

149th ANNUAL REPORT

of the

ROYAL SOCIETY OF NZ WELLINGTON BRANCH

Year ended 31 August 2000

**Report for the 149th year of
ROYAL SOCIETY OF NZ WELLINGTON BRANCH**

Founded July 1851 as the New Zealand Society

Reconstituted November 1867

Renamed the Wellington Philosophical Society and
incorporated with the New Zealand Institute 1868

Renamed in 1939 as the
Wellington Branch of the Royal Society of New Zealand.

The Society was incorporated as
Science Wellington Incorporated in 1995.

Reconstituted in 1999 as the
Royal Society of New Zealand Wellington Branch.

**Report for the year ended 31 August 2000
to be presented at the
Annual General Meeting in
the Royal Society Science Centre
on Wednesday 25 October 2000 at 7:30pm.**

RSNZ Wellington Branch
P. O. Box 3085
Wellington
New Zealand

COUNCIL OFFICE BEARERS AND MEMBERS FOR 2000

PRESIDENT	George Jones
VICE-PRESIDENTS	Grant Williams Colin Bassett
SECRETARY	David Lillis
TREASURER/ MEMBERSHIP SECRETARY	Graeme Claridge
ASSISTANT TO THE SECRETARY	Phillip Alve
NEWSLETTER EDITOR	Bart Provo
FINANCIAL REVIEWER	Otto Bauer
COUNCIL MEMBERS	Mike Arnold Helen Hughes Suzi Penny

REPRESENTATIVES OF SECTIONS AND AFFILIATES

NZ Institute of Agricultural Science	Dick Burgess
Archaeology Section	Pat Stodart
Wellington Astronomical Society	Robert Persse
Phoenix Astronomical Society	Richard Hall
Biology Section	Colin Bassett
NZ Institute of Chemistry - Wellington Branch	John Spencer
Australasian Corrosion Association	Nick Laycock
Geology Section and GSNZ	Warren Dickinson
Geophysics Section	Mark Chadwick
NZ Meteorological Society	Tony Simmers
Physics Section and NZIP - Wellington Branch	Grant Williams
Science Fair	Phillip Alve
Wellington Science Teachers' Association	Doreen Gates

MEMBERSHIP

Total	211	(219)	(The numbers in brackets are last years)
Ordinary and family members	180	(187)	
Associate members	2	(6)	
Emeritus members	14	(10)	
Life members	11	(11)	
Honorary members	4	(5)	

Membership continues to decline, with only two associate members remaining. This category is restricted now to students and there are very few young people in this category joining us. Older members have resigned or become emeritus. Our meetings are well attended, and we should encourage these to join us, especially the young people starting their career in science. If for nothing else, we need them to eventually take over the running of the Branch.

The number of emeritus members has increased slightly as some are added and some eventually come to the end of their life. It is encouraging to think that we can inspire people to stay with us and pay their subscriptions for 50 years.

PRESIDENTS REPORT

2000 RSNZ Wellington Branch

We now have effective communication with the scientific community in the region. Email notification of lectures has resulted in increased attendances; all get an appreciation of what's happening from the lecture summary even if they don't attend. As knowledge of the existence of our email list increases, other bodies have added their lectures, contributing to an exciting and varied range of talks, available to all.

Often we are learning about these lectures too late to incorporate in the printed monthly newsletter but can adequately advertise them to the about 1100 email addresses. This largely supersedes the need for the printed newsletter, so it is our intention to print far fewer, for those not on email, and rely heavily on email and web communication. Thus our mailing and printing costs will reduce to help compensate for the increased number of lectures held at Science House.

Last year we had a trial agreement with RSNZ whereby the Branch treats the Wellington area RS members the same as its own members except for voting

rights. We were funded by a small amount from these members' RS subscription. This year we lost that funding but are continuing to look after these people. This has weakened our financial position, hence the need to look carefully at costs.

Our main current business is lectures, so the more we have and the better we promote them the better we are doing. As a generalist myself, I strongly advocate that the scientific community attend lectures that are outside their speciality area.

We have done very well this year - we have promoted a total of over 140 events, organised by the branch, various affiliated organisations and others. Nearly half have been held at Science House.

We have held a wide variety of general lectures, most associated with branch sections or other groups. Subjects included ecology, food, human genomics, DNA, human population, materials strength, astronomy, space exploration, risk management, RS&T, scientists' biographies, and science history.

The Hudson lecture was given by Prof. Peter Barrett about Antarctic glacial history, and the Rutherford by Prof. Michael Kelly about information technology.

The branch is formally a committee of the Royal Society of New Zealand, as a regional constituent organisation under its 1997 Act. It is also an incorporated society. It subscribes to the same aim at the parent body -the advancement and promotion of science and technology in New Zealand.

It has a formal or informal arrangement with the following groups - traditional sections, affiliation agreements, joint committees, informal associations:

Agricultural Science - NZ Institute of Agricultural Science

Archaeology

Astronomy - Wellington Astronomical Society,

Phoenix Astronomical Society

Biology

Chemistry - NZ Institute of Chemistry

Corrosion - Australasian Corrosion Association

Geology - Geological Society of NZ

Geophysics - NZ Geophysical Society

Meteorology - NZ Meteorological Society

Physics - NZ Institute of Physics

Royal Society of NZ
Science Fair
Science Teachers - Association of Science Educators

In addition there are some under discussion or in recess:

RSNZ Members
Association of Women in Science
Ecology
Young Scientists
Social Sciences
Technology

There are some possibilities we have yet to investigate.

