



# The AusIMM NZ Branch Newsletter

Release 2 - 2002

Volume 27.2

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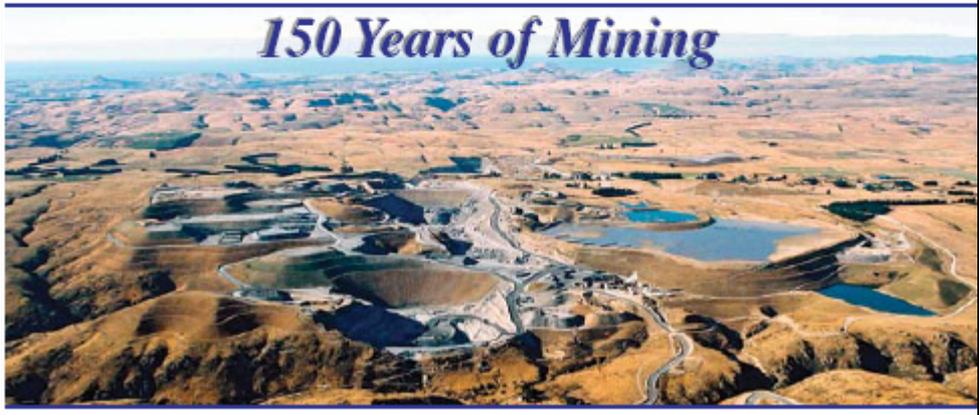
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## Contents

|                                     | <b>Page</b> |
|-------------------------------------|-------------|
| Branch Officers & Committee Members | 2           |
| Editors Note                        | 3           |
| NZ Branch Chairman's Report         | 3           |
| NZ Branch Councillor's Report       | 4           |
| Calendar of Events – 2002           | 5           |
| News of Members                     | 5           |
| AusIMM 2002 Conference              | 8           |
| Congress 2002 – Darwin: Report Back | 9           |
| Education Endowment Fund            | 11          |
| Member Promotion                    | 12          |
| Notices                             | 12          |
| Conferences, Functions & Courses    | 13          |
| Industry News                       | 15          |
| Special Features                    | 17          |

## **Branch Officers and Committee Members**

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## Editor's Note

The 2002 Conference is nearly upon us, and I would hope that members are making an effort to attend, for what looks like a widely varied and interesting line-up of speakers and topics. A summary of some of the key papers is included under the AusIMM Conference 2002 section. A full list of the current papers, to date, can be found on the AusIMM NZ Branch website.

In view of the theme of the AusIMM Conference (“150 Years of Mining”), two special features relating to the past history of the AusIMM in New Zealand are presented under the Special Features section.

Whilst on the Conference theme, for those of you who have not registered yet, there is a registration form included at the end of the newsletter. So if you haven't registered yet get that pen out and get your application in fast, otherwise there might be more overseas attendees than locals.

See you all there!

Please notify the editor, if you have not already done so, should you wish to receive your newsletter electronically by sending an email to [graeme.fulton@xtra.co.nz](mailto:graeme.fulton@xtra.co.nz)

I look forward to your articles and information.

**Next Newsletter: December - 2002**  
**Deadline for articles/letters – 1<sup>st</sup> November**

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## NZ Branch Chairman's Report

Roger Gregg



The mining industry has been wrestling with the need for a new image, a new relationship between mining and society at large, for a long time.

The impetus comes from the attitude held in many countries, New Zealand included, that mining is no longer considered socially acceptable. However mining does have a place in our economy based on the principle of sustainable development. That is development, which meets the needs of the present without compromising the ability of future generations to meet their own needs. The three key elements are the implication that the environment is limited, the concept of needs (in order for our society to exist) and the challenge of intergenerational equity.

The first and third of these elements are accepted by the mining practitioners and the industry at large. Environmental concerns are often addressed ahead of other mining considerations in mining feasibilities. Intergenerational equity is at the heart of these

environmental concerns and also features in many industry hard issues, for example issues concerning the Kyoto Protocol.

The remaining issue, the need to convince the community of society's need for a flourishing mining industry, was addressed in the last newsletter. The proposal that the AusIMM needs to be more evangelistic in taking its message to the community brought quite a few comments from branch members. Some said they are doing this, addressing local clubs and talking in schools, advocating that the branch should encourage and support these activities. Others said the NZMIA should do this. I look forward to discussing this topic further at our AGM, to be held in Auckland at the 2002 AusIMM Annual Conference.

See you there

Roger Gregg  
Branch Chairman

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### NZ Branch Councillor's Report

Vivienne Bull



I attended the Board Meeting in June in Darwin held prior to the 2002 Congress meeting and also the teleconference meeting in July. Matters covered included:

- ❑ Financial performance against budget. We are in line with budget with savings on administration and earlier payment of membership subscriptions;
- ❑ Draft Strategy for the next three years;
- ❑ The relationship with MICA and how the Institute can support

MICA;

- ❑ Membership Task Force recommendations complied by Richard Flanagan and Committee;
- ❑ Review into the Code of Ethics and Bye-Law 28, VALMIN Review, the JV Valuation Method debate and International Proceedings/Transactions;
- ❑ Inaugural 2001 AusIMM Occupational Health & Safety Award to Ernest Henry Mine;
- ❑ AusIMM to prepare submissions on incentives and impediments to Exploration in Australia, the Review of Higher Education, the Review of National Research Priorities and the Federal Government's House of Representatives Inquiry into Resource Exploration Impediments;
- ❑ Endorsed that MICA would take the lead in responding to the Professional Indemnity Insurance crisis;
- ❑ Central Services to advise all Branches of their insurance coverage and a risk assessment proforma for Branch events;
- ❑ First Draft business Plans and Budgets for 2003;
- ❑ Proposal by MICA to incorporate with a new set of rules was noted;
- ❑ Membership bucket analysis.



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More details of these and other topics discussed by the Board are on [www.ausimm.com.au](http://www.ausimm.com.au) or contact me direct on [vhbull@ihug.co.nz](mailto:vhbull@ihug.co.nz)

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### Calendar of Events - 2002

- Education Endowment Trust Fund (applications close 19 August)
  - Notice of AGM (at least 14 days prior to AGM, i.e. mid August)
    - Includes: Minutes of previous AGM
    - Chairman's annual report
    - Audited statement of accounts
    - List of nominations for NZ Branch Committee
  - Notice of motion to amend rules (at least 10 days prior to AGM, i.e. mid August)
  - AusIMM Annual Conference (1-4 Sept 2002)
  - AGM (at AusIMM Annual conference)
  - Outokumpu Travel Grant for Metallurgists (applications close 30 September)
  - Audit of Branch finances (October)
  - Audit of Education Endowment Trust Fund finances (October)
  - Atlas Copco Scholarship (applications close 31 December)
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### News of Members

#### *Obituary: Alexander Russell Mutch (1925-2000)*

Alex Mutch was a long-time member of the AusIMM and helped to organise AusIMM meetings and field trips in the southern part of the country. With a nomination from Michael Buckenham, he joined the AusIMM on 26 October 1966, at the grade of Member (this grade was later renamed Fellow and Associate became Member, so that effectively he joined as a Fellow). He applied for Concessional membership in 1996 saying "I want to hang on to my Fellowship as my membership does have some weight with the NZ Government against the Mickey Mousers in the Coromandel and Fiordland/NW Otago regions".

