

# THE ANZAAS Mercury

ANZAAS: Communicating Science to the Public

Issue No. 2, March 1999

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## Editor's Edict

We proudly present the second issue of the ANZAAS Mercury newsletter for ANZAAS members. We have a number of special features; Graham Mitchell discusses how science can improve wealth and employment creation in the **ANZAAS Debate**, Paul Adam comments on the different attitudes to science in different countries in **Game SET and Match?**, and we have special reports on the CSIRO, and on a speech by Our Nobel Prize winner Peter Doherty. We also have our regular articles, **Adam's Airing**, **News From The Divisions**, and **Book Bite**. This issue also carries a notice for the ANZAAS AGM, to be held on April 28. We would like to hear from you, please send any general comments on ANZAAS Mercury to the address at the end of this newsletter. -

[Duncan Rouch](#)

## **Adam's Airing**

Comment From The Chair By Paul ADAM

### **Australian Science**

The development of modern Australia was driven by the application of science. The special nature of many aspects of the Australian environment has meant that while Australian scientists have stayed abreast of developments in world science much of the research required to solve problems has necessarily been uniquely Australian. We have a long history of scientific excellence and strong public sector support for science (although perhaps because of the high profile of public science the involvement of industry in research and development has been less impressive).

### **ANZAAS Future?**

Times, however, have changed. Public and political support for science is waning and the benefits of science have been challenged. At the same time there are public calls for the interpretation of scientific data, chiefly related to issues where there is a perception of risk to the public. The infrastructure necessary for the conduct of research is in decline and many scientists feel frustrated by loss of opportunities and stifled by ever increasing bureaucracy. How does this affect ANZAAS? The Association has a role as advocate for science and as an interpreter of science to the public. Discipline based societies have responsibilities in particular areas of science but the advantage of ANZAAS is that we are interdisciplinary. We can present a broad view, without being perceived as biased by a narrow approach.

### **Active ANZAAS**

I would like to see ANZAAS being much more active in presenting view points to government and the public. This could be achieved by way of submissions or through preparing statements.

Some might see this as being inappropriate - that as scientists we should not be party to activities which inevitably have political connotations. My view is that if bodies like ANZAAS are not advocates for science then others will not do the job for us. Recently the Royal Society in Britain has taken a much higher profile, issuing statements and position papers on such issues as genetic engineering and food, research on the use of cannabis in medicine, and the need to retain University technical support staff. ANZAAS is not the Royal Society but we do embody a wealth and diversity of scientific experience. What we can say, collectively, will have credibility and we should make our voice heard.

We will have to guard against being taken for a ride on hobby horses, but there are many broad issues where we could make constructive input, and where ANZAAS could be used, by the membership, to advance the objects of the Association to the advantage of both science and society. In developing statements the task cannot be left to Council alone - we need the advice, assistance and experience of the whole membership. I would welcome any comments and suggestions for issues that could be addressed (e-mail: [p.adam@unsw.edu.au](mailto:p.adam@unsw.edu.au), Tel: (W) 02 9385 2076, (H) 02 9314 2453, FAX: 02 9385 1635)

## The ANZAAS Debate:

### Science Can Improve Wealth and Job Creation

*ANZAAS Mercury proudly provides a venue for debate of general issues relevant to the aims of the Association. **Graham MITCHELL**, Foursight Associates Pty Ltd, Melbourne, and Principal Adviser Science & Regional Industry Policy, Government of Victoria, discusses how science and technology can better improve social outcomes.*

In response to various pressures and imperatives, the Science & Technology (S&T) landscape in Australia is changing (see Table). One notable change over the past couple of years has been in the level of understanding across the S&T spectrum of the components of an "innovation culture" and the constraints to commercialisation of Australia's R&D endeavours. The numbers

of conferences, workshops and symposia on this general topic area are expanding rapidly with some already calling for an end to the navel gazing and diagnosis and rapid move to therapy, radical if necessary!

There is overall agreement that we must better capture the full force of national endeavours in S&T and generate both employment and wealth through promotion of technology-based enterprises as well as renewal of existing industry in Australia.

## **Managing Innovation**

As we approach a genuine knowledge-based economy, we are a long way from getting the settings right for all the ingredients of innovation - defined by one commentator along the lines of " - the managed and imaginative commercialisation of ideas, discoveries, initiatives and inventions throughout society - ". We have recently seen clear evidence of more researchers in publicly-funded research organisations "facing the market as well as Government" and adopting a portfolio approach to fund raising (see Mitchell and Nossal, 1999, Int. J. Parasitol, in press). Another change has been in the clear recognition of differences in the *modus operandi* and primary objectives of researchers and organisations across the S&T spectrum from hypothesis-based, curiosity-driven research at one end through targeted, problem-solving research, to product R & D at the other.

## **Getting The Best From Basic Science**

In the drive towards research for practical ends (see Table) it is well to remember certain aspects of research in higher education institutions. As David Penington has stated in relation to the Australian Research Council, these realities require regular reinforcement:

- publicly-funded basic research provides the "feed-stock" for applied research and is the appropriate environment for research training;
- strict market force considerations are inappropriate if translation of knowledge to economic benefit takes 10-15 years
- regular peer review of publicly-funded research is essential although long term program and block grant mechanisms must be used to encourage originality and militate against "fashion" in research;

- the quality of research must be the prime consideration in allocation of competitive funds;
- diversity of private and public funding sources is required to promote pluralism and to obviate the heavy hand of centralised control (see also Stocker, J. "Priority Matters", 1998: <http://www.dist.gov.au/science/cs/>).

## The Science and Technology Mix

The S&T scene in Australia at the present time is a rich landscape requiring careful management and nurturing of Universities, Research Institutes, CSIRO, DSTO, AIMS and other Commonwealth Government funded organisations, the CRCs, State Government Departments, Hospitals and both large and small Industry. Its diversity is its strength provided the issue of critical mass is kept in mind with opportunities grasped for co-location and establishment of networks - genuine long-term collaborative and productive networks and not just an administrative or fund-raising tool.

One of our real persistent problems is a lack of mobility of individuals across the S&T spectrum - scientists moving into the financial sector, industry or Government and back again. The academia-industry interface has always been difficult in Australia. As we have stated recently (Mitchell and Nossal, loc.cit.):-

"It has to be remembered that there are regrettably some early suspicions in many such encounters in the Australian scene with questions in each camp around: " - is this another case of a researcher wanting to simply take the money and run - " with some CEOs believing that one of the most dangerous places on earth is to stand between a scientist and a bucket of money! Or alternatively: " - does this company have anyone remotely capable of appreciating science at all let alone my brilliant discovery that is potentially worth billions -". The overstatements are acknowledged! The point is that there will be considerable baggage deriving from past negative experiences on both sides. Moreover, the understanding of (and mutual respect for) the way science is done at either end of the S&T spectrum has historically been lacking. This is a major reason for the discontinuity