THE AUSTRALASIAN REGION – THE PAST

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1. INTRODUCTION

The Australasian region of the International Society for Soil Mechanics and Geotechnical Engineering (ISSMGE) and its predecessor, the International Society for Soil Mechanics and Foundation Engineering (ISSMFE) has been active since the 1950's. Given its relatively sparse population, this region has made some notable contributions to both research and practice in soil mechanics and geotechnical engineering. This brief paper attempts to identify some of the persons who pioneered the subject in Australasia and some of the outcomes that have led to the development of two of the most energetic national societies within ISSMGE, the Australian Geomechanics Society and the New Zealand Geotechnical Society.

Some brief statistics on the Australasian Societies will be presented first, and then the origins of the two Societies will be traced, together with their office-holders. Some brief comments on earlier influential personalities will be made, and then a summary will be presented of past conferences and Society awards that have been developed to recognise the achievements of the members of the Societies.

2. SOME STATISTICS

Figure 1 shows the number of members in the Australian and New Zealand Societies since the 1960's. Of particular note is the steep rise in membership since the late 1990's.

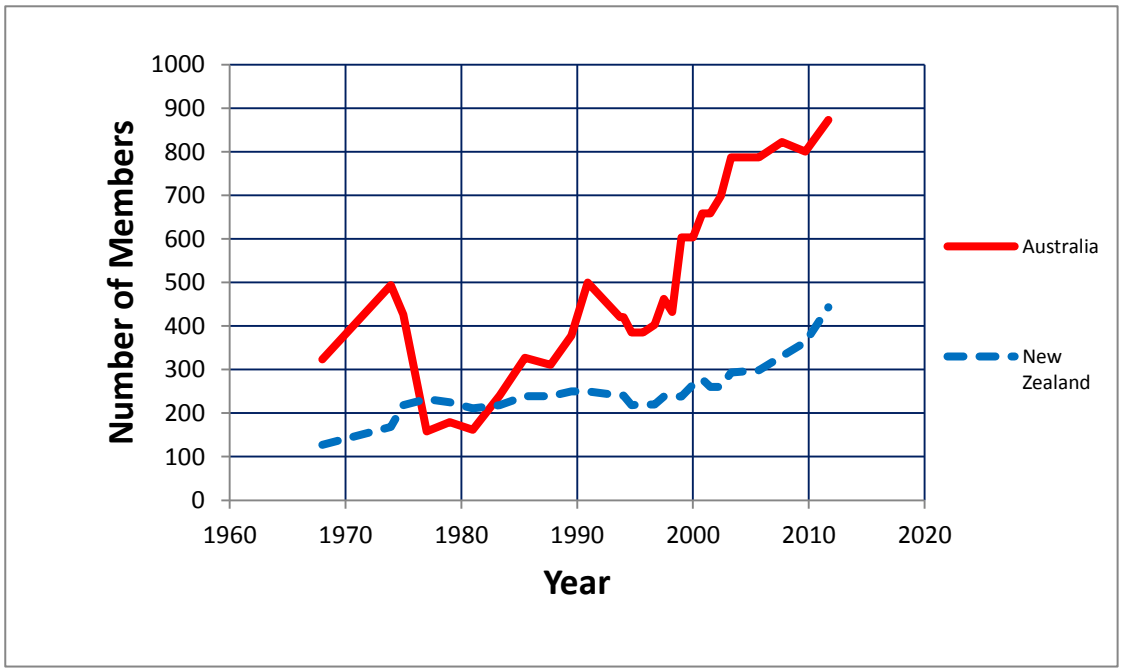

Figure 1 Australasian membership of the Society

Figure 2 shows the Australasian membership of ISSMGE and its predecessor, ISSMFE, as a percentage of the total membership. This has been as low as 2.7% in the early 1980's, and as high as 7% in the early 1970's. The current membership is again in the vicinity of the historic high value.

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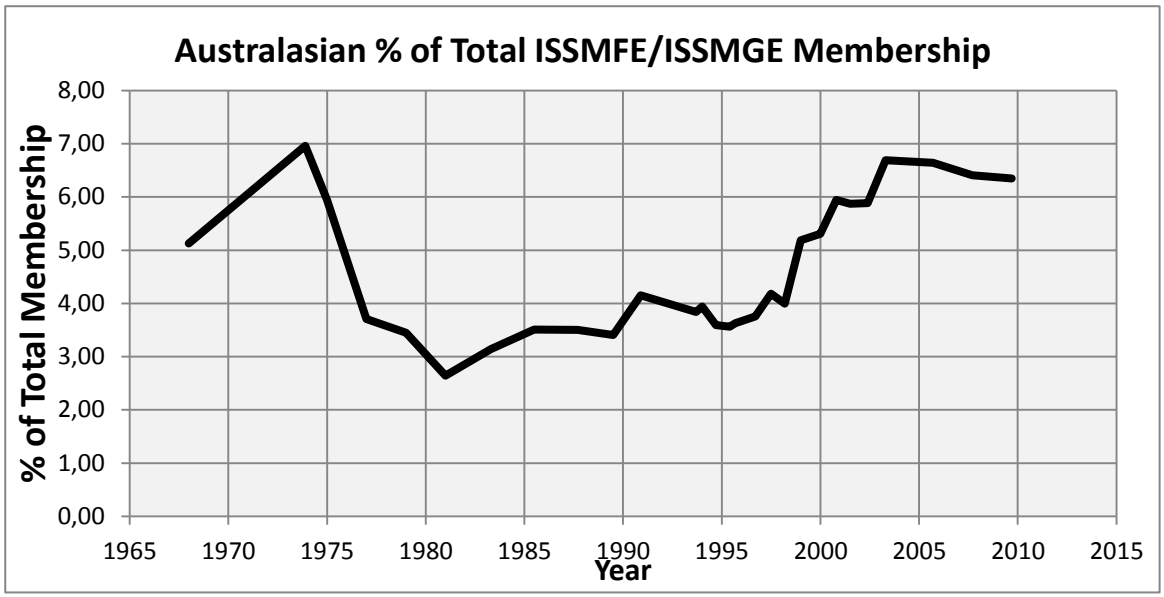

Figure 2 Australasian membership of ISSMFE/ISSMGE as a percentage of the total

3. ORIGINS OF THE AUSTRALIAN SOCIETY

The Australian Society started via local groups of interested people in soil mechanics. The first National Committee on Soil Mechanics and Foundation engineering appears to have been formed in 1947, and in the second International Conference held in Rotterdam the following year, six Australians presented a total of nine papers.