We have also advertised lectures organised by Victoria University, Te Papa, Carter Observatory, Royal Aeronautical Society, Institute of Electrical Engineers and others.

This coming year we celebrate the sesqui-centennial of the branch's existence. We are looking for ideas for a full, informative and entertaining time.

As we cannot change historical facts - in particular that the year after BC 1 was AD 1 - then we also celebrate the new millennium next year. So we have a double reason for celebration.

I wish to thank all Branch Council members for their willing and able assistance, and you, the members of the branch for your support, provided in many ways.

George Jones, President, Royal Society of New Zealand Wellington Branch

MINUTES OF THE 1999 ANNUAL GENERAL MEETING

Minutes of the Annual General Meeting of the Royal Society of New Zealand
Wellington Branch held at the Royal Society Science Centre, Thorndon, on
Wednesday 27 October 1999 at 7.30 pm.

Present

George Jones (Acting President), David Lillis (Secretary), Colin Bassett, Helen Hughes, Bruce Miller, Pat Stodart, Graeme Claridge, Philip Alve, Warren Dickinson + 35 others.

1. Apologies

Apologies were received from Mike Arnold and Frances Kell and informally from Grant Williams and Bart Provo.

2. Minutes of the Annual General Meeting of 1998 and Matters Arising

The minutes of the 1998 AGM were outlined and accepted as a true and accurate record.

3. Annual Report

It was noted that Grant Williams had given the President's Report in the Annual Report of 1999. There were no matters arising.

4. Financial Statement

Graeme Claridge presented the 1999 Financial Statement. He indicated a slight surplus for the year and stated that approximately half of the society's expenditure goes on preparation of the monthly newsletters, and the other half on rental of rooms for meetings. He noted that banks were now offering declining interest rates and that subscriptions had been decreased from the previous year, but that these factors had been offset by increased contributions from other societies. It was noted that the RSNZ Wellington Branch will in future no longer have Auditor's Reports but will instead have Reviewer's Reports.

5. Election of New Officers

The following list of nominated candidates was presented.

President:	George Jones
Vice Presidents:	Grant Williams; Colin Bassett
Secretary:	David Lillis
Assistant to the Secretary:	Phillip Alve
Treasurer:	Graeme Claridge
Newletter Editor:	Bart Provo
Reviewer:	Otto Bauer
Branches Representative:	Bruce Miller
Committee:	Mike Arnold; Helen Hughes; Suzi Penny
Astronomy:	Mike Clear
Archaeology:	Pat Stodart
Chemistry:	Graeme Murray

Biology:	Colin Bassett
Geology:	Warren Dickinson
Geophysics:	Mark Chadwick
Physics:	Grant Williams
Technology:	Bart Provo
Science Fair:	Phillip Alve
Science Teachers:	Rosemary Hipkins
Meteorology:	Tony Simmers

It was moved and passed that these candidates be accepted as the officers for 2000.

6. General Business

It was noted that some minor changes to the society's by-laws were required by the Royal Society of New Zealand. These changes include qualifying the word 'council' so that in a given context it is clear whether the Branch or RS Council is referred to, the number of council members required to be present in order to constitute a quorum, and several minor editorial changes. These changes were accepted as formal branch by-laws.

The meeting finished at 7.50 pm.

THE HUDSON LECTURE

The Hudson Lecture is Science Wellington's premier annual lecture. It recognises the achievements of the lecturer in the advancement or promotion of science and technology. It honours George Vernon Hudson (1867 - 1946) who was a distinguished amateur naturalist and scientist. An original Fellow of what is now the Royal Society of New Zealand, he was on its Council from 1923-46. Hudson was President of this branch (then the Wellington Philosophical Society) in 1900-01 and 1911-12. A formal obituary and photograph appear in the Transactions and Proceedings of the Royal Society of New Zealand 76: 264-266.

The Hudson Lecture for 2000, *Antarctic glacial history as a means of testing climate models.*

The council of RSNZ Wellington Branch invited Professor Peter Barrett, School of Earth Sciences, Victoria University of Wellington to give the 2000 Hudson

Lecture on Wednesday 26th July. Professor Barrett has guided the Antarctic Research Centre at VUW since its inception in 1971. Prior to this he obtained his advanced degrees at University of Auckland and Ohio State University in the USA. The Antarctic Research Centre has seen around 200 staff and students work in Antarctica with results reported in around 35 theses, with 10 at PhD level, and 210 publications. In 1972-73, Professor Barrett joined the deep sea drilling ship GLOMAR CHALLENGER in the Ross Sea where drill holes revealed that Antarctica had been ice covered for over 25 million years, 10 times longer than the Northern Hemisphere ice sheets, and a significant discovery in earth history. This work inspired a series of multinational drilling projects led by VUW to discover more about the early history of Antarctic glaciation by coring strata deposited beneath the sea floor. Numerous successful drill holes in the 70's and 80's provided the basis and reputation for VUW leadership in the 7 nation \$20 million Cape Roberts Project, whose drilling phase was completed in Dec. 1999.