Alex was born in Dunedin on 12 January 1925. He attended Otago Boys' High School (1939-1942) and later the University of Otago (1943-1949), where he gained a BSc. in Geology and A.O.S.M. (Associate of the Otago School of Mines). He had an early interest in geology and mining, and one of us (W.A.W.) vividly remembers a visit with Alex to the scheelite mining area at Glenorchy in 1942, when we were both still at high school. At the time, during the height of the second world war, scheelite was being produced as quickly as possible for the war effort, and heavy bags of the concentrate were stacked on the wharf at Glenorchy for transport to Queenstown on the steamer "Earnslaw". Later, during his Geological Survey service, Alex carried out research and mapping of the Glenorchy field.

During the latter part of the war Alex served as a meteorologist with the Royal New



Zealand Air Force, developing skills that were later practised on his fellow field workers, with variable results. On joining the Geological Survey in 1949, he became part of a team based in Balclutha and led by Dr H.J. (Larry) Harrington, mapping and evaluating the Kaitangata Coalfield. Here he honed his skills as an economic geologist and built on previous practical experience as an underground worker at both Kaitangata and Ohai (Wairaki Mine) coalfields and at the Waiuta gold mine near Reefton, localities where he had done practical work as part of his mining school studies.

Following completion of the Kaitangata survey in 1950, Alex transferred to Invercargill, joining Ian McKellar and Bryce Wood on regional mapping, coal-field work, and eventually 1:250,000 mapping. In April-May 1954, he took part with George Grindley, Athol Waddick and Bryce Wood in an arduous traverse across unexplored southern Fiordland from Lake Hauroko to Dusky Sound. Despite Alex's unfailing optimism, the weather remained atrocious, except for three days, for the four-week trip. Despite the bad weather and lack of food towards the end of the trip, this survey paved the way for 1:250,000 mapping of Fiordland over the following decade.

At Invercargill, Alex mainly concentrated on mapping the Morley 1: 63,360 sheet (1966, map and 1972, NZGS Bulletin 78), a major achievement that established a 15-km thick sequence through a major Permian strato-volcano on the SW margin of the "NZ geosyncline", Permian to Triassic sedimentary facies and thickness variations being described in an important paper (Trans. Roy. Soc. N.Z. 84, 1957). His mapping and fossil collections provided the basis for later joint work with Bruce Waterhouse and led to the setting up of several Permian stratotypes that were correlated by Bruce internationally and were summarised in contributions to the "Geology of New Zealand".

During a nearly 4-month sojourn, in 1957, Alex, with Bob Hay and Bill Watters, mapped the isolated Chatham Islands and undertook a search for possible phosphate deposits (NZGS Bulletin 83, 1970). Alex's contributions (Chaps 2,5,8) covered the metamorphic basement, the Quaternary terraces, and the overall geological history. He provided a structural interpretation and description of the Chatham Schist that confirmed its long-suspected correlation with the Otago Schist. Through petrographic study of late Cretaceous to early Tertiary conglomerates on Pitt Island it was concluded that the late Paleozoic to early Mesozoic basement terranes of southern New Zealand extended across the Campbell Plateau to near the Chatham Islands, a discovery later confirmed by marine geophysical surveys. Because of the stability of the Chatham Rise, Quaternary sea levels remained undisturbed, allowing correlation with terrace levels in Northland and thence to the classic Mediterranean sequences. Despite later advances in radiometric and biostratigraphic dating, and paleomagnetic studies, his work remains seminal.

On transfer to the Dunedin office of the Survey in 1959, Alex became involved in 1:250,000 mapping in two areas. As sole author of the Oamaru sheet (23) he undertook compilation of extensive university and NZGS work on the classic North Otago late Cretaceous to Tertiary sequences, along with reconnaissance mapping of the NE margin of the Otago Schist and the flanking Torlesse Supergroup, which was subdivided into informal Permian and Triassic units based on scattered fossil localities (Mutch 1963). Concurrently, with Ian McKellar, Alex mapped the little-explored Haast Sheet (19), covering the important transection of Permian sedimentary sequences and associated volcanics and ultramafics by the Alpine fault. A major discovery was of infaulted late



Jurassic marine beds (Barrier Formation) resting unconformably on the highest Permian. This work led to the publication of the Martins Bay 1:63,360 sheet (Mutch 1965), as well as the Haast 1:250,000 sheet (Mutch & McKellar 1965).

Throughout his Geological Survey service, Alex contributed on many occasions to a wide range of topics in applied and economic geology in Otago and Southland. These included coal studies in several fields, and work on scheelite, copper ore, gold and silver, diatomite, limestone, silica sand, quartzite, and groundwater. Arising out of his field work in Westland for the Haast 1:250,000 geological map, he published "A prospector's guide to South Westland" in 1965 (DSIR Information Series 44), at a time when much of New Zealand was being investigated for possible mineral deposits and when information on the more hopeful areas for mineral resources was being eagerly sought. Alex worked on scheelite at both Glenorchy and Macraes Flat. His extensive work on the Glenorchy deposits was given in a long paper published as a Geological Survey Report (no. 40, 1969, 68 pp.).

His studies of detrital gold in Otago and Southland were published, with L.A. Baker, in "Mineral deposits of New Zealand" (AusIMM. Monograph 13, pp. 189-196, 1989). This paper summarised recent exploration and evaluation of several fields in Otago and one in Southland. Besides his earlier work on coal at Ohai and Kaitangata, Alex also worked on the eastern Southland and Green Island coalfields.

Because of his wide knowledge and experience he was DSIR representative on the Otago Catchment Board from the mid 1960's to the mid 1970's.

One of his sources of relaxation was a beach-side cottage (crib in southern parlance) at Shag Point north of Dunedin. Alex had a great interest in early steam trains and was a keen watercolour artist. One of his paintings hangs in the Institute building in Dunedin. He retired in 1986 and died in Dunedin on 26 November 2000, after a long illness.

*George Grindley, Bill Watters and Tony Christie*

### ***Obituary: James Finch 1919-2002***

Long time member of the AusIMM NZ Branch, Jim Finch, died on 9 June 2002, aged 83.

Jim attended Timaru Boys' high School between 1933 - 1936, and then the Otago School of Mines between 1937 - 1941, where he completed a BSc in 1940 and a BE Metallurgy in 1941. He commenced service in the RNZAF in December 1941 as an Airman Pilot. He made Sergeant Pilot in 1942 and was commissioned as Pilot Officer General Duties and later Flying Officer General Duties in 1943. From 1942 to 1944 he was a flying instructor at the military flying training school, until he left the service at the end of August 1944, having completed 1,400 hours of flying, and was posted to the RNZAF Reserve of Officers.

Following his World War II service, Jim worked for Sylvia Mines Consolidated (surveyor and Manager's Assistant), and Broken Hill Associated Smelters, Port Pirie.



He continued his university studies completing a PhD at the Geology School, University of Melbourne, Australia.

He was appointed Assistant Petrologist at NZ Geological Survey, Lower Hutt in June 1945, and Chemist at the Dominion Laboratory, Lower Hutt, in June 1946. Jim remained at Dominion Laboratory through the restructuring to DSIR. His research resulted in published papers on titanomagnetite ironsand, ilmenite, mica, glasses, sulphur content of minerals and coal, and the determination of various trace elements in minerals.