In the early 1950's, systematic teaching of soil mechanics as a university subject commenced, in 1950 at the University of Melbourne under D.H. Trollope, and in 1952 at the University of Sydney under E.H. Davis. Both Trollope and Davis had migrated from the United Kingdom to Australia to take up academic positions (Brown, 1991). Under their guidance, local groups began to hold technical meetings in Sydney and Melbourne, and the protégés of Trollope and Davis began to participate in these meetings. Examples of the talks given by the leaders and their protégés are:

- "Settlement analysis under three-dimensional Conditions", given in Sydney by H.G. Poulos, 24th July, 1963 (see Figure 3);
- "Non-linear theory of consolidation", given by E.H. Davis on 29th July 1963;
- "Foundation design with particular reference to the Melbourne area", given in Melbourne by I.K. Lee in 1968;
- "Soil shrinking and swelling characteristics", given by I.B. Donald in Melbourne in 1968.

The latter two papers were part of a Specialty Seminar on Foundation Design, organised in Melbourne in 1968, a precursor to specialty seminars which are now commonly organized in various cities within Australia.

The Australian Geomechanics Society (AGS) was officially formed in 1970 and served as the National Society not only of ISSMFE, but also as the National Society for its sister Societies, ISRM and IAEG. This integrated approach was quite unusual in those days, and remains so even today. The AGS was sponsored jointly by the Institution of Engineers Australia and the Australasian Institute of Mining and Metallurgy. Table 1 lists the Chairmen of the AGS since its inception in 1970.

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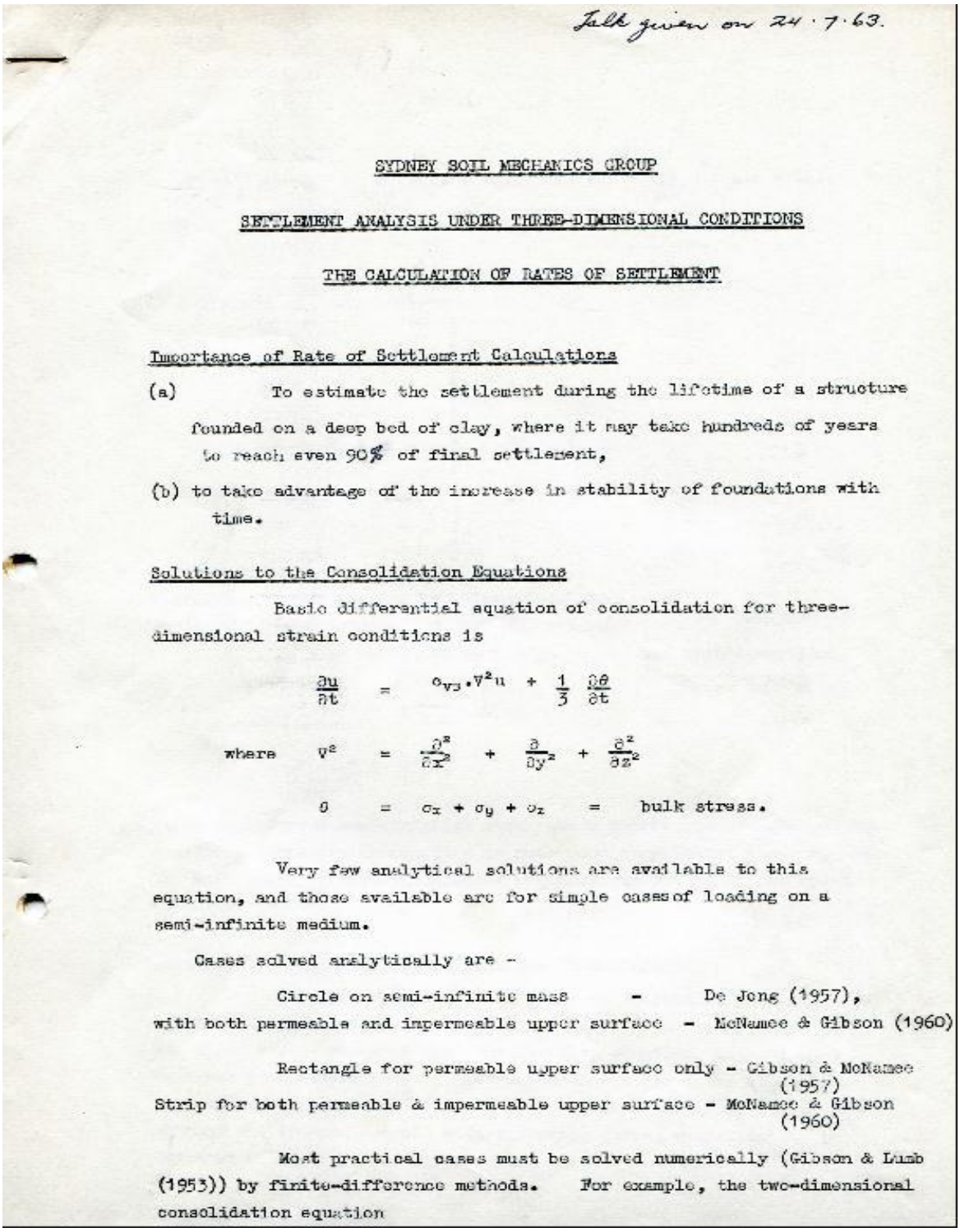

Talk given on 24·7·63.

SYDNEY SOIL MECHANICS GROUP

SETTLEMENT ANALYSIS UNDER THREE-DIMENSIONAL CONDITIONS

THE CALCULATION OF RATES OF SETTLEMENT

Importance of Rate of Settlement Calculations

(a) To estimate the settlement during the lifetime of a structure founded on a deep bed of clay, where it may take hundreds of years to reach even 90% of final settlement,

(b) to take advantage of the increase in stability of foundations with time.

Solutions to the Consolidation Equations

Basic differential equation of consolidation for three-dimensional strain conditions is

$$\frac{\partial u}{\partial t} = c_{v3} \cdot \nabla^2 u + \frac{1}{3} \frac{\partial \theta}{\partial t}$$

where $\nabla^2 = \frac{\partial^2}{\partial x^2} + \frac{\partial}{\partial y^2} + \frac{\partial^2}{\partial z^2}$

$\theta = \sigma_x + \sigma_y + \sigma_z$ = bulk stress.