The Antarctic ice sheet is regarded by most people as a permanent feature of the planet. However, coal seams and fossil trees from the Transantarctic Mountains show that the continent was once much warmer. Sediment cores from the deep sea and the Antarctic margin record a major cooling from the "greenhouse" world of the Cretaceous, 65 million years ago, to around 34 million years ago, when the first ice sheets formed. Increased cooling and the formation of a permanent ice sheet occurred around 15 million years ago following the separation of South America from Antarctica and the formation of the Antarctic circumpolar current.

Over the next two centuries global temperatures are expected to rise by around 4 °C because of increased levels of CO₂. This is about the same as the fall in temperature since the first ice sheets formed 34 million years ago. The lecture considered current efforts to improve documentation of past Antarctic climate history and ice sheet behaviour as a means of checking climate models from which future temperature projections are made.

Warren Dickinson, Geology Dept, VUW

The 36th Wellington Science Fair

Chairman:	<i>Mr Saty Candasamy</i>
Science Fair Consultant:	<i>Mr Phillip Alve</i>
Entries:	<i>Mr Gren Higgs</i>
Programme:	<i>Mr Michael Pallin</i>
Treasurer:	<i>Mr Mac Allcock</i>
Judging Convenor:	<i>Mr David Pegram</i>
Sponsors and Special Prizes:	<i>Mr Robin House</i>
Victoria University Liaison:	<i>Professor Jim Johnson</i>
NIWA Liason	<i>Mrs Sylvia Nichol</i>

The 36th Wellington Science Fair was held from Tuesday 5th September to Saturday 9th September in the Laby Building, School of Physical and Chemical Sciences, Victoria University of Wellington. The 355 entries were set up on Tuesday, judged on Wednesday and open to visitors on Thursday, Friday and Saturday.

The Chief Judge was again Mr Mike Collins, one time Director of the former Physics and Engineering Laboratory and Director of the former Department of Scientific and Industrial Research. He was assisted by a panel of 24 judges.

The speakers at the prizegiving ceremony were Mr Saty Candasamy; Science Fair Chairman; Professor Roy Sharp, Acting Vice Chancellor, VUW; Dr Andrew Laing, Regional Manager NIWA (NIWA being the major sponsors of the Science Fair); Professor Jim Johnston, Head of the School of Physical and Chemical Sciences, VUW; and Mr Mike Collins.

Main prizes

The Grand Prize - the VUW Faculty of Science Prize of \$700 plus one week's work experience with the Faculty of Science - for the best exhibit in the Fair was awarded to Simon Jackson, Form IV, of Hutt Valley High School. His entry *Portable Land-based Positioning System* was featured on the front page of The Dominion, (Wellington's morning paper) Saturday 9th September.

The RSNZ Wellington Branch prize of \$500 was awarded to Matthew Webby, Form III, also of Hutt Valley High School, for his exhibit *Sticky or Not*.

The University of Otago prize of an all expenses paid trip to the *2000 Hands on Science Summer School* was awarded to Amy Holden of Newlands College, for her exhibit *Stuck in the Mud - A Crab's Life*.

First prizes winners in each class were:

Class 1: Form I entrants: Chelsea Leadbetter of Samuel Marsden Collegiate School for her entry: *Time to Dry*.

Class 2: Form II entrants: Nina Pharazyn and Dannielle MacNee of Muritai School, for their entry: *Flammable Deodorant*.

Class 3: Form III entrants: Matthew Webby, Hutt Valley High School, for his entry: *Sticky or Not*.

Class 4: Form IV entrants: Simon Insoll of Heretaunga College for his entry: *Canned Sound*.

Class 5: Forms V, VI, VII entrants: Amy Holden of Newlands College for her entry *Stuck in the Mud - A Crab's Life*.

There were also 44 Special Prizes.

Simon Jackson, who won the Grand Prize (above) was chosen to enter his exhibit in the National Genesis Energy Ltd. New Zealand Science and Technology Fair at Auckland in December 2000.

Any enquires about the Wellington Science Fair should be addressed to:

Phillip Alve, 52 Raroa Rd, Kelburn, Wellington 5, (Ph: 475 9496)

NEWSLETTER

Producing the monthly newsletter and distributing to our members and affiliates has been one of our prime functions, with 671 copies now being printed each month of publication. The RSNZ Wellington Branch Newsletter, *Science in Wellington*, is published eight times each year to cover meetings and notices for the months March through October. Any material relevant to November and December can be included in the October Newsletter.

In 1999 we moved to email submission of copy, format being plain text with identical layout as in the Newsletters. The strict (but simple) format and timing requirements for the Newsletter (deadline 15th of month prior) and Annual Report (deadline 10th September) copy submissions were not met in all cases. The major problem was from those 1 or 2 who tried to submit disorganised rambles or document files - late submission (if before the printing of the hardcopy masters) paled into insignificance by comparison!

George Jones instigated email distribution of the Newsletter in 1999. In 2001 we intend to post printed copies of the Newsletter only to those who do not have access to email. This will significantly reduce costs as postage is the major part. A targeted receipt of interest areas should be the next step to reduce email overload.