Jim joined the AusIMM as a Student Member on 21 May 1945 at age 26. In 1948 he was elected to grade of Member. He was granted Golden Membership (50 years) in 1995 and was still a member at the time of his death.

Jim was very keen on outdoor pursuits, including tramping, rock climbing (instructor), mountain climbing and skiing.

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### AusIMM 2002 Conference

The AusIMM 2002 conference will be held in Auckland, New Zealand on 1-4 September 2002, just prior to the Louis Vuitton and the America's Cup yacht races on Auckland Harbour. This international conference will feature a stimulating technical programme that will examine the geology, mining, metallurgical, economic, and environmental aspects of mineral deposits and mining in Australasia and the SW Pacific. Parallel sessions will examine the themes of the five Societies of the AusIMM: Geosciences, Mining, Metallurgy, Environment and General.

More than sixty technical papers will be presented by speakers from Australia, Canada, Japan, NZ, Papua New Guinea and the USA over three days. John Dow, Executive Vice President and Managing Director of Newmont Australia, will present the opening keynote address.

There will be several papers describing major mining projects in NZ, including GRD Macraes, Solid Energy and Martha Mine. John Dunlop will present a review of contract versus owner mining with numerous case studies from Australasia. A joint paper from the Institute of Geological and Nuclear Sciences with Crown Minerals describes a technique for prospectivity mapping based on GIS, which identifies key features for future exploration attention.

With New Zealand's setting on an active plate boundary, the conference will have sessions that explore relations between hydrothermal processes in subaerial setting that lead to epithermal and porphyry deposits, and processes in submarine setting that lead to volcanic-hosted massive sulfide deposits. Graham Carman will present a paper on the world-class Ladolam deposit on Lihir Island, where the mine is exploiting a low sulfidation epithermal deposit that occurs in an active geothermal system. Other epithermal deposits that will be described at the conference include Waihi in NZ, the Toyoha polymetallic vein deposit in Japan, and the 14 Moz Rosia Montana Gold deposit, Romania. The newly discovered Favona deposit in NZ, where drilling to date has identified over 400,000 oz of Au, will be the focus of several papers. Newmont



Waihi propose to construct and operate an underground gold mine at this low-sulfidation Au-Ag epithermal vein that occurs less than 1 km southeast of the world-class Waihi deposit. Stuart Simmons will discuss hydrothermal alteration and mass transfer at the Broadlands-Ohaaki geothermal system, NZ. Terry Leach will describe mixing processes that lead to epithermal gold deposition, whereas Ian Bogie will discuss how chalcedony in epithermal veins indicates decompressive boiling. David Cooke will present a paper on the alkalic Au-Cu porphyry province of NSW.

Papers on volcanic-hosted massive sulfide deposits include contributions on submarine magmatic and hydrothermal processes in volcanic arcs and back-arc basins by Richard Arculus, a description of alteration associated with volcanic-hosted massive sulfide deposits by Bruce Gemmill, and a description of the mineralogy and textures of Vienna Wood seafloor hydrothermal deposit in Manus Basin, Papua New Guinea.

Orogenic lode gold deposits will also feature prominently at the conference, with papers on the Macraes mine and Reefton projects in NZ, and the Bulyanhulu deposit in Tanzania, which has over 12 Moz of Au reserves. John Ridley will discuss the hydrothermal fluid chemistry of orogenic gold deposits and its implications for ore genetic models, and Frank Bierlein will describe the use (and misuse) of stable and radiogenic isotope systems in exploration for orogenic gold. Jeff Mauk will present information on stratigraphic controls of sediment-hosted mesothermal vein mineralisation at the Coeur d'Alene district in Idaho, the second-largest producer of silver in the world, which has intriguing parallels with orogenic lode gold deposits.

The NZ Government has now released its policies for implementing the Kyoto Protocol, which it plans to ratify later this year. Alex Sundakov of the NZ Institute of Economic Research will analyse the Government's policy and goals, Chris Baker, Greenhouse Policy coalition will examine its potential economic impact while Alison Brown, Solid Energy NZ Ltd will discuss what the protocol means for the coal industry, energy production and energy supply both internationally and in NZ.

Environmental papers will examine the community and environmental issues at the Martha mine which is encircled by the North Island town of Waihi, the closure of the nearby Golden Cross mine, and plans to rehabilitate the Macraes mine in Otago. Three papers cover recent research at Otago University into arsenic and antimony occurrence and mobilisation, and its environmental implications.

The conference will incorporate the AusIMM's Metallurgical Society Conference.

For more information, contact [conference2002@ausimm.co.nz](mailto:conference2002@ausimm.co.nz), or visit the website, [www.ausimm.co.nz](http://www.ausimm.co.nz) for developments.

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### **Congress 2002 - Darwin**

Congress 2002 was held in Darwin on the weekend of 14-16<sup>th</sup> June and included a Board meeting, the Congress, the AGM of the AusIMM and an Awards Dinner.

There were 46 representatives from Branches, Task Force groups, Societies, Directors, Central Services staff, Students and a Young Professional representative. Attending



from the New Zealand Branch were Vivienne Bull (Board Member) and Dave Stewart (Secretary NZ Branch).

The Congress was responsible for:

- (a) electing the President of the Institute in accordance with Bye-Law 38;
- (b) reviewing the progress in implementation of the Strategic Plan for the current year and making recommendations to the Board for change if requested;
- (c) reviewing and approving, with modifications if necessary, the Strategic Plan for the following year; and
- (d) identifying and discussing any existing or emerging issues of interest or concern to the members.

The theme for Congress 2002 was “the relevance of the Institute” and the Institute’s role in advocacy and representation, in addition to the above roles as outlined in the Bye-Laws.

### **Analysis and Feedback**

An analysis of thirty of the attendant’s feedback forms rated the Presentation to Congress at 3.75 on a 5 point scale and for relevance, 4.125 on the same scale. Most effective presentations were:

Three Year Strategy Update (4.2), Membership Task Force (4.2), Women In Mining (4.2), Continuing Professional Development (4.1) and Emerging Issues Task Force (4.1) and Plenary Feedback (4.0), OH & S Task Force (4.0), Professional Indemnity Insurance (4.0), Met Society (4.0), and Competency Based Chartered Professionalism (4.0).

Most relevant were judged to be 3 Year Strategy Update (4.7), Membership Task Force (4.6), Workshops (4.6) and Plenary Feedback (4.6) followed by Competency Based Chartered Professionalism and Professional Indemnity Insurance both at (4.5).

Low relevance was attributed to Environment Society (3.5), Heritage (3.6) and MICA - Mineral Industry Consultants Association (3.6).