Very few analytical solutions are available to this equation, and those available are for simple cases of loading on a semi-infinite medium.

Cases solved analytically are –

Circle on semi-infinite mass – De Jong (1957), with both permeable and impermeable upper surface – McNamee & Gibson (1960)

Rectangle for permeable upper surface only – Gibson & McNamee (1957)

Strip for both permeable & impermeable upper surface – McNamee & Gibson (1960)

Most practical cases must be solved numerically (Gibson & Lumb (1953)) by finite-difference methods. For example, the two-dimensional consolidation equation

Figure 3 Front page of a handout at a seminar given by H.G. Poulos in July 1963.

THE AUSTRALASIAN REGION – THE PAST (Continued)

Table 1 Chairmen of the Australian Geomechanics Society

Name	*Period of Office*
D.H. Trollope	1971-72
C.R. Longworth	1972-73
A.D. Hosking	1974-75
W.E. Bamford	1976-78
P.C. Hollingsworth	1979-81
H.G. Poulos	1982-84
P.W. Mitchell	1985-87
N.S. Mattes	1988-90
M.C. Ervin	1991-93
G.R. Mostyn	1994-95
A.B. Phillips	1996-97
C.M. Haberfield	1998-99
J.P. Carter	2000-01
A.R. Leventhal	2002-03
M.B. Jaksa	2004-05
M.A. Woodward	2006-07
N.D. Benson	2008-09
G. K. Scholey	2010-11
S. Mackenzie	2012-13

4. THE NEW ZEALAND GEOTECHNICAL SOCIETY

The New Zealand Geotechnical Society (NZGS) has followed a path similar to that of the AGS. The first meeting of the New Zealand National Committee was held on 17th July 1958, with J.W. Ridley being elected Chairman and R.D. Northey being elected Secretary. Statutes for the "New Zealand National Society for Soil Mechanics and Foundation Engineering" were drawn up and the subscription was set at 10 shillings (1 NZ dollar) per annum. Both the International Society and the Australian National committee were informed of this development.

In 1972, the Society changed its name to the New Zealand Geomechanics Society, and then in 1996, the name was changed to the present New Zealand Geotechnical Society.

5. AUSTRALASIAN REGIONAL VICE-PRESIDENTS

The Australasian Region of ISSMGE comprises only two member societies, the AGS and the NZGS. There is close cooperation between the two societies and also an agreement in relation to the election of regional Vice-Presidents, in that the Australian Society will make a nomination for two successive terms and then the New Zealand Society will make the nomination for the next term. While it has been customary for each Society to nominate from its own members, this has not always been the case, and there are at least two cases in which a nomination of a member of the other Society has been made.

Table 2 lists the official Australasian Regional Vice –Presidents. There is an indication that, during the period 1953-57, J.M. Lee was the Vice-President, but it is understood that this was not an official nomination.

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Table 2 Australasian Vice-Presidents of ISSMFE/ISSMGE

Name	*Country*	*Period of Office*
G.D. Aitchison	Australia	1957-61
J. Birrell	New Zealand	1961-65
D.H. Trollope	Australia	1965-69
E.H. Davis	Australia	1969-73
P.W. Taylor	New Zealand	1973-77
A.D. Hosking	Australia	1977-81
R.D. Northey	New Zealand	1981-85
J.H.H. Galloway	New Zealand	1985-89
H.G. Poulos	Australia	1989-94
M.C. Ervin	Australia	1994-97
M.F. Randolph	Australia	1997-2001
J.G. Murray	New Zealand	2001-05
J.P. Carter	Australia	2005-09
M.C.R. Davies	New Zealand	2009-13

6. SOME PERSONALITIES

This section provides some very brief details of five persons who were very influential within the Australasian Region and who pioneered the geotechnics in the region.

Dr. G. D. Aitchison

Dr. Gordon Aitchison (Figure 4) was born in Adelaide South Australia on 6th March 1918, and died in Mornington Victoria in June 2003. He made major contributions to the mechanics of unsaturated soils and developed a very strong research group within the then CSIRO Division of Geomechanics in the 1960's and 1970's. Among his protégés were Ian Donald and Brian Richards.

Figure 4 Dr. Gordon Aitchison (1918-2003)

Prof. E.H. Davis

Edward Hughesden Davis (Figure 5) was born in Hendon England on 16th December 1920, and died in Sydney Australia on 27th February 1981. Davis joined the University of Sydney in 1952 and started the systematic teaching of soil mechanics. He made major contributions to soil mechanics, the theory of plasticity, the theory of elasticity as applied to soils, and the theory of consolidation. His contributions were recognised by his election to the Australian Academy of Science. He also acted as a consultant on several important projects and was a specialist consultant for the firm of Coffey and Hollingsworth in the 1970's and 1980's. Among his protégés were the late Don Douglas, Harry Poulos, the late John Booker, John Carter and Kerry Rowe. Roderick (1982) provides a more complete biography of Davis.

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Figure 5 Professor Ted Davis FAA (1920-1981)

Prof. D.H. Trollope

David Hugh Trollope (Figure 6) was born in Swansea Wales on 9th March 1925 and died on 8th March 2011 in Bendigo Victoria. He migrated to Australia and joined the University of Melbourne in 1950. He started the teaching of soil mechanics at that University and developed a strong research group. In the 1960's, he moved to James Cook University in Queensland to take the position of Foundation Professor of Civil Engineering, and later became Deputy Vice-Chancellor, while still maintaining his technical interests in soil and rock mechanics. He was the third and youngest of the triumvirate of Aitchison, Davis and Trollope, that was so influential in developing soil mechanics and geotechnical engineering in Australia.

Trollope made major contributions to arching in soils, and pioneered the area of "clastic mechanics", which found application in the emerging field of rock mechanics as well as in traditional soil mechanics. His contributions to the university and to his profession were recognised by his appointment as an Officer of the Order of Australia (AO). Among his protégés were Ted Brown, Jack Morgan, Ian Lee, Dick Parry, Alan Parkin, Robin Friday and Kevin Rosengren.

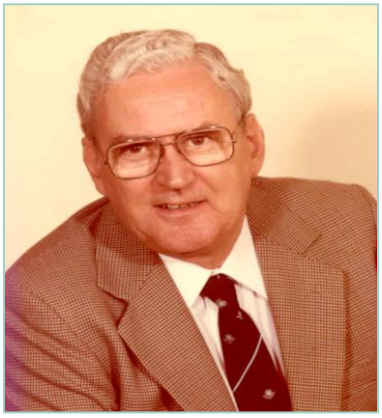

Figure 6 Professor Hugh Trollope AO (1925-2011)

Prof. P.W. Taylor

Peter Taylor (Figure 7) was born in New Zealand in 1925 and died there in 2011. He developed the soil mechanics group at the University of Auckland in the 1960's and made major contributions to geotechnical earthquake engineering and the behaviour of soils under cyclic and dynamic loading. Among his protégés are Michael Pender, Geoff Martin, Bruce Menzies and Terry Kayes.