The Reprographics Department of the Central Institute of Technology (CIT) continued to provide excellent support in their printing of our newsletters. The deadline for copy submission of the 15th of the month prior to publication should not be further relaxed as events proved this year - machinery breakdown and loss of copies in the mail.

Our thanks to those that provide material for the Newsletter. We appreciate the Institute of Chemistry's distribution of their 190 copies and we thank Phillip Alve for labelling and posting the other 420 copies of the Newsletter.

George Jones' critical proof reading of the copy before printing has continued to be extremely valuable in detecting errors in the Newsletter content.

I wish my successor all the best in the following years.

Bart Provo, 22nd August 2000.

TREASURER'S REPORT

Membership continues to decline slowly and our subscription income also continues to decline. Additional sources of income from affiliations is increasing, but not certain, as we have no recourse, if our affiliates decline to pay our fees, apart from discontinuing services. Our expenses continue to increase, with more meetings: on average we are paying for five meetings a month, instead of four last year, at a cost of nearly \$75 a meeting. Newsletter printing costs are increased, as with additional meetings to be notified, size has increased to eight pages, doubling the printing costs.

However, we have established good reserves, and this year again, have broken even, so that there should not be a need to increase subscriptions. Any increase would in any event be counterproductive as it would cause resignations, and a greater loss in income.

Our contributions to the Royal Society Award Scheme continue.

Graeme Claridge

THANKS

The financial statements required by the constitution are presented on the next two pages. The Council thanks those who have prepared them, and thanks the reviewer for examining them.

The reports of the Sections are given after the financial pages. The Council thanks those who have contributed to the success of this year's activities, especially our speakers and the Section Chairs and their committees who have arranged monthly meetings.

President: *George Jones*

Secretaries: *David Lillis, Phillip Alve.*

FINANCIAL REVIEWER'S REPORT

In my opinion, based on the examination of the books and records of the Royal Society of New Zealand Wellington Branch and of the NIWA Science Fair, the financial statements of the Society for the year ended 31st August 2000, and of the Fair for the year ended 31 March 2000, show the correct operating results for the respective years and the true financial positions at the respective dates.

Dr. Otto Bauer.

ROYAL SOCIETY OF NEW ZEALAND - WELLINGTON BRANCH INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 AUGUST 2000

	EXPENDITURE			INCOME
Meetings		Subscription		
Rent	3269.88	Ordinary		3676.00
Dinner	647.50	Associate		917.00
Lecture Fees	200.00	Family		80.00
Meeting expenses	119.20			4673.00
	4236.58	Award Scheme		206.00
Grants		Interest		
RSNZ sections	250.00	Current account	78.88	
Science fair	300.00	term deposits	390.96	
	550.00			468.84
RSNZ		Dinner takings		660.00
Award Scheme	206.00			
	206.00			
Postage		Affiliation fees		
Newsletter	1091.40	WAS	24.70	
Box rental	120.00	RSNZ	3000.00	
secretarial	40.00	GeoPhysics Soc	245.00	
	1251.40			3269.70
Reimbursments	700.00	Advertising		60.00
Printing				
Annual Report	810.50			
Newsletter	694.14			
	1677.53			
Stationery	88.00			
Sundry				
Petty cash	21.40			
	96.04			
Income less expenditure	606.63			
	9337.54			9337.54

BALANCE SHEET AS AT 31 AUGUST 2000

Liabilities		Assets		
General funds 31-8-99	11237.74	National Bank of NZ		
Add income less expenditure	606.63	Current account	3808.41	
	11844.37	Term deposit	8035.96	
			11844.37	

NIWA WELLINGTON REGIONAL SCIENCE FAIR, 1999

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 MARCH 2000

EXPENDITURE		INCOME	
Prizes	\$ 7955.00	NIWA Sponsorship	\$ 9000.00
Printing	\$ 1575.95	Other Donations	\$ 7790.00
Hire of tables & trestles	\$ 1400.00	Bank Interest	\$ 159.73
Postages, secretarial, social	\$ 2666.62	Term Deposit Interest-National Bank	\$ 234.25
Excess income over expenditure	\$ 3596.43	- H D Gordon Memorial Fund	\$ 10.02
	-----		-----
	\$ 17194.00		\$ 17194.00
	<u> </u>		<u> </u>

BALANCE SHEET AS AT 31 MARCH 2000

LIABILITIES		ASSETS	
General Fund Balance 31/3/99	\$ 11527.76	Bank Account: National Bank	\$ 2640.04
Excess Income over Expenditure	\$ 3596.43	Term Deposit - National Bank	\$ 13000.00
Attributable from H D Gordon		- BNZ Finance	\$ 500.00
Memorial Prize Fund	\$ 29.98		

	\$ 15154.17		
H D Gordon Memorial Prize Fund:			
Balance 31/3/99	\$ 765.85		
Term Deposit Interest	\$ 10.02		

	\$ 775.87		
less Prize	\$ 40.00		

		735.87	
Revenue Received in Advance		250.00	
		-----	-----
	\$ 16140.04		\$ 16140.04
	<u> </u>		<u> </u>

ARCHAEOLOGY SECTION

GENERAL INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31 AUGUST 1999

EXPENDITURE		INCOME	
NZAA Subscription	\$50.00	Interest	\$23.40
Suppers	\$23.40	Excess Expenditure	\$26.60
	\$50.00		\$50.00