### **Outcomes against Congress objectives**

- i. Election of President 2003 – Congress elected Ian Goddard, President 2002 unopposed as President 2003.
- ii. Rod Elvish will remain as Immediate Past President for 2003.
- iii. Nominations for three Directors to replace the three retiring Directors (Greg Chalmers, Brian White and Ian Goddard), close on 1<sup>st</sup> August 2002.
- iv. The Draft Strategic Plan presented to Congress was accepted in principle subject to the inclusion of Congress major outcomes. This will form the basis for Central Services Business Plans and Budgets for the next three years.
- v. The following Emerging Issues were raised and discussed and are marked High, Medium or Low priority based on Congress Participants Feedback.
  - Competency Based Assessment High
  - Impact of Professional Indemnity Insurance (Risk Management and Duty of Care) High



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|   |        |
|---|--------|
| · Sustainability of Human Capital and Skills                                    | High   |
| · Impact on Professionals of Globalisation and Centralisation                   | High   |
| · Alternative Dispute Resolution  | Low    |
| · Changing Employment Practices and Trends                                      | Medium |
| · Attractiveness of Industry to Students and Young Professionals                | High   |
| · Lack of Leadership in the Industry and where should this come from            | Medium |
| · Ever Increasing Calls for Self Regulation, Transparency and Ethical Behaviour | High   |

The next Congress will be held in Perth 2003.

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## Education Endowment Fund

Included below is the Trustees Report for the 2002 year.

### Trustees Report 2002

**Trustees:** John St George (Chairman), Stuart Rabone (Secretary - Treasurer), Vivienne Bull, John Hogan, Richard Barker and Roger Gregg (ex officio).

A total of nine applications for the Education Endowment Trust Scholarship were received. These were considered by the trustees and it was agreed to award three scholarships of \$2000. The scholarship recipients are:

Nathaniel Wilson, University of Otago – “A comparison of antimony and arsenic concentrations in West Coast and Otago mine sites”

Stuart Cartwright, University of Waikato – “Mapping the geology of the Southern King Basin for petroleum potential”

Craig Noble, University of Auckland – “Arsenic source and fate in selected high arsenic catchments in West Otago”

The Trustees have been actively seeking donations to maintain and increase the level of the fund to enable it to award further scholarships to students for mining/geology research. The annual conference of the AusIMM is being held in Auckland in September 2002 and the Trustees have established with the NZ Branch and AusIMM Board, that any surplus from the conference, over and above \$4,000 (NZ Branch) will go to the Education Endowment Trust. Trustees have been heavily involved in the conference organisation and have devoted a lot time and effort into the event, with special mention to Vivienne Bull as chair of the organising committee.

The Trust’s financial position as of 13<sup>th</sup> August 2002 was equity of \$37,667 which \$36,606 is held on term deposit at the bank. Revenue from donations, interest and the



conference auction totalled \$3,643. Expenditure totalled \$6,650 being \$6,000 for the scholarship awards, and \$650 audit fees for 1999 - 2001.

## Member Promotion

This section is for members who wish to promote their services and skills. It is envisaged that this will be in the form of business cards. Additionally, students may wish to place permanent or vacation employment requests. Please note this section is intended for members and not companies/organisations. Please forward your business card or advert to the editor.

**RICHARD BARKER**  
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**Independent Consulting Geologist**

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[www.matrix.co.nz](http://www.matrix.co.nz)

## Notices

The Annual General Meeting of the NZ Branch of the AusIMM will be held at the AusIMM 2002 Conference in Auckland.

Time & Date: 5.15pm, Monday 2<sup>nd</sup> September 2002

Venue: Aquamarine Room 3, Hilton Hotel, Auckland



Conferences, Functions & Courses



## AusIMM 2002 Conference '150 Years of Mining'

[www.ausimm.co.nz](http://www.ausimm.co.nz)

1-4 September 2002 Hilton Hotel, Auckland, New Zealand

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Rocklabs  
Simpson Grierson

This international conference will focus on the five main themes of the AusIMM Societies – geosciences, mining, metallurgy, environment, and general, which includes legal and economic aspects, case histories and 150 years of mining.

In addition, the conference will include field trips, short courses and a trade display. The organisers aim to make the conference affordable with registrations starting at less than \$500.

*While attending the Conference, take the opportunity to join a field trip or participate in a short course (see next page for details). Sample the unique scenery and adventure tourism that has made New Zealand one of the most desired tourist destinations in the world. View the lead up to the Louis Vuitton and the Americas Cup yacht races on Auckland Harbour.*

*The registration brochure will be sent to Branch members in May and will be available from the contacts below.*

#### Contact Details

Email: [conference2002@ausimm.co.nz](mailto:conference2002@ausimm.co.nz) Watch the website - [www.ausimm.co.nz](http://www.ausimm.co.nz) for developments.  
AusIMM 2002 Conference, PO Box 32-072, Devonport, Auckland, New Zealand. Tel +64-9-373-5917 or Fax 64-9-307-3025.



## AusIMM 2002 Conference – Field Trips & Courses

### FIELD TRIPS

***Tour A – 6 days: Taupo Volcanic Zone, North Island***

***Aug 27 – Sept 1  
Cost \$NZ1,800 per person***

This tour provides an overview of the hydrology, fluid chemistry, alteration, and mineralisation of subaerial magma-related hydrothermal systems, including the world-class Waihi low sulfidation epithermal gold deposit. We will spend 4 days in the active Taupo Volcanic Zone, visiting 8 geothermal areas, including a helicopter trip to White Island, an active offshore volcano that hosts a magmatic hydrothermal system.

***Tour B – 6 days: Orogenic lode gold deposits, South Island***

***Sept 5 – 10  
Cost \$NZ1,600 per person excluding airfares***

The post conference trip will visit sediment hosted orogenic lode gold deposits in Otago including the Macraes open pit mine (180,000oz gold/year) and the West Coast of the South Island where the Globe-Progress gold mine is being developed. It also includes spectacular scenery, a traverse of the Alpine Fault, and visits to placer gold mining operations.

***Tour C - 2 days: Waikato and Coromandel, North Island***

***Sept 5 – 6  
Cost \$NZ420 per person***

This trip visits the operating open pit gold mine at Waihi and the nearby site of the rehabilitated Golden Cross mine, followed by the Morton Estate Winery. It returns to Auckland via Solid Energy's Rotowaro coal mine, and BHP's Waikato North Head ironsand mine and the nearby Glenbrook steel mill.

### SHORT COURSES

***Short Course A: Mineral deposits in arc settings***

***Sept 5 - 6  
Cost NZ\$900 per person***

This short course by Sinclair Knight Merz Ltd examines processes that lead to formation of ore deposits, the key indicators of those processes, and how to determine where they will coincide in time and space to form an economic deposit. The focus will be on the styles of mineralisation that occur in arcs, including porphyry, epithermal, skarn, and VHMS deposits.

***Short Course B: Environmental effects of mining***

***Aug 31 – Sept 1  
Cost NZ\$500 per person***

This short course outlines the adverse effects that mining can have on the environment, and how these can be avoided or minimised. The short course will explore and assess current practices employed at active mines to prevent environmental damage, as well as remediation options for active and abandoned mine sites.

## Industry News

This section is for NZ mining industry or company news submitted by local branch members. The purpose is to spread news and information about the local mining industry that may be of interest to the membership. Should you have any news you would like to share, please forward to the editor.

### **INDUSTRY TRAINING-WORKING FOR THE WORKERS**

**D Stewart, FellowAusIMM.**

Front line workers are winning long overdue recognition in extractive industries.

Development of industry training organisations (ITO's) has created an environment in the quarrying, mining and mineral processing industry where the people "at the face" are receiving structured training programmes to enhance and develop the wealth of skills and knowledge gained over their years in industry.