THE AUSTRALASIAN REGION – THE PAST (Continued)

Figure 7 Professor Peter Taylor (1925-2011)

Dr. R.D. Northey

Dr. Roy Northey (Figure 8) was born in New Zealand on 5th April 1924 and died in New Zealand on 16th November 2011. He studied at Imperial College London under the guidance of Professor A.W. Skempton and then returned to New Zealand to join the DSIR. He was with that organization from 1950 to 1981, and made major contributions to soil mechanics, foundation design and the assessment of geotechnical risk. He was the 3rd New Zealand Lecturer (1979) and was Australasian Vice-President of ISSMGE during the period 1973-1977. One of his key disciples was John Hawley.

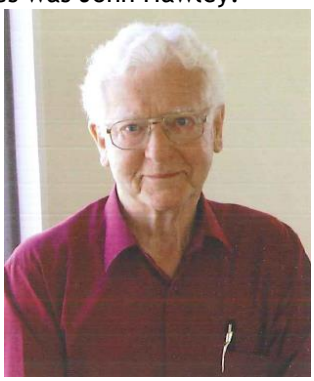

Figure 8 Dr. Roy Northey (1924-2011)

6. AUSTRALASIAN CONFERENCES

Australasia can proudly claim to have organized the first regional conference of ISSMFE in 1952. Dr. Hugh Trollope was the key figure in organising this conference, which focussed on the shear strength of soils and which was held in Melbourne. This conference was reviewed in Geotechnique in March 1953, and parts of this review are reproduced in Figure 9. It highlighted the issue of unsaturated soils which became a major topic of research in Australia over the next two decades.

Subsequent Australia New Zealand Conferences were held in Australia and New Zealand, with a pattern of two conferences in Australia and one in New Zealand. Table 3 lists these conferences, and it can be noted that the name of the conference changed in 1971, following the formation of the Australian and New Zealand Geomechanics Societies.

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In the international arena, in the year 2000, Australia hosted a very successful conference, GeoEng 2000, which was sponsored jointly by ISSMGE, ISRM, IAEG, but also with the support of three other international societies, ITA, IGS and IAH.

Australia has also made a number of bids to host the quadrennial conference of ISSMFE/ISSMGE, namely in 1965, 1977, 1991 and 1995. Unfortunately, all bids were unsuccessful. Undaunted, Australia is making yet another attempt, by bidding for the next ISSMGE conference in 2017, with Sydney as the host city.

A REVIEW OF THE FIRST AUSTRALIA – NEW ZEALAND CONFERENCE ON SOIL MECHANICS AND FOUNDATION ENGINEERING

by

D. H. TROLLOPE, M.Sc.

The Conference was held at the University of Melbourne, during the week commencing June 2nd, 1952, under the auspices of the Faculty of Engineering of the University, and the Institution of Engineers (Australia). The subject of the Conference was " The Shear Characteristics of Soils " on which the following Papers were presented :—

(1) " The Chemistry of Soils "	Assoc. Prof. G. W. Leeper
(2) " The Movement of Water in Unsaturated Soils "	J. W. Holmes
(3) " A Note on the Physical Aspect of Cohesion "	D. H. Trollope
(4) " The Physical Condition of the Soil as a Modifying Factor in the Measurement and Interpretation of Shear Strength "	G. D. Aitchison
(5) " Physical Properties of Volcanic-Ash Soils and their Shear Characteristics "	K. S. Birrell
(6) " The Basic Law of Shear Strength "	D. H. Trollope
(7) " Shear Resistance of Soils "	J. McN. Turnbull

CONCLUSIONS

In the Writer's opinion, the conclusions to be drawn from the Conference are twofold. First, particularly in Australia, the influence of environment on soil behaviour is of vital importance. Considerable attention needs to be paid to the shear characteristics of soils in the unsaturated state, both remoulded and undisturbed. Secondly, the definition of cohesion as a fundamental soil property is one about which, at present, there is much conflicting opinion ; engineers are dependant to a large extent upon progress in the science of colloid chemistry for resolution of this problem. Close collaboration between the two branches is essential, however, to bring about the attainment of this end.

The Proceedings of the Conference will be published, early in 1953.

Figure 9 Review of 1st ANZ Conference, in Geotechnique, March 1953.

THE AUSTRALASIAN REGION – THE PAST (Continued)

Table 3 Australia New Zealand Regional Conferences (1952-2012)

Conference	*Location*	*Year*
1st ANZ Conference SM&FE	Melbourne	1952
2nd ANZ Conference SM&FE	Christchurch	1956
3rd ANZ Conference SM&FE	Sydney	1960
4th ANZ Conference SM&FE	Adelaide	1963
5th ANZ Conference SM&FE	Auckland	1967
1st ANZ Conference on Geomechanics	Melbourne	1971
2nd ANZ Conference on Geomechanics	Brisbane	1975
3rd ANZ Conference on Geomechanics	Wellington	1980
4th ANZ Conference on Geomechanics	Perth	1984
5th ANZ Conference on Geomechanics	Sydney	1988
6th ANZ Conference on Geomechanics	Christchurch	1992
7th ANZ Conference on Geomechanics	Adelaide	1996
8th ANZ Conference on Geomechanics	Hobart	1999
9th ANZ Conference on Geomechanics	Auckland	2004
10th ANZ Conference on Geomechanics	Brisbane	2007
11th ANZ Conference on Geomechanics	Melbourne	2012

7. AUSTRALIAN SOCIETY AWARDS AND PUBLICATIONS

7.1 Awards

Since the late 1970's, AGS has instituted a series of awards and prizes to recognise achievement in the field of Geomechanics. Some of these awards carry the name of distinguished contributors to the geotechnical profession in Australia.

