMBRELLA

Fiscal 1994/95 saw significant changes to the organizational structure of the Geological Survey of Western Australia.

For the first time, computer-assisted map production (CAMP) and drafting (CAD) teams are operating as an integral part of the geoscientific effort and are a part of the newly created Geoscience and Exploration Information Branch within the Survey. The inclusion of these units recognized the integrated nature of the map compilation and production processes and the potential for significant productivity gains through better co-ordinated process improvements. It also better aligns the structure of the GSWA with the structure and objectives of Departmental Programs, fulfilling Government's wishes for tighter, more accountable program management.

In the past both functions were components of a broader based operation that provided a Departmental bureau-type service. By aligning completely with the GSWA's programs and becoming more closely involved with all its planning phases, it is now possible to provide a greater and more relevant range of products in increasingly shorter time frames.

The amalgamation of both the CAMP and CAD groups within the Geological Survey of Western Australia has led to new forms of co-operation and opened doors to institutional data sharing not previously thought possible. It will lead to a closer examination of how information is collected and integrated, the streamlining and continuous improvement of the map production process from the field to the final products, and better satisfaction of industry's and other customers' needs.

'NET' VALUE

Do you need stratigraphic information? Found a reference to the XYZ Volcanics, but can't get further information or descriptions? The GSWA may be able to help. Via our Library, Roger Hocking or Alan Thorne (half of WA's representatives on the Australian Stratigraphic Names Committee) can help you find out quickly if a particular name has been used before.

The secret of the speedy search is that the Australian Stratigraphic Names database, STRATLEX, is now available for queries on the World Wide Web on the Internet, via AGSO's home page. If you don't have Web access, contact Roger, Alan, or the Library. From there the process is simplicity itself. Try it and see!

DIVISIONAL STRUCTURE

Telephone: (09) 222 3160
 Facsimile: (09) 222 3633
 E-Mail: Geological_Survey @ dme.wa.gov.au

DIRECTOR
P. Guj

Regional Geoscience Mapping Branch

ASSISTANT DIRECTOR
T. Griffin (09) 222 3172
 (42 staff)

Glengarry Basin
 NE Goldfields
 Kimberley
 Pilbara
 Lennard Shelf
 Regolith & Geochemical Mapping
 Geophysics
 Geochronology
 Petrology
 Laboratory

Mineral & Petroleum Resources & Organisational Development Branch

DEPUTY DIRECTOR
D. Blight (09) 222 3170
 (38 Staff)

Mineral Resources
 Petroleum Resources–Basin Studies
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 Executive Support
 Stores & Transport
 Information Technology
 Administration

Geoscientific & Exploration Information Branch

ASSISTANT DIRECTOR
L. Annison (09) 222 3571
 (63 staff)

Mineral Exploration Database
 (WAMEX)
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 (Camp), (Cad)
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CHIT-CHAT

Stephen Wyche, Officer-in-Charge of the *Kalgoorlie Regional Office* for the last three and a half years, returned to Perth in October. He will continue his work in the northern goldfields. The position is now held by Terry Farrell.

In the *Goldfields*, field work on the MILLROSE and WILUNA 1:100 000 sheets is near completion, and compilation has begun. Reconnaissance work for mapping of the WILUNA 1:250 000 sheet has commenced. An Edjudina–Kurnalpi ‘terrane’ map to complement the very popular Kalgoorlie ‘terrane’ map has been compiled and is now in press.

Field mapping completed in the *Kimberley* this year marks the end of field work on the King Leopold and Halls Creek Orogen project. Six second edition 1:250 000 sheets and eleven 1:100 000 sheets will result from this project and, in all, 5 GSWA geologists and 6 AGSO geologists have been involved in this *National Geoscience Mapping Accord* project. Availability of CRA’s Kununurra office and yard to GSWA geologists has been much appreciated during the course of this project — many useful geological discussions and sociable evenings were enjoyed.