The New Zealand Qualifications Authority (NZQA) structure has experienced some teething problems but the framework extends well beyond industry training. Some of the broader NZQA policies have received criticism and outright condemnation but in the extractive industries, the response has been positive with significant gains.

Several avenues exist for trainees to register with the Extractive Industries Training Organisation (EXITO) and enrol on training programmes. The two main objectives for most of the registered trainees are the National Certificate range and the statutory Certificates of Competency. All training and qualifications gained are achieved by obtaining unit standards that cover most plant, equipment and operations in the industry. New unit standards are developed as needs are identified. These unit standards are set at specific "levels" that determine the complexity of the subject and each has "credits" that reflect the expected time it takes for a person to achieve the required skills and practical experience.

#### **National Certificates:**

The standard qualifications for industry training are designed to develop generic mining skills and knowledge, as well as specialist mineral industry fields. The unit standards that make up the various certificates are:

- Core subjects; including induction units, communication skills, first aid training, fire fighting, health and safety and other basic general skills.
- Elective subjects; including surface and underground mining subjects, civil plant operation and management domain units.

Units can be cross-referenced among various ITO domains as long as they are perceived to be relevant to the respective industry. The primary objectives and advantages of the National Certificate programmes are:

- Unit standard training and assessing is based on common training material developed and printed by EXITO. It includes information manuals and examples of the type of questions and answers that are expected for each level. No matter where the training is carried out and irrespective of who is delivering the material, there is consistency with training and assessing the candidates across the country.



- Each programme has development stages ranging from Introductory Certificates through to National Certificates in Supervision.
- Recognition of Prior Learning (RPL) is possible within the framework. This avoids having to revisit fundamentals or require employees attend training for a skill they have been carrying out for many years.

From the “working face” perspective, these skills are verified by attestation signed off by the employee’s immediate supervisor and one of the managers.

This type of attestation is more meaningful and accurate compared with an assessor who watches the candidate perform a task once. With attestation, the person(s) verifying the skill level is the same person(s) that the employee must perform with during normal working days which means a particular skill is observed in many different situations and conditions. This is extremely important in mining because operating situations can change rapidly, frequently and widely.

- RPL also allows an assessor to verify qualifications and achievement from other training courses and experiences that are equivalent to the unit standard being assessed. The process of assessment for RPL cases is rigorous and carefully documented and as long as consistency prevails, will ensure fair competency recognition is maintained.

### **Certificates of Competency:**

- These certificates are defined in the Health & Safety in Employment (Administration) Regulations 1996 and they are currently issued through the Department of Labour - Occupational Safety & Health (OSH). The certificates are equivalent to what previous legislation specified and include; underground deputies, underviewers and mine manager; metalliferous underground equivalent positions, surface A and B grade opencast and quarry manager, A and B grade tunnel manager, shot-firer, gas testing, surveying and winding engine drivers.
- These certificates of competency probably generate the greatest interest within the industry as they are well established qualifications and have proven to be robust and relevant since the early days of mining in this country. They have retained the most desired qualification status because they are easily recognised and remain the qualification that has stood the full test of time. There is very strong interest among extractive industry employees for keeping these qualifications with the structure, strength and relevance they have always held.
- The Certificate of Competency requirements are now based on the NZQA unit standard framework but are only issued when the candidate has achieved prescribed working experience. This experience can be extensive and involve a range of practical work activities. OSH will only issue a certificate when the candidate has proven his/her experience as well as satisfying the theoretical aspects of the unit standard subjects where competency is determined through the unit standard assessment process.

### **Conclusion:**

Industry training within the extractive industry works well for the workers. There is widespread interest from individuals and companies to develop training and enhance qualifications and skill/knowledge levels. Subsidised training (via NZQA) is an excellent incentive but employees also recognise that they can become skilled and experienced contributors to the success of the industry, firstly winning formal national then international recognition for this knowledge.



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All workers want their contribution to be recognised and valued. Earning credits and unit standards on their way to sound qualifications are one sure-fire way to do it.

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### Special Features

#### **HISTORY OF THE AusIMM IN NEW ZEALAND**

The following information on the history of the AusIMM in New Zealand has been assembled for the AusIMM New Zealand branch web site. The main sources of information were a paper by Lloyd Jones for the 1993 AusIMM Branch Conference and some notes from Mick Buckenham. Please let Tony Christie know of any additional information that could be included. Email Tony at [t.christie@gns.cri.nz](mailto:t.christie@gns.cri.nz).

#### **New Zealand and The Institute**

In July 1897, with H A Gordon as president, an inaugural meeting was held to form the New Zealand Institute of Mining Engineers with an initial membership of some 80 mining personnel. Gordon, a mining engineer from Scotland originally, had come to New Zealand in the early 1860s and subsequently had become the Inspecting Engineer of Metalliferous Mines (cf Chief Inspector of Mines) 1882-1896. On retirement from Mines Department he continued his interest in the Mining industry. The New Zealand Institute was disbanded in 1900 after only four years and 28 of its members joined the Australasian Institute where Henry Gordon was elected President for the year 1903.

As a consequence of Gordon's Presidency, the Annual General Meeting of the Institute was held for the first time in New Zealand in 1903, with Gordon presenting a Presidential Address and with an attendance of some 20 delegates representing 8 percent of the Institute's membership.

The second Annual General Meeting to be held in New Zealand was in 1911, when J Mackintosh Bell was the President of the Institute. Bell, a Canadian, was Director of the New Zealand Geological Survey and gave his Presidential Address on "The Hauraki Goldfields, New Zealand". 140 members or 28 percent of the then membership of 500 attended this meeting.

Resulting from this meeting, an Auckland Branch of the Institute was formed with C P Sims of Waihi Gold Mining Coy Ltd as the Secretary. This Branch was, however, disbanded in 1914.

It would not be until 1971 that New Zealand was again host of an Annual Conference of the Institute. However, over the years various New Zealand Members have served as Local Correspondent and/or Councillor for New Zealand. These included Prof. D B Waters of Dunedin, (professor of Metallurgy at Otago School of Mines 1906-1926, apart from war service 1914-17), P G Morgan, Director of the New Zealand Geological Survey, Hugh Crawford, Director of the Thames School of Mines, and Gordon J Williams, Dean of The Otago School of Mines 1944-65. It was on the departure of Gordon Williams in 1965 to establish a Department of Mineral Resources in Teheran



that Tasman Joseph (Tas) McKee, managing director of a family Company, Lime & Marble Ltd, was elected Councillor representing New Zealand.

The year 1965 was also a milestone in the history of the Institute, particularly for New Zealand as the Eight Commonwealth Mining and Metallurgical Congress was held in Australia and in New Zealand. As Monograph #4 of the publications of the Congress, a most important work edited and largely compiled by Gordon Williams, "Economic Geology of New Zealand" was produced and became "the Bible" for those engaged subsequently in mineral exploration in New Zealand. On his return from Iran and in retirement Gordon Williams was to produce a second edition updated to 1974 of this publication, which was, dedicated the "T J McKee Memorial Volume".