The main awards are as follows:

- The John Jaeger Memorial Award, given every 4 years, recognizing contributions of the highest order over a lifetime commitment to the geotechnical profession in Australia; commenced 1980.
- The E.H. Davis Lecture, awarded every 2 years for distinguished recent contributions to the theory and practice of geomechanics in Australia; commenced 1985.
- D.H. Trollope Medal, awarded every 2 years to the author of an outstanding paper on either theoretical or applied geomechanics. The work reported in the paper must have been undertaken in Australia by an author under 35 years of age; commenced 1988.
- Geotechnical Practitioner of the Year, awarded every 2 years. The award recognizes contributions of the highest order over an extended period, with a commitment to the geotechnical profession in Australia and the Australian Geomechanics Society; commenced 2004.
- Don Douglas Fellowship award of AGS, awarded every 2 years to the author of the most outstanding paper at an ANZ Young Geotechnical Professional Conference. The recipient must be a member of the AGS and be below the age of 35 at the time of receiving the award; commenced 2000.
- Australian Geomechanics Award, given annually for the best paper published in "Australian Geomechanics"; commenced 2003.

Table 4 lists the recipients of the John Jaeger Memorial Award.

THE AUSTRALASIAN REGION – THE PAST (Continued)

Table 4. Recipients of the John Jaeger Memorial Award

Recipient	*Year*
E.H. Davis	1980
G.D. Aitchison	1984
H.G. Poulos	1988
B.G. Richards	1992
D.H. Stapledon	1996
D. Coffey	1999
E.T. Brown	2004
R. Fell	2007
I.W. Johnston	2012

7.2 Publications

Regular publications of the AGS commenced in 1971 with the appearance of the first issue of the Australian Geomechanics Journal. This journal published peer-reviewed technical papers and appeared annually, with the last issue being published in 1979.

Because of procedural difficulties, the Australian Geomechanics Journal was replaced in 1980 by "Australian Geomechanics". This publication was less formal than its predecessor, and while still containing high-level technical papers, also included news items and subsequently, advertising. It has become a very popular and well-supported publication, and now appears quarterly. A number of the issues have become highly influential, including issues related to the engineering geology of the main cities in Australia, and an issue related to a framework for landslide risk management in Australia.

8. NEW ZEALAND SOCIETY AWARDS AND PUBLICATIONS

8.1 Awards

The main awards of the NZGS are as follows:

- The NZ Geomechanics Lecture is the premier award of the New Zealand Geomechanics Society. It is presented by a person prominent in Geomechanics who can, in the presentation, contribute a statement of significance and value relevant to New Zealand. The lecture is to be presented at intervals of up to four years at a minimum of three venues in New Zealand and is promoted to attract as wide an audience as possible. Following its presentation, the lecture is to be published.
- The New Zealand Geotechnical Society Geomechanics Award is awarded every three years and shall be presented at the Society's Annual General Meeting. The award shall be made to the Society member or members producing the adjudged "best" published paper during the previous three years.
- New Zealand Geotechnical Society Young Professionals fellowship - awarded to the author of the best paper by a New Zealand representative at each Australia-New Zealand Young Geotechnical Professionals conference. The recipient must be a member of the New Zealand Geotechnical Society and be below the age of 35 at the time of presenting the paper at the conference.
- New Zealand Geotechnical Society Student Awards: The New Zealand Geotechnical Society Student Awards are presented to recognise and encourage student participation in the fields of geotechnical engineering and engineering geology. In 2012 the awards were altered to a poster competition.
- Young Geotechnical Professionals Conference Awards: The Earthquake Commission Research Foundation and the NZ Geotechnical Society have awards available for New Zealanders attending the Young Geotechnical Professionals Conference.

8.2 Publications

The New Zealand Geotechnical Society produces two bulletins each year which are distributed to all members as part of their annual subscriptions. Back issues are available for purchase where available, and electronic copies of content's pages are available to scan for articles if necessary. The Society also holds

copies of many past conference and symposia proceedings which are available for purchase by both members and non-members.

The Society has published a number of guidelines, some of which can be downloaded for free, while others carry a small cost.

9. CONCLUDING REMARKS

The Australasian region has participated vigorously in the activities of ISSMGE and its predecessor, ISSMFE, for over 60 years, and the per capita membership of this region is the highest of the 6 regions within the Society.

The Australasian region has been a leader in certain activities, having organised the first regional conference on Soil Mechanics and Foundation Engineering, and having an integrated Society which embraces not only soil mechanics, foundation engineering and geotechnical engineering, but also the sister disciplines of rock mechanics and engineering geology.

The strong foundation developed by the pioneers of the discipline in each country has created a platform for the growth and advancement of Geotechnics, not only in Australasia, but globally.

ACKNOWLEDGEMENTS

The author is grateful to Professors E.T. Brown and M.J. Pender for their assistance in providing background information on some of the past eminent figures in Australasian geomechanics, and to Max Ervin for his helpful comments.

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ISSMGE in the Australasia Region : The present

Michael C R Davies
Vice President for Australasia and First Vice President of the ISSMGE

The Australasia Region

In terms of the number of Member Societies Australasia is the smallest of the six ISSMGE regions. The Australasian Region of the ISSMGE comprises of only two Member Societies, Australia and New Zealand, but also represents activities of the Society in the South Pacific. Although there is extensive geotechnical engineering activity in Papua New Guinea and the South Pacific islands of Fiji and New Caledonia, they currently do not have member societies or other coordinated associations. Nevertheless, if the numbers of individual members in the two Member Societies that constitute the region are considered, the region is the fourth largest; with Australia and New Zealand having the fourth and eleventh largest number, respectively, of ISSMGE members of the 87 member societies. In 2011 Professor Roberto Terzariol, Vice President for South America, presented an analysis of the ratio of the number of ISSMGE members in each society to the number of millions of inhabitants of each country (ISSMGE Bulletin, Volume 5, Issue 2, April 2011). Updating this analysis for 2013, the median value of this ratio for the Australasia region - at 89 ISSMGE members per million inhabitants - is some four times greater than that of the region with the next highest ratio, i.e. Europe which has a median value of 20, Fig. 1. This analysis indicates that, relative to the other ISSMGE regions, in terms of attracting members to the ISSMGE the two societies in the Australasia region are currently highly successful. This relative strength of the Australian Geomechanics Society (AGS) and the New Zealand Geotechnical Society (NZGS) has been the result of the hard work and enthusiasm of the officers and members of the two societies over many years, it is also a reflection of the importance for society in Australia and New Zealand of there being good practice in geotechnical engineering.