BALANCE SHEET AS AT 31 AUGUST 2000

LIABILITIES		ASSETS	
Equipment Fund		Current Account	\$2364.36
Balance as at 31.8.99	\$ 367.59		
General Fund			
Balance as at 31.8.99	\$2023.96		
Transfers from Equipment	\$ 367.59		
Less Excess Expenditure	\$ 26.60		
	\$2364.36	\$ 0.00	\$2390.96

A. Walton Hon. Secretary/Treasurer 31 August 2000

SECTION and AFFILIATE REPORTS for 2000

ARCHAEOLOGY SECTION

Chair: *Pat Stodart* Secretary: *Tony Walton*

The 1999/2000 programme consisted of our usual series of evening meetings. Our speakers and their topics were:

October *Shore, Ship, and Shop (Noah's ark)* by Susan Forbes

March *The basking shark: history and natural history* by Denis Fairfax

June *Bay of Plenty archaeology* by Rick McGovern-Wilson

August *Public Museums and private archaeology* by Pat Stodart.

Members of the Section also helped with the organisation of, and participated in, the New Zealand Archaeological Association annual conference that was held in Wellington on 6-7 May 2000.

PHOENIX ASTRONOMICAL SOCIETY

The Phoenix Astronomical Society Incorporated (TPAS) was formed in December 1997 by 25 enthusiasts whose objective was to build an observatory at a dark sky site that would be available to all those who were interested in pursuing astronomical research. Today, TPAS is an association of amateur and professional astronomers with a membership of over 350, based in Wellington but drawn from throughout New Zealand.

As our membership grew it became necessary to broaden our objectives and activities to provide for the needs of all of our members. To this end we now hold regular monthly meetings in Wellington and Carterton and bi-monthly meetings in Napier. Meetings include a lecture, astronomical news and big screen video presentations. We also hold two observing evenings per month and monthly beginner's sessions in practical astronomy and astrophotography. Our monthly newsletter/journal keeps our members informed of Society events and provides them with astronomical information, articles and discoveries. It is pleasing to note that our membership represents a diversity of people from different cultures, professions and backgrounds. They are both young and old, almost 50% female, and include both professional astronomers and raw beginners. As our numbers continue to grow we will endeavour to provide our

membership with more and better facilities and a diversity of astronomical programs and experiences.

Our first observatory was opened in July 1999 by Georgina Beyer. The observatory is located at a dark sky site 15km SE of Carterton. Situated well away from city and town lights members can explore a magnificent night sky with a variety of excellent telescopes. The observatory houses the 15cm (6") aperture Peter Read refractor (for observing the Sun, Moon and planets), a 25cm (10") Schmidt-Cassegrain (for astrophotography), and a 58cm (23") Dobsonian reflector (for viewing deep space objects such as star clusters, nebulae and galaxies). Other equipment includes a special mounting for astrophotography. The entire observatory project, the raising of funds and construction was undertaken by Society members. The Peter Read refractor was refurbished by Gordon Hudson and the 23 inch telescope was built by Ian Dopson, both Society members. This year we have provided new eye-pieces and filters for the 15cm refractor and 58cm reflector. A new motor has been installed on the 25cm telescope for prime-focus photography and a housing has been built for the astrograph. Cabinets have been installed for atlases and auxiliary equipment. Tests are currently being carried out on a CCD camera that is to be installed on the 25cm Meade. The observatory is now fully functional and observing evenings are very popular. Average attendance at an observing evening is 40 members but we have had as many as 80. Members are encouraged to bring their own telescopes and cameras along to these gatherings.

Our plans to build a research observatory at the dark-sky site are now well in hand. The telescope, a 60cm Cassegrain on a fork mounting, and the observatory will be fully automated. The optical system has been designed by Norman Rumsey. The building of the observatory, the dome of which was originally owned by the U.S. Navy and located at Black Birch, will start early this summer.

In addition to the observatories we plan to build an accommodation unit at the observatory site. This unit will include a kitchen, toilets, showers, bunk-rooms and a lecture/dining room. To date we have raised sufficient funds to commence this project in early 2001.

In January TPAS held "Stardate" at Eskdale, near Napier. Stardate is an annual 3-day event which provides a venue for New Zealand astronomers to

gather for the exchange of ideas, to buy and sell equipment, and to marvel at the night sky through a variety of binoculars and telescopes brought along by participants. Held over 3 days, Stardate includes a program of lectures and workshops combined with social gatherings and observational astronomy. This year our special guest was Steve O'Meara from Hawaii who is an editor for Sky and Telescope. Although the weather wasn't in our favour the event had a full-house with 160 people at the camp.

In June TPAS held the "Winter Astocamp". Like Stardate, this was a 3-day event with a program of lectures, workshops, observing and socialising. The programme included a number of excellent New Zealand speakers but we were also privileged to have Professor John Percy from the University of Toronto. Professor John Percy is a former President of the International Astronomical Union's Commission 46 – Teaching of Astronomy. He has a strong involvement with the American Association of Variable Star Observers and the Ontario Science Centre. The event, which attracted over 100 registrations, included a "Teachers Seminar" and ended with a banquet Winter Solstice Dinner and included live entertainment with music provided by Jim Walmsley and Middle Eastern dancing by Zainuba, a belly-dance troupe.