### **Formation of The New Zealand Branch**

T J (Tas) McKee, for many years prior to his becoming the Councillor representing New Zealand in 1965 had been very active in mineral exploration in New Zealand, particularly after the discovery of uranium mineralisation in the Buller Gorge, Westland, in 1955. Shortly after becoming Councillor he called into the Wellington Mines Department Office of L S Jones (The Inspecting Engineer of Metalliferous Mines, later the Chief Inspector of Mines under the 1971 Mining Act) to discuss the possible formation of a New Zealand Branch of the Institute. Dr. R W Willett, the then Director of the New Zealand Geological Survey, was brought into the picture and an approach then made to G B O'Malley, the Hon. Chief Executive Officer of the Institute in Melbourne as to how best to go about the formation of a Branch.

Tas McKee, as Convenor, called for a meeting in Wellington for 16 February 1966 in order to prepare a formal request to Council. Those who attended this meeting were -T J McKee, Councillor, J B O'Malley, Hon. CEO Melbourne, R W Willett, Director NZGS Lower Hutt, M H Buckenham, Member OSM Dunedin, D S Nicholson, Member DSIR Gracefield, W R Sparrow, Member Dunedin, J C Braithwaite, Assoc. Member Lime & Marble Nelson, and L S Jones, Mines Department Wellington, who acted as interim Secretary. At this meeting it was agreed that a Branch should be formed initially centred on Wellington. The Branch to be known as The New Zealand Branch.

At that time there was a total membership of the Institute in New Zealand of 57, composed of 17 Members, 9 Associate Members, 1 Affiliate, 5 Junior Members and 24 Student Members.

Council approved the formation of the Branch and this approval was published in the April/May Bulletin 1966 of the Institute.

Draft Rules were drawn up and approved by Council. These provided inter alia for a Branch Committee comprising four members elected to represent Corporate Members and four members elected to represent Non-Corporate Members with the Councillor representing New Zealand and the immediate past Chairperson as ex officio members. The first Branch Committee was elected in April 1966 as follows:

For Corporate Members:

M J Buckenham, Member, Dunedin.

L S Jones, Member, Wellington, Hon. Sec/Treas.



John Rogers, Member, Auckland, Vice Chair .  
R W Willett, Member, Wellington, Vice Chair.

For Non-Corporate Members:

R C Bradshaw, Affiliate, Wellington.  
R B James, Student, Dunedin.  
R A McDowell, Student, Dunedin.  
DNB Skinner, Student, Auckland.

The committee was empowered to elect other members to the Committee to be local organisers and such have been appointed in Auckland, Waikato, Waihi, Wellington, Christchurch, West Coast and Dunedin.

The Inaugural Meeting of the Branch was held in the Civil Service Cub, Wellington, on Monday, 18 April 1966 and was attended by some 60 members and guests and chaired by the then President Mr Henry (later Sir Henry) Somerset CBE. The guests included the Rt. Hon. Tom Shand, Minister of Mines, P M Outhwaite, Under-Secretary for Mines, Mr G B O'Malley, Hon. CEO The AusIMM, Melbourne, Miss Beryl Jacka, Secretary The AusIMM, Melbourne, and many other persons of note. The President at the buffet dinner following the meeting presented an address outlining the history of the Institute and something of the current mineral scene in Australia under the title "Some aspects of the Mineral Industry in Australia".

At the time the Branch was inaugurated a total of 65 members was recorded, comprising 23 Members, 12 Associate Members, 6 Junior Members and 24 Students very shortly to be joined by the first Company Member, Iime & Marble Ltd, and the first Affiliate R C (Bob) Bradshaw.

### **Financing the Branch**

Apart from small grants from Melbourne the early financing of the Branch depended on some donations from the minerals industry and grants from the residual funds held on behalf of the New Zealand Committee for the Eight Commonwealth Mining and Metallurgical Congress 1965. Mr P M Outhwaite, Under-Secretary for Mines, took over the chairmanship of that committee in 1966 from Prof. Gordon Williams on his departure for Teheran. The committee at its last meeting passed a motion that the residual funds be used to set up a New Zealand Branch of the Institute. The funds were held by Mines Department until 1975 when the final balance of \$3,031.81 was paid into the banking account of the Branch.

After his return from Teheran in 1973 Gordon Williams set to produce a second edition of "Economic Geology of New Zealand" and this was at first financed in 1974 by a very generous loan by way of bridging finance by The McKee Trust and from accumulated funds of the Branch. Following publication, the sale of 200 copies to the Institute in Melbourne and the balance of Some 200 copies to the New Zealand Government Printer enabled the Branch to reimburse The McKee Trust and, as at 30 April 1976, establish Branch funds on term deposit amounting to \$5,800.



## Education Funds

A fund was originally established in 1977 to provide annual grants for tertiary Student papers as Student Bursaries. The original grants made in 1977 were five in number each for \$250. This scheme has evolved into prizes for the best student papers presented at the Annual Conference of the Branch, and prizes for secondary school students participating in the annual regional Science Fairs, with projects relating to the minerals industry.

New Zealand residents are unable to participate in the AusIMM's Education Endowment Fund bursary programme because of Australian tax considerations. Therefore the substantial profit from the PACRIM 95 conference was used to set up a New Zealand Branch Education Endowment Trust Fund. This has awarded bursaries of \$2000 for tertiary research.

## New Zealand Branch Newsletter

The Branch instituted a Newsletter for circulation to Branch members in 1976 under the Chairmanship of Mr J C (Jock) Braithwaite and the Editorship of Mr Denis Kelly. The first edition, Volume 1/1, was issued March 1976. Since then, the Newsletter has had irregular production, usually with two to four issues annually, each containing between 7 and 32 pages. Vol 1 No 1 introduced the long running 'Heard at the Cinnabar' column written by Bruce Utting, which continued until December 1989. Cartoons were included together with Annual Accounts, news of meetings, events and members, industry news, Conference and regional reports and political and local commentary/submissions. Among other items published it is the vehicle used to distribute the Minutes of the Branch AGM including the Hon. Treasurer's audited Annual Statement of Accounts.

## New Zealand Branch Chairpersons

|                 |           |
|-----------------|-----------|
| T J McKee       | 1966-1967 |
| R W Willett     | 1967-1969 |
| John Rogers     | 1969-1971 |
| M H Buckenham   | 1971-1973 |
| Tom Marshall    | 1973-1975 |
| J C Braithwaite | 1975-1977 |
| L S Jones       | 1977-1979 |
| M H Buckenham   | 1979-1981 |
| D R Buist       | 1981-1983 |
| B S Utting      | 1983-1985 |
| V H Bull        | 1985-1987 |
| N A MacArthur   | 1987-1989 |
| M A Ward        | 1989-1991 |
| R L Braithwaite | 1991-1993 |
| John Hogan      | 1993-1995 |
| Colin Douch     | 1995-1997 |
| Vivienne Bull   | 1997-1999 |
| Tony Christie   | 1999-2001 |
| Roger Gregg     | 2001-2003 |



## Councillors Representing New Zealand

Since the Branch was formed in 1966:

|                 |           |
|-----------------|-----------|
| T J McKee       | 1965-1973 |
| John Rogers     | 1973-1977 |
| C H Benney      | 1978-1981 |
| J C Braithwaite | 1982-1987 |
| L S Jones       | 1988      |
| M Baker         | 1989-1991 |
| M H Buckenham   | 1992-1998 |
| John Hogan      | 1998      |
| Vivienne Bull   | 1998-2000 |