Figure 1. ISSMGE Members per 10^6 of the population
(Based on data presented by Professor Roberto Terzariol, Vice President for South America; ISSMGE Bulletin, Volume 5, Issue 2, April 2011)

The AGS is the largest Technical Society within Engineers Australia and its membership in 2013 stands at 1,743 (1,276 in 2009); of these members 1,033 (800 in 2009) are affiliated to ISSMGE. This represents a growth of 29% in ISSMGE membership since 2009. In addition, the society currently has 44 corporate members that represent a wide range of consulting and contracting organisations. The society is managed by a National Committee and is represented in the States and Territories of the Commonwealth of

ISSMGE in the Australasia Region : The present (Continued)

Australia by eight Chapters, Fig. 2. Each of these Chapters has its own regional committee and organises a vibrant technical programme. The mission of the AGS is to encourage advancement and excellence in the theory and practice of geomechanics and to promote these both in Australia and overseas.

Founded in 1958, the NZGS became the first technical group of the Institution of Professional Engineers New Zealand (IPENZ) in 1965. In recent years the NZGS has also seen a steady rise in membership. In 2013 the NZGS has a membership of 982 (731 in 2009) of whom 575 (421 in 2009) are ISSMGE members. The increase in ISSMGE membership over the period since 2009 has been 37%. As Fig. 1 shows, this is a very high number relative to the population of New Zealand (4.4 million) – the highest for any of the 87 ISSMGE Member Societies - and possibly reflects the increased requirement for geotechnical engineers in a geologically active developed region of the world. The NZGS is overseen by a Management Committee and has seven branches located throughout the country, Fig. 3; each of which has its own programme of technical events. The aims of the Society are to: (i) advance the education and application of soil mechanics, rock mechanics and engineering geology among engineers; (ii) advance practice and application of these disciplines in engineering; (iii) implement the statutes of the respective International Societies; (iv) ensure that the learning achieved through the above objectives is passed on to the public as is appropriate.

Australian Geomechanics Society

Australian Geomechanics Society

Chapters

- Queensland
- NSW – Sydney
- NSW – Newcastle
- Victoria
- Tasmania
- South Australia & NT
- Western Australia
- WA - Kalgoorlie

Figure 2. Australian Geomechanics Society

New Zealand Geotechnical Society

NZ Geotechnical Society

Branches:

- Auckland
- Bay of Plenty
- Christchurch
- Nelson
- Otago
- Waikato
- Wellington

Figure 3. New Zealand Geotechnical Society

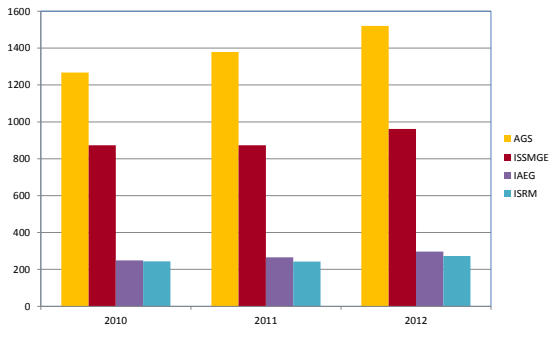

Figure 4. Membership of the Australian Geomechanics Society

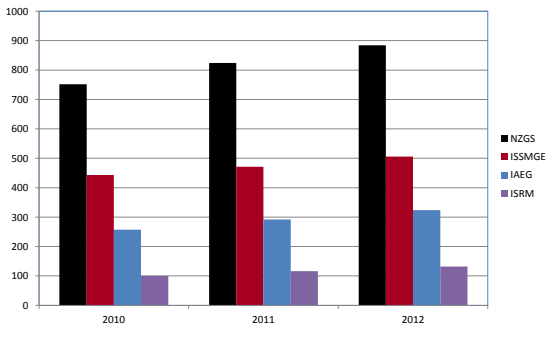

Figure 5. Membership of New Zealand Geotechnical Society

To some extent the importance of geotechnical engineering in both Australia and New Zealand is for similar reasons but there are specific national conditions that prevail. For example, in both countries there is a requirement to deal with natural hazards that have large scale detrimental effects on society.

ISSMGE in the Australasia Region : The present (Continued)

However, whilst slope stability presents geotechnical challenges to engineers on both sides of the Tasman Sea – which separates the two countries – New Zealand is located at the boundary of the Australian and Pacific tectonic plates and has, therefore, a much higher risk of major earthquake hazards than Australia, which is not located on any major tectonic plate boundaries. Australia has an extensive mining industry that requires the expertise of geotechnical engineers. This industry is contributing to a relatively strong economy in Australia and the growth in its population. This, in turn, has resulted in major opportunities for infrastructure development. There is a demand in both countries, therefore, for practitioners with a wide range of expertise across the range of geotechnical engineering; including engineering geology, rock mechanics and soil mechanics. It is not surprising, therefore, that both the AGS and the NZGS are the national societies for the IAEG and the ISRM as well as the ISSMGE. Although in both cases ISSMGE members represent the largest group, Figs. 4 and 5.

Activities of the Member Societies

The Australian Geomechanics Society and the New Zealand Geotechnical Society are both highly vibrant member societies of the ISSMGE. Because of the geographical spread of their membership both societies organise their activities through their Chapters (AGS) or Branches (NZGS). In addition to regular technical meetings both societies have very active programmes of special events. These include Young Geotechnical Professional activities, specialist seminars and professional development courses together with lectures from distinguished international speakers. Both societies have their own journal and publish technical guides they also provide a range of technical information of interest and use to their members on their websites (http://australiangeomechanics.org/ and http://www.nzgs.org/). In addition, the societies engage with other learned societies, technical organisations and professional bodies together with national standards organisations, and both national and regional government, to provide technical advice and represent the profession. Both societies also recognise the achievements of their members through a variety of prizes and awards.

Publications and Technical Advice

Australian Geomechanics is the "official" journal of the AGS, which is published quarterly, in March, June, September and December, by the Institution of Engineers Australia, Fig. 6. It is edited and produced by the Australian Geomechanics Society and is distributed to all members of the AGS. At the end of 2009 the AGS published a DVD which contains copies of all papers published in *Australian Geomechanics* from 1971 to end of 2009. Over the last few years *Australian Geomechanics* has published special issues concentrating on the geotechnics in regions of the country together with a special issue (in June 2011) on landslide risk management.

The Australian Geomechanics Society has also developed and published a series of benchmark guidelines on landslide risk management and slope management and maintenance, Fig. 7. These were published in the *Australian Geomechanics* Journal in March 2007 and build on previous guidelines published in 2000. In the first half of 2011, through its network of local Chapters, the AGS supported a "National Landslide Risk Management Roadshow" to disseminate the new "Geoguides" to relevant end users. The roadshow (which became known as the "Risky Roadshow") provided information to a large number of local government officers and practitioners about the Landslide Risk Management guidelines and geoguides, Fig. 8.