Kath Grey had a ‘flying’ 2 week visit to the *Kimberley* collecting stromatolites to help correlate and date successions for the current mapping project. The trip included studying Late Proterozoic glacials around Louisa Downs, and helicopter transport allowed access to remote localities. Correlations with central and southern Australian successions, indicating a local third glacial episode, were confirmed. Results will be presented at the 13th AGC. A quick foray made to Limbunyah (NT) to collect stromatolites for comparison with those found east of Turkey Creek in the Osmond Range is part of an effort to resolve correlations between basins across northern Australia.

Fieldwork in the *Paterson Orogen* project has now been completed. The work will result in the publication of RUDALL, THROSSELL, CONNAUGHTON and POISONBUSH 1:100 000 sheets and Explanatory Notes in addition to the already published BROADHURST sheet. Work in these areas, along with new geochronological data, has led to a better understanding of the tectonic evolution of the Rudall Complex, and a reinterpretation of Yeneena Group sequences resulting in the definition of the Yeneena Supergroup.

A number of *base metal, gold, and rare-earth element* occurrences were recognized during mapping on CONNAUGHTON, adding to the prospectivity of the region already evident from *base metal and platinum-group* element occurrences noted by explorers to the east on BLANCHE.

LATEST PUBLICATIONS

RECORD 1995/4

Geochemistry of felsic igneous rocks from the southern Halls Creek Orogen

By S. Sheppard, T.J. Griffin and I.M. Tyler

\$20.00

EXPLANATORY NOTES

ESPERANCE 1:1 000 000 Geological Series

by J.S. Myers

Map and Notes \$15.00

Map only \$10.00

Geology of the MINGENEW – DONGARA 1:100 000 sheet

by A.J. Mory

\$20.00

PRELIMINARY PEN PLOTS

1:100 000 Geological Series

BRYAH DARLOT DOOLGUNNA SIR SAMUEL

DUKETON MOUNT BARTLE

Colour pen plots with topography

Paper (only) copy \$10.00

BRAESIDE ISABELLA RUDALL RIVERINA

PEARANA THROSSELL MOUNT REMARKABLE

Black and white pen plots

Paper copy \$10.00

Polyester copy \$20.00

1:250 000 Geological Series

KURNALPI ROY HILL

Paper copy \$10.00

Polyester copy \$20.00

BYRO - special release at 1:100 000 scale (all black, no topography)

BOOKABOCKA BADGERADDA CHULYAWARRA

MILLY MILLY BOOLARDY BYRO

Set of 7 sheets (six 1:50 000 map sheets and 1 reference sheet)

Paper copy \$35.00

Polyester copy \$70.00

LATEST PUBLICATIONS (cont)

REGOLITH GEOCHEMICAL DATA

PEAK HILL 1:250 000 SHEET

Geochemical mapping of the PEAK HILL 1:250 000 sheet

by A.G. Subramanya, J.A. Faulkner, A.J. Sanders, and J.R. Gozzard

\$100.00*

Price includes 5 plates and a disk containing digital sample data.

* Forty-four individual maps available at 1:250 000 scale including:

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| 1. Regolith materials map (1:250 000) | | \$20.00 |
| 2. Company surface-geochemistry projects (1:250 000) | | \$10.00 |
| 3. Sample locations (1:250 000) | | \$10.00 |
| 4. Element-distribution and other maps including
major- and trace- elements (maps 4 - 45) | each | \$10.00 |

Also available in GIS format (ARCINFO/ARCVIEW)

\$100.00

WELLS DRILLED FOR PETROLEUM EXPLORATION MAPS

Sheet 1: Western Australia 1:2 500 000

Sheet 2: Perth Basin 1:500 000

Sheet 3: Carnarvon Basin 1:500 000

Sheet 4: Canning Basin 1:500 000

Price:

Full set of 4 sheets \$30.00

Digital data \$50.00

1994-95 ANNUAL REVIEW

The purpose of the Geological Survey of Western Australia's Annual Review is to provide up-to-date information on the achievements and working progress during the past financial year. That 1994-95 was a year of substantial success for the Survey is reflected in the wide range of articles appearing in the current Annual Review.

The 1994-95 Annual Review is free of charge.

Products are available from:

Mining Information Centre

First Floor, Mineral House

100 Plain Street

EAST PERTH 6004

Telephone (09) 222 3459

Facsimile (09) 222 3444