## AusIMM Board Members resident in New Zealand

|               |           |
|---------------|-----------|
| Vivienne Bull | 2000-2003 |
|---------------|-----------|

## AusIMM Presidents resident in New Zealand

|                   |      |
|-------------------|------|
| Henry Gordon      | 1903 |
| J Mackintosh Bell | 1911 |
| Michael Buckenham | 1997 |

## NZ Branch Newsletter Editors

|   |              |
|---|--------------|
| Dennis Kelly  | 1976-1981    |
| Nick MacArthur (with assistance from John Hogan and David Buist)                      | 1981-1988    |
| Michael Buckenham and Bill Vance  | 1988-1991    |
| Mike Baker  | 1992-1999    |
| Geoff Price   | 1999-2001    |
| Graham Fulton (with assistance from Vivienne Bull, Richard Barker and Murray Stevens) | 2001-present |

## New Zealand Branch Members -Awards

|   |                                  |      |
|---|----------------------------------|------|
| <b>Honorary Fellow</b>                            | Cecil Henry (Matt) Benney (Dec.) | 1966 |
|   | Robert Colville Bradshaw         | 1976 |
|   | Lloyd Samuel Jones               | 1987 |
|   | Michael Buckenham                | 1993 |
| <b>President's Award</b>                          | Gordon John Williams (Dec.)      | 1975 |
| <b>Branch Service Award</b>                       | Lloyd Samuel Jones               | 1996 |
| <b>Beryl Jacka Award</b>                          | Lloyd Samuel Jones               | 2000 |
| <b>Mineral Industry Operating Technique Award</b> | Ian Devereau                     | 1996 |
| <b>Student Essay Prize</b>                        | 1934 W A Pullar                  |      |



1955 D H Harraway  
1956 W J Hogg  
1957 J K Hill  
1958 L A Donald, I F Jackson  
1959 K Thavapragasm  
1960 A J Rabbidge  
1961 R J King  
1964 PNT Unwin, C E James  
1965 J H Coggan (Corbould Prize), R B James  
1966 D Gain  
1967 P Wai (Corbould Prize)  
1969 P A Tilyard  
1975 M McCracken  
1980 S L Jasper  
Award discontinued 1987

**Atlas Copco Bursary**      1979 M M Fischer

### **NZ Education Endowment Trust bursaries**

1998-1999    Amanda Black (University of Otago)  
                 Stephen Krippner (University of Waikato)  
                 Ian MacIntosh (University of Auckland)  
                 Josie Robertson (University of Auckland)  
                 David Tillick (University of Auckland)

1999-2000    Craig Anderson (University of Otago)  
                 Reece Harrison (University of Waikato)

2000-2001    Jennie Dingley (University of Auckland)  
                 Alexandra Johansen (University of Waikato)  
                 Erin Hollinger (University of Auckland)  
                 Wendy Hampton (University of Auckland)  
                 Andrea Strand (University of Auckland)  
                 Greg Carter (University of Auckland)

### **Venue -AGM/Annual Conferences of Branch**

1966    Inaugural Meeting April Wellington - Minutes only.  
1967    AGM September Dunedin - Minutes only.  
1968    AGM July Auckland - Minutes only.  
1969    AGM July Wellington - Minutes only.  
1970    July Wellington - Minutes only.  
1971    Annual Meeting of Institute - Proceedings.  
         AGM Auckland August - Minutes only.  
1972    AGM Dunedin August - Minutes only.  
1973    AGM Auckland - Minutes only.  
1974    AGM & Special Meeting August - Minutes only.  
1975    AGM Dunedin August - Minutes only.



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- 1976 AGM & Conference August - Proceedings.
  - 1977 AGM & Conference August/Sept - Proceedings.
  - 1978 AGM & Conference Whangarei - Papers.
  - 1979 AGM & Conference Greymouth - Papers.
  - 1980 Annual Meeting of Institute Queenstown - Proceedings.  
AGM Wellington -Small Mines Symposium.
  - 1981 AGM & Conference Thames - Proceedings.
  - 1982 AGM & Conference Wellington - Proceedings.
  - 1983 AGM & Conference Invercargill- Proceedings.
  - 1984 AGM & Conference Auckland - Proceedings.
  - 1985 AGM & Conference Christchurch - Proceedings.
  - 1986 AGM & Conference Rotorua - Proceedings.
  - 1986 AGM & Conference Nelson - Proceedings.
  - 1988 AGM & Conference Wellington - Proceedings.
  - 1989 AGM & Conference Greymouth - Proceedings.
  - 1990 Annual General Meeting of Institute Rotorua - Proceedings.  
AGM Auckland - Minutes.
  - 1991 AGM & Conference Waihi -Proceedings.
  - 1992 AGM & Conference Dunedin -Proceedings.
  - 1993 AGM & Conference Wellington - Proceedings
  - 1994 AGM & Conference Wairakei - Proceedings
  - 1995 Auckland (in conjunction with PACRIM 95) - Proceedings
  - 1996 AGM & Conference Greymouth - Proceedings
  - 1997 Conference Auckland (with the NZ Minerals & Mining Conf) - Proceedings  
AGM Auckland - Minutes
  - 1998 AGM & Conference Christchurch - Proceedings
  - 1999 AGM & Conference Waitangi - Proceedings
  - 2000 Conference Wellington (with the NZ Minerals & Mining Conf) - Proceedings  
AGM Auckland - Minutes
  - 2001 AGM & Conference Dunedin - Proceedings
  - 2002 AGM & Conference (AusIMM Annual Conference) Auckland - Proceedings

Main information source:

Jones, L.S. 1993: The AusIMM in New Zealand. Proceedings of the 27th Annual Conference 1993, NZ Branch of the AusIMM, pp 419-423.

Plus additional material from Michael Buckenham and Tony Christie



### *MCKEE MEMORIAL ADDRESS*

The following information has been assembled on Tas McKee and the Tas McKee Memorial Address for the AusIMM New Zealand branch web site. Please let Tony Christie know of any additional information, particularly for the list of past McKee Memorial Address's, which is incomplete. Email Tony at t.christie@gns.cri.nz.

### **Tas McKee**

The Tasman Joseph McKee Memorial Address was initiated by the New Zealand Branch of the AusIMM in 1973 to commemorate the life and work of Tas McKee (1911-1973). The address is presented at the Annual Conference of the New Zealand Branch, usually by the President of the AusIMM.

Tas McKee was perhaps the most important and influential person in the New Zealand minerals industry during the 20<sup>th</sup> Century and was also a committed member of the AusIMM. He was elected as a Member on 4 July 1960 and was Councillor for New Zealand from 1965 until his death in 1973. Tas was the driving force behind the establishment of the New Zealand Branch of the AusIMM in 1966 and was the first Chairman of the Branch from 1966 to 1967.

Tas was educated at Tasman and Mapua schools, Wellington's St Patrick's College, Motueka District High School, Nelson College and Victoria University College, completing a BSc in chemistry and geology in 1931. He worked part time for the Shell Company of New Zealand.