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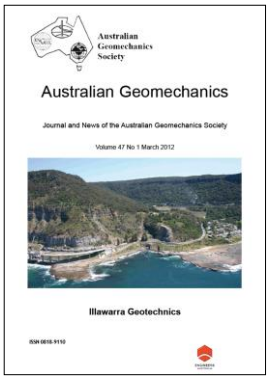

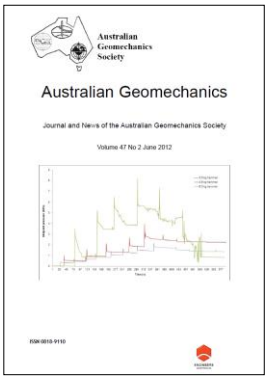

Figure 6. Publications - Australian Geomechanics Society

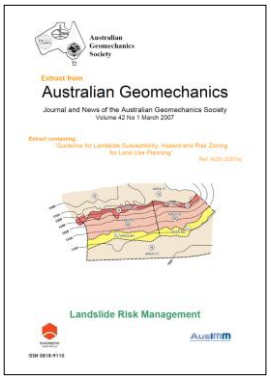

Figure 7. Guidelines - Australian Geomechanics Society

Landslide Risk Management – Education Empowerment Website

Australian GeoGuides:

- GeoGuide LR1 - Introduction
- GeoGuide LR2 - Landslides
- GeoGuide LR3 - Landslides in Soil
- GeoGuide LR4 - Landslides in Rock
- GeoGuide LR5 - Water & Drainage
- GeoGuide LR6 – Retaining Walls
- GeoGuide LR7 - Landslide Risk
- GeoGuide LR8 - Hillside Construction
- GeoGuide LR9 - Effluent & Surface Water Disposal
- GeoGuide LR10 - Coastal Landslides
- GeoGuide LR11 - Record Keeping

Figure 8. Advice - Australian Geomechanics Society

The New Zealand Geotechnical Society publishes a biannual bulletin, *Geomechanics News*, for its members in June and December of each year, Fig. 9. The bulletin, which contains papers reporting geotechnical research and practice in or directly relevant to New Zealand as well as news about the society and its members, has grown significantly of late and now averages just over 100 pages per issue. Each issue of the bulletin publishes special features. Most notable of these in recent years is the June 2011 issue, which contained a series of articles about the February 2011 Christchurch earthquake sequence.

As with the AGS, the NZGS also develops and publishes guidelines for its members, Fig. 10. The most recent of these is *Guidelines for the Electronic Transfer of Geotechnical and Geoenvironmental Data*, published in 2012. In 2010 the NZGS published the first module of its earthquake engineering guidelines, *Geotechnical Engineering Practice - Module 1 - Guideline for the identification, assessment and mitigation of liquefaction hazards*. The purpose of the series of guidelines is to provide authoritative material to help engineers address geotechnical issues related to the design of buildings and structures in conjunction with national building codes. Whilst the NZGS has been involved in developing geotechnical earthquake engineering advice for many years, the commencement of the Canterbury earthquake sequence in 2010 has increased the requirement for this and the NZGS has responded by accelerating the process of preparing the second and third modules in its Seismic Design Guidelines series. These modules address the seismic design of foundations and retaining walls, respectively.

In the immediate aftermath of the initial major shocks of the Canterbury earthquake sequence the NZGS worked with the Institution of Professional Engineers New Zealand (IPENZ) to produce a series of fact sheets for the public to explain the effects of earthquakes on buildings and infrastructure, Fig. 11. The

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NZGS has also provided formal submissions on geotechnical matters to the official investigation (The Canterbury Earthquakes Royal Commission) into causes of building failure as a result of the earthquakes and the legal and best-practice requirements for buildings in New Zealand Central Business Districts. It is also contributing to revised Building Assessment Guidelines.

Figure 9. Publications - New Zealand Geotechnical Society

Figure 10. Guidelines - New Zealand Geotechnical Society

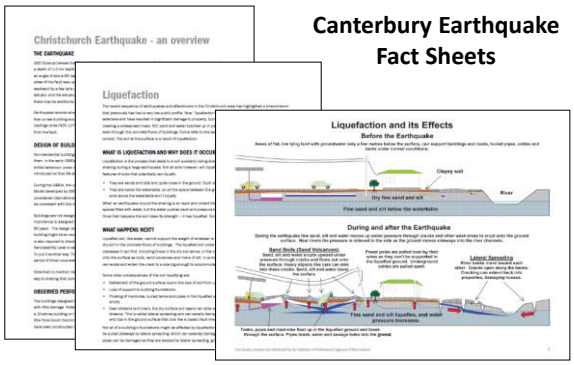

Figure 11. Advice - New Zealand Geotechnical Society

Prizes and Awards

Both the AGS and NZGS have a number of prizes and awards to recognise the achievements of their members. To encourage members who are in the early stages of their careers both societies have special awards for both students and young geotechnical professionals. A brief description of the prizes and awards is presented in Table 1.

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Table 1 – ANZ, NZGS and Joint Societies Prizes and Awards

Australian Geomechanics Society	New Zealand Geotechnical Society
John Jaeger Memorial Award Recognises contributions of the highest order over a lifetime of commitment to the geotechnical profession in Australia. **E.H. Davis Memorial Lecture** The lecturer is awarded to a member who has made a distinguished recent contribution to the theory and practice of geomechanics in Australia. **Practitioner of the Year** Recognises contributions of the highest order over an extended period with a commitment to the geotechnical profession in Australia and the Australian Geomechanics Society **D.H. Trollope Medal** The Trollope Medal is awarded to the author of an outstanding paper on either theoretical or applied geomechanics. **The Australian Geomechanics Award** Recognises the authors of the best paper published in Australian Geomechanics in each calendar year. **AGS – Don Douglas Youth Fellowship** Awarded to the author of the most outstanding paper at an ANZ Young Geotechnical Professional Conference, or the most recently held ANZ Geomechanics Conference. The recipient must be below the age of 35 at the time of receiving the award.	**New Zealand Geotechnical Society Geomechanics Lecture** The premier award of the New Zealand Geomechanics Society awarded for prominence in Geomechanics. **New Zealand Geotechnical Society Geomechanics Award** Awarded for the best paper published during the three years preceding the date of the Award that is distinguished in its contribution to the development of geotechnics in New Zealand. **New Zealand Geotechnical Society Scholarship** Award to provide funding for a scholarship that would enable a member of the Society to undertake postgraduate study in New Zealand that would advance the objectives of the Society **New Zealand Geotechnical Society Young Geotechnical Professionals Fellowship** Awarded to the author of the best paper by a member at the ANZ Young Geotechnical Professionals conference. **Young Geotechnical Professionals Conference Awards** Awards to attend the Young Geotechnical Professionals Conference. **New Zealand Geotechnical Society Student Awards** Recognises and encourage student participation in the fields of geotechnical engineering and engineering geology.
Joint Societies Award This award is presented at the ANZ Geomechanics Conference for the most valuable conference paper. The winner may be a member of either the AGS or NZGS	