In 1999 TPAS published Almanac 2000. Work on Almanac 2001 is in progress and will be going to print in October. The Almanac contains astronomical information for the year 2001 in calendar form including dates and times of astronomical phenomena, rise and set times for the sun, moon and planets, phases of the Moon, star charts, moon chart, star lore and magnificent colour photographs of celestial wonders taken by New Zealand astronomers.

The success of the Phoenix Astronomical Society is to be found in the enthusiasm and support of its members. I would like to give special thanks to Council members Gordon Hudson (Vice President), Lesley Hall (Treasurer), Ian Cooper (General Secretary, Observing Programs), Kay Leather (Secretary), Antony Gomez (Membership and Web Page), Jennifer Picking (Wairarapa Rep), Cameron Jack (Computers and Observing Programs), Darrel Ramsey (Observatory Maintenance) and Charlotte Hird (Editor). Finally, I would like to thank all those people who have made financial contributions to the observatory fund and those hardy souls who have worked so hard at our working bees.

Richard Hall, President, Phoenix Astronomical Society.

WELLINGTON ASTRONOMICAL SOCIETY

In February the Society hosted the highly successful "Space Time 2000" International Conference. There was an impressive array of New Zealand and overseas speakers including Heather Couper and Nigel Henbest, and Bob Mitchell of NASA. The participants included a wide representation of astronomers from all parts of New Zealand and a number from overseas. The Society expresses its thanks to the Organising Committee of Gary Wilmshurst, Marilyn Head and John Field and also to Ed Budding for their efforts and contributions and for a job well done.

Regular activities have been the monthly meetings, and weekly star parties at the Pauatahanui Observatory. A succession of interesting speakers on widely-ranging astronomical topics has drawn good attendance from members to the monthly meetings. Other activities have included occultation observations, observing the lunar eclipse, and public star parties at Newtown and Pinehaven. These public star parties are organised in conjunction with local organisations to give residents and their families an introduction to astronomy. A number of members provide telescopes for the public to use under their guidance, and talks are given on astronomical topics.

The Society is assisting with the restoration of the Gifford Observatory in Wellington College grounds. It is hoped to have the Observatory operating by about the end of the year.

During the year the radio telescope at CIT became operable and is now regularly used for observations. Two leading members of the Society, Tony Dodson and Ed Budding, are Trustees of the New Zealand Radio Science Group which operates the telescope.

Bill Draper Acting President

BIOLOGY SECTION

Chairperson/Secretary: Colin Bassett

Committee: Janet Grieve, Rod Hitchmough, Kathleen Logan, Liz Prendergast, Christine Reed, Mike Rudge, Mary McEwen, Barry Wards, Ian West.

In the 1999/2000 programme our speakers and their topics were:

September 1999. Dr Michael Berridge (Malaghan Institute of Medical Research). *Application of Genetic Modification Technologies to Medical Research.* Attendance 33.

October 1999: Alan Saunders (Department of Conservation). *Ecological Restoration: A New Approach to Conservation Management in New Zealand.* Attendance 22.

March 2000: Dr Peter Kettle (Ministry of Agriculture and Forestry). *Protecting New Zealand From Alien Invaders.* Attendance 35.

April: Dr Christine Egan (A.J. Park & Son) and Dr David Heath (Agresearch). *Patenting Gene Discoveries.* Attendance: 33.

May: Dr Doug Eckery (Agresearch) *Biological Control of Possums.* Attendance: 31

June: Dr Alan Cooper (University of Oxford, U.K.) *Ancient DNA Studies of Permafrost Mammals.* Attendance: 70.
This was also listed as a General Meeting.

July: Dr Ben Bell (Victoria University of Wellington) *Global Amphibian Declines and the Status of New Zealand Frog Populations.* Attendance 20.

August: Dr Kevin Stafford and Dr David Mellor (Massey University and the Australian & New Zealand Council for the Care of Animals in Research & Teaching [ANZCCART]) *Is a "Gold Standard" Strategy for Enhancing Animal Welfare Better Than One Which Proceeds by "Incremental Improvement"?* Attendance 13.

General Meeting: See June above.

NZ INSTITUTE of CHEMISTRY WELLINGTON BRANCH

The following meetings were held, up to August 2000:

- Tour of the Resene Paints factory,
- *Hazardous Substances and the HSNO Act*, Victoria Stevens, ERMA,
- *Towards less toxic cancer treatment*. This was a Royal Society of Chemistry (UK) lecture given by Prof. Bill Benny, Auckland University,
- *The Chemistry of brewing and beer tasting*, hosted by the Copperhead Cafe and Bar, Willis St, Wellington,
- The Mellor Lecture presented by Dr Sally Brooker, Otago University: *Macrocycles, Ladders and Grids: Potential Nanocomponents*,
- *How to make Money out of Chemistry*, Dr Barry Bent. Dent Global Ltd., Lower Hutt,
- *Call my Bluff-a wine tasting competition*, hosted by a panel comprising Christine Comerford, Raymond Chan and David Weatherburn,
- Australasian lecture of the Royal Society of Chemistry (UK) given by Prof Lindoy, Sydney University: *New Supramolecules incorporating Macrocycles as Structural Elements*,
- Volta Bicentennial Celebration - *Millennial Musings*, Dr Jeffery Tallon, IRL.

In addition Chemistry exams and quizzes as well as titration competitions were conducted for Secondary School students.

GEOLOGY SECTION and GEOLOGICAL SOCIETY of NZ

President: James Crampton

Secretary: Aasha Pancha/Ursula Cochran

Meetings and Activities 1999-2000.

Monthly meetings were held in October, November and from March until September. The summer is, of course, reserved for the all important field work that fuels future talks. Meetings were, on the whole, well attended.

The Hochstetter Lecture was presented by Professor Peter Ballance of Auckland University. For the first time in NZ political history(?), we have an MP who trained as a geologist, namely Ian Ewen-Street (Green Party list) and in August he gave an entertaining discourse about his journey from geology to green politics. Sadly, due to an unfortunate clash with two other talks that

night, the turnout was disappointing. The Hector Day field trip, held in March, included a BBQ at Turakirae Head followed by a tour of the raised beach sequences in a warm northwesterly gale, led by Anne Hinton of the Institute of Geological and Nuclear Sciences (IGNS). The BBQ was very well provisioned by Martin Crundwell (IGNS).

1999

October 7th Beanland-Thornley Prize Night. Winner: Ed Butler, *Holocene deglacial history from raised beaches, SW Ross Sea* Attendance 55.

November 9th *The Awatere Fault, Marlborough: observations between 1848 and 1889 and two world firsts*, Rodney Grapes, Victoria University of Wellington. Attendance 53.

2000

March 2nd *Modelling hydrocarbon migration: the art of predicting what's already happened!*, Dave Darby, (IGNS). Attendance 40.

March 12th: Hector Day field trip, BBQ at Turakirae Head and field trip to raised beaches, Anne Hinton (IGNS). Attendance 18.

April 6th *The Great South Basin study: last in an illustrious line*, Richard Cook, Rupert Sutherland, Simon Nathan, Pat Suggate (all of IGNS). Attendance 72.

May 4th *The rise and fall of the Apennines: relations between subduction and late-orogenic extension*, Francesca Ghisetti (Universita di Catania, Italy). Attendance 36.

June 1st *Applications of geodynamics to the study of crustal deformation*, Susan Ellis (IGNS). Attendance 35.

July 19th Hochstetter Lecture, *Cenozoic development of the southwest Pacific - the evolution of a plate boundary*, Peter Ballance (University of Auckland). Attendance 83.

August 10th *Saudi Arabia, water and politics*, Ian Ewen-Street (MP). Attendance 20.

September 7th *Paleoseismic studies along the North Anatolian Fault Zone, Turkey, in the aftermath of the 1999 Izmit and Duzce earthquakes.*, Robert Langridge (IGNS). Attendance 30.

GEOPHYSICS SECTION

President: Mark Chadwick

Monthly meetings were held from April to October with a wide range of topics from South Island crustal structure to tides and storm surges. The meetings were overall well attended.

2000 Meetings:

April 13: *Transect 3 of the SIGHT project: Crustal structure from Canterbury to Southland.*, Nikki Godfrey, University of Southern California.

May 18: *A 50m Resolution Digital Elevation Model of New Zealand ? Geophysical Applications*, Rob Davies, Victoria University of Wellington.

June 15: *Seismic Attenuation Modelling: Raukumara Peninsula*, Mark Chadwick, Institute of Geological & Nuclear Sciences.

September 21: *Tides and Storm Surges: Prognostications of Coastal Flooding*, Derek Goring, NIWA, Christchurch.

October 19: *High fluid pressure beneath the Southern Alps - geophysical evidence and seismological consequences*, the SIGHT working group, presented by Tim Stern, Victoria University of Wellington.

Mark Chadwick, President.

Joint Committee of the RSNZ Wellington Branch Physics Section and the Wellington Branch of the NZIP

The joint committee has continued to provide talks to our members and the public. We have also assisted in the Wellington Science Fair by providing two prizes. The years talk programme is below,

18 April: Dr. Mark Poletti, IRL.,

Electronic Control of Room Acoustics and the VRA System.

24 May: Stephan Rupp, IRL.,

Max Planck (1858 - 1947) A Brief History of his Life.

20 June: Prof. Tom Barnes, University of Auckland, *Feedback Interferometry, it's Application to Automatic Aberration Correction.*

18 July: Professor Michael Kelly FRS, FREng, University of Surrey,
RUTHERFORD LECTURE

The Information Technology Revolution: What will alter its progress?

1 August: Dr. Simon Brown, Canterbury University, *Nanotechnology: Prospects for a New Generation of Electronic Devices.*

15 August: Prof. Crispin Gardner, VUW,

Bose-Einstein Condensates and Atom Lasers.

19 September: David Bloor,

Molecular Electronics: Science fact or science fiction?

Dr. G. V. M. Williams,

Chairperson, Joint Committee.

WELLINGTON SCIENCE TEACHERS' ASSOCIATION

[Not received at time of printing]

OBITUARY

PETER HENRY JOHN CASTLE

The School of Biological Sciences lost one of its most distinguished staff members when Peter Castle passed away on the 21st December, 1999, following a period of illness. He was born on February 13, 1934 in Timaru and attended Timaru Boys High School before coming to Wellington to further his education at what was then Victoria College, but was soon to become the Victoria University of Wellington. He completed his BSc in Zoology in 1955, and was awarded a Master of Science degree with first class honours in 1958, and a PhD in 1964.

In those days the Zoology Department of the College was presided over by Professor L R Richardson, who had recently changed his research field from parasitology to marine biology, and had gathered around him staff with similar interests. Peter joined the growing school of marine biologists by developing an interest in eel biology and taxonomy, the subject of his Masters and PhD theses, and one that remained the focus of his research for the remainder of his life. His concentrated efforts yielded 75 scientific publications as well as a number of more popular articles, recognition of which culminated in the award of a DSc in 1998.

For most of his working life, excepting visiting appointments overseas, he was a member of the staff of the Zoology Department of Victoria University, which was later merged with other biological departments to become the School of Biological Sciences. He was appointed as a Junior Lecturer in 1958, and was a Lecturer and Senior Lecturer 1961-77 before being appointed Reader (Associate Professor) in Zoology in 1978. Positions of responsibility included a term as Chairman of the Zoology Department.

His work was internationally recognised. He held two research fellowships at the JLB Smith Institute of Ichthyology at Rhodes University, South Africa, a visiting fellowship at the Australian Museum and a Fulbright travelling fellowship to the USA. He belonged to the American Society of Ichthyologists and Herpetologists and the American Society of Systematic Biologists, and corresponded with a network of colleagues that spanned the USA, South Africa, Australia and France. In New Zealand he was a member of the RSNZ, the Systematics Association of New Zealand, and the NZ Marine Sciences Association. He had strong links with the ichthyologists at the Dominion Museum (later the natural history unit at Te Papa).

Peter was a conscientious teacher, and a number of his graduate students today occupy senior research or management positions. A modest and straightforward person his style tended towards the conservative, and although he deplored change imposed for its own sake, he shared in many of the changes that dominated teaching and research in the last decade of his life. He stood for quality in his work, was meticulous in his dealings with people and was intensely loyal to the institute he worked for and to those who surrounded him. He will be remembered with affection by friends, colleagues and students alike. He is survived by his wife Marlene and their two children, Kristen and Andrew.

OBITUARY

PEG, LADY FLEMING

Nee Margaret Alison Chambers

5 November 1917 - 26 February 2000

3 daughters.

Peg Fleming's association with the Wellington Branch of the Royal Society began in the early 1940s when she came from Auckland to live in Wellington with Charles, as a young married woman.

Peg was born and brought up in Remuera, Auckland, the youngest of four children of Stanley George and Margaret Mary Chambers. She was educated at Diocesan High School where she became first Games Captain, then Head Girl. Her mother persuaded her to go to university and she began a BA including Biology in 1936. She first met Charles Fleming on a Field Club trip to the Noises Islands and they soon became the best of friends. Peg changed to a science degree and she and Charles both graduated BSc in 1940. Peg helped Charles with fieldwork and typing for his MSc during 1940 and they were married in 1941.

She began married life in a derelict house in Ormondville where Charles and Dr Arnold Lillie worked on the Geological Survey's Dannevirke Subdivision during summer of 1940/41. In 1942 Charles was on the top-secret Cape Expedition at the Auckland Islands and Peg returned to live with her parents, where her first daughter, Robin was born. The Flemings had two more daughters, Mary born in 1945 and Jean born in 1952.

The family lived in Wellington, at first in Karori and then Wadestown. Peg moved house alone in 1948 while Charles was in Britain attending his first International Geological Congress, where he missed Peg so much that he swore he would never again leave her for more than a month. She later accompanied him to science congresses in various parts of the world including Japan in 1966, Papua New Guinea in 1970, Khabarovsk, Siberia in 1979.

Peg played a major role in Charles' highly successful scientific career. He could not have achieved all that he did without Peg. She ran the household superbly, entertained numerous scientists with grace and apparent ease and made the Wadestown house, Balivean, a home away from home to visiting scientists and Fellows of the Royal Society of New Zealand. She was a major participant in Charles' cicada collecting trips.

Peg was an active member of the Wellington Federation of University Women (FUW). With her sister Cecily Hammond she helped establish the hiring of academic dress for graduation ceremonies. She belonged to the New Zealand History Group and became an amateur historian; she helped found a "Maori Pakeha Group" in the 1950s; and with her sister ran a daytime group for older members. The study group she started at Waikanae after she retired is now named the Peg Fleming Group in her memory. The Wellington Branch of the Federation of University Women recognised her contribution formally by making her an Honorary Life Member.

Peg was a valued member of the Regional Committee of the New Zealand Historic Places Trust. She worked as a volunteer at Antrim House; helped with research about the Bolton Street Cemetery; worked on the history of Pauatahanui and the Waikanae district; and organised lectures and field trips. She arranged visits to Marae and led two weekend trips on the Whanganui River, staying on the Matahiwi Marae. The Historic Places Trust acknowledged Peg's work by presenting her with a Certificate of Meritorious Service.

Peg was also a keen member of the Ornithological Society and worked at various times for Plunket, the YWCA and the Katherine Mansfield Birthplace Society.

Mary McEwen (nee Fleming) July 2000.

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Mr W M Arnold	Prof R G Downey	Mr David Lillis
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