In 1932, with his father Arthur and brother Guy, Tas established Fruitgrowers Chemical Company at Port Mapua, producing colloidal sulphur fungicide and other agricultural chemicals. In 1938, the three McKees established Lime and Marble Limited to mine the marble deposits on Takaka Hill and produce high-grade lime for the Auckland glass works and burnt lime for local industry. This led to the production of industrial fillers for many New Zealand paint, rubber, plastic, glass and chemical manufacturing companies. Tas expanded the company's interests into the exploration and, in some cases production, of a number of other non-metallic minerals including diatomite, talc-magnesite, dolomite, serpentine, barite and fluorite. The discovery of uranium in the Buller Gorge, Westland, in 1955, sparked his interest in metallic minerals, which eventually involved the company in exploration for uranium, gold, silver, copper, lead, zinc, molybdenum and other metallic minerals during the 1960s, boosted by a joint venture with Asarco from 1967. The company also diversified into Oil exploration with the formation of L&M Oil (NZ) Ltd (54% owned by Lime and Marble) in 1969. Although unsuccessful in the offshore Nelson - Taranaki area, this company discovered gas and condensate at Urenui, Taranaki in a joint venture with Aquitaine Petroleum and Shell BP and Todd. A promising nearby structure was named in McKee's honour following his death. Casing was purchased for a well to be drilled on the structure, but the licences were passed to the newly formed Petrocorp before the well could be drilled. Commercial quantities of oil were discovered in the McKee structure in 1980. In 1966, Tas was awarded an OBE for his pioneering work in mineral exploration and development. His work was also acknowledged by Gordon William's dedication of the



second edition of the book “Economic Geology of New Zealand” as the “T J McKee Memorial Volume”.

Tas was supportive of education and established a Travel Award to assist university lecturers to visit Australian mining centres, and a scholarship at the Otago School of Mines to help students go overseas in the vacations for practical work. The McKee Post Graduate Scholarship was also established to fund tertiary-level research.

Tas enjoyed a number of interests outside of work including tramping, skiing, mountaineering; rock collecting, watercolour landscape painting, photography and cinematography. He married Freda Redding in 1940 and together they raised three daughters and three sons. Freda died in 1969 and Tas married Margaret Luoni in 1973, less than one month before he died.

Main source: Dictionary of New Zealand biography volume 5, 1941-1960.

### **McKee Memorial Address List**

1973: C.H. Benny, I.S.O. in Auckland

1975: Sir Frank F. Espie in Dunedin

1979: W M Lonie (President, 1979) “The mining industry in national development” delivered at Dunedin, May 3, 1979. (1979 conference in Greymouth?)

1981: John P. Morgan (President 1981) “Forecasting for Mining and the Environment”, delivered at Thames, 19 August 1981.

1983: Sir James Foots (President 1983) “Trends in the non-ferrous metals”, delivered in Invercargill.

1985: David Tennent (President 1985), Christchurch

1987: D.O. Zimmerman (President 1987) “Multiple land use” delivered in Nelson, 3 September 1987.

1992: Sir Bruce Watson (President 1992) “Opportunities for mining industry professionals in a changing world” delivered in Dunedin 19 August 1992.

1994: Dr John Hamdorf (President 1994) delivered in Wairakei, 17 August 1994.

1996: Jock Braithwaite “Forty years of West Coast mining” delivered in Greymouth on 21 August 1996.

2001: Rod Elvish (President 2001) “Professionalism, the AusIMM and the community” delivered in Dunedin, 29 August 2001.

## AusIMM 2002 REGISTRATION FORM

**Please complete and return to:**

**AusIMM** Conference - Centre for Continuing Education  
 The University of Auckland  
 Private Bag 92019, Auckland, New Zealand  
**Fax:** 64-9-373 7419

For more information contact: [conference2002@ausimm.co.nz](mailto:conference2002@ausimm.co.nz)

**1 – 4 September 2002 - Hilton Hotel, Auckland, New Zealand**

**Name** (Prof/Dr/Mr/Mrs/Miss/Ms) .....

**Preferred Name** (for name tag) .....

**Accompanying Person:** Yes  No  **Name** (for name tag) .....

**Position** ..... **Organisation** .....

**Address** .....

**State** .....

**Postal Code** ..... **Country** ..... **Telephone No** .....

**Email** ..... **Facsimile No.** .....

**Speaker:** Yes  No  **AusIMM Member:** Yes  No

**REGISTRATION - FULL AND STUDENT**

*(includes morning and afternoon tea/coffee, lunches, welcoming reception and closing function, proceedings volume and CD Rom of proceedings)*

|                              | Payment received<br>by 15 July | After<br>15 July |          |
|------------------------------|--------------------------------|------------------|----------|
| AusIMM Member and/or Speaker | \$350                          | \$400            | \$ ..... |
| Non-Member                   | \$450                          | \$500            | \$ ..... |
| Student                      | \$ 75                          | \$ 75            | \$ ..... |

**REGISTRATION - SINGLE DAY**

*(includes morning and afternoon tea/coffee, lunch, proceedings volume and CD Rom)*

|   |       |       |          |
|---|-------|-------|----------|
| Single Day rate   | \$200 | \$250 | \$ ..... |
| <i>Attending:</i> Monday... <input type="radio"/> Tuesday ... <input type="radio"/> Wednesday ... <input type="radio"/> |       |       |          |

**Conference Dinner (optional extra for all categories of registrants)**

Tuesday 3 September - 7:30 pm @ \$95/person      Number attending ..... \$ .....

**Welcoming Reception (complete only for guests and/or single day registrants)**

Sunday 1 September - 6:30 pm @ \$40/person      Number attending ..... \$ .....

**All costs in New Zealand Dollars, inclusive of GST** **Sub Total (A)** \$ .....

**SHORT COURSES**

|   |                          |                        |          |
|---|--------------------------|------------------------|----------|
| <b>Short Course A:</b> Environmental effects of mining<br>Aug 31 – Sept 1 | <b>Cost \$500/person</b> | Number attending ..... | \$ ..... |
| <b>Short Course B:</b> Mineral deposits in arc settings<br>Sept 5 – 6     | <b>Cost \$900/person</b> | Number attending ..... | \$ ..... |

**PRE & POST CONFERENCE FIELD TRIPS**

|  |  |                        |          |
|--|--|------------------------|----------|
| <b>Tour A – 6 days:</b> Epithermal gold deposits<br>North Island<br>Aug 27 – Sept 1<br><b>Cost \$1,800/person</b>                  |  | Number attending ..... | \$ ..... |
| <b>Tour B – 6 days:</b> Orogenic lode deposits<br>South Island<br>Sept 5 – 10<br><b>Cost \$1,600 /person</b><br>excluding airfares |  | Number attending ..... | \$ ..... |
| <b>Tour C - 2 days:</b> Waikato and Coromandel<br>North Island<br>Sept 5 – 6<br><b>Cost \$420/person</b>                           |  | Number attending ..... | \$ ..... |

**Sub Total (B)** \$ .....

**All costs in New Zealand Dollars, inclusive of GST** **TOTAL (A+B)** \$ .....

**PAYMENT**

**Tax Invoice: GST No: 10-010-381**

**Cheques should be made payable to the University of Auckland or debit:**

Visa ..  Mastercard ..  Card No: 
 

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Please print name of cardholder .....

Expiry Date..... Signature .....