Contributions to the wider ISSMGE

Both societies in the Australasia region, regularly host or sponsor well supported specialty conferences, seminars and symposia which are organised under the auspices of the ISSMMGE. Most notable of these is the four yearly ISSMGE Australasia regional conference. The most recent of these, the 11th Australia New Zealand Conference on Geomechanics - “Ground Engineering in a Changing World” (ANZ 2012), was held in Melbourne during July 2012. This conference, which attracted 558 delegates from around the world, was universally acclaimed as a great success both from its technical content and the high standard of its

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organisation. This demonstrated that the AGS was not only capable of organising a world class conference but it could also attract delegates to it from around the globe. The 12th ISSMGE Australasia regional conference - The Changing Face of the Earth: Geo-Processes and Human Accelerations (ANZ 2015) will be held in Wellington, New Zealand in February 2015.

The region also organises a conference for young geotechnical professionals to coincide with its quadrennial ISSMGE regional conference. The latest in this series of conferences was the 9th ANZ Young Geotechnical Professionals Geotechnical Conference which took place in Melbourne immediately prior to ANZ 2012.

There are a number of major ISSMGE conferences being planned to be held in the region in the next few years. The 5th International Conference on Earthquake Geotechnical Engineering (TC203) to be held, most appropriately, in Christchurch, New Zealand in 2015. Four ISSMGE conferences will be taking place in Australia: 8th International Conference on Physical Modelling in Geotechnics (TC104), Perth in 2014; 7th International Congress on Environmental Geotechnics (TC215), Melbourne 2014; 6th International Conference on Unsaturated Soils (TC106), Brisbane in 2014; 5th International Conference on In-situ Testing and Geophysical Characterisation (TC102), Brisbane in 2016.

In 2000 the Australian Geomechanics Society hosted the highly successful international conference GeoEng 2000. This was organised by the AGS on behalf of the ISSMGE together with the International Society for Rock Mechanics (ISRM) and the International Association of Engineering Geology and the Environment (IAEG). However, whilst both the ISRM and the IAEG have held their major quadrennial international conference in the Australasia region, despite the strong support for the ISSMGE in Australia and New Zealand, neither the AGS nor the NZGS has had the privilege to host the International Conference on Soil Mechanics and Geotechnical Engineering (ICSMGE) on behalf of the ISSMGE. As a successful and vibrant ISSMGE region, members are eager to be awarded this distinction. Therefore, having demonstrated in GeoEng 2000 and ANZ 2012 its ability to host major international conferences, the AGS has prepared a very strong bid to host the 19th International Conference of the Society for Soil Mechanics and Geotechnical Engineering (ICSMGE) in Sydney during September 2017, Fig. 12. In the hope of redressing the anomaly of the Australasia region not having hosted the ICSMGE, the AGS bid for the 19th ICSMGE is supported strongly by the NZGS. This bid will be considered by the ISSMGE Council at its meeting in Paris in September 2013.

Figure 12. Logo for ICSMGE 2017 bid by the Australian Geomechanics Society

ISSMGE members of the AGS and NZGS are active in the Society's Technical Committees and the ANZ hosts two TCs, viz. Physical Modelling (TC104) and Geo-Engineering Education (TC306). These two TCs are chaired by Professor Christophe Gaudin and Professor Mark Jaksa, respectively. Members of the AGS also serve as officers of TCs; Professor David White is the Secretary of TC104 and Professor Mark Randolph the Vice-Chair of TC209 (Offshore Geotechnics). Dr Elisabeth Bowman of the NZGS is the Secretary of TC208 (Slope Stability).

During his term of office the President of the ISSMGE, Professor Jean-Louis Briaud has introduced a number of Board Level Committees to assist the ISSMGE Board in managing the business of the Society. The Australasia region is represented amongst the officers of the inaugural Board Level Committees by

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Professor Harry Poulos, who is Chair of the Membership, Practitioners and Academicians Committee, and Sukumar Pathmanadavel, who is Vice-Chair of the Corporate Associates Presidential Group. In addition the region has representatives on all the other Board Level Committees. These members are Professor Mark Cassidy (Technical Oversight Committee), Professor Mark Jaksa (Public Relations Committee), Lucy Coe, Brendan Scott and Colin Dickson (Student and Young Member Presidential Group), and Professor Indraratna Buddhima (Awards Committee).

Conclusion

Although the ISSMGE Australasia region has only two Member Societies, the high quality of the advancement of theory and practice in geotechnical engineering in the region together with the energy of the membership and management committees of the Australian Geomechanics Society and the New Zealand Geotechnical Society result in the region being highly active. The AGS and NZGS are both vibrant societies that:

- Represent the breadth of specialisms in the geoengineering profession (i.e. they are Member Societies of ISSMGE, ISRM and IAEG);
- As learned societies facilitate lectures, symposia, conferences and educational programmes for their members;
- Provide technical advice to the profession and related professions and interpret technical issues to the general public;
- Advocate on behalf of the profession to government;
- Participate actively in international activities as part of the ISSMGE (including hosting conferences and taking leading roles in Technical Committees and Board Level Committees).

In the present both the AGS and the NZGS continue to build on their heritage as two very active Member Societies of the ISSMGE. It is, therefore, exceptionally pleasing that one of the two societies, the NZGS, has been recognised by the ISSMGE for its vitality by being selected for the inaugural Award for the Outstanding Member Society, which will be presented at the 18th International Conference of the Society for Soil Mechanics and Geotechnical Engineering in Paris during September 2013. This augurs very well for the continued significant contribution of the AGS and the NZGS to the activities of the geotechnical engineering profession, both within and outwith the Australasia region, into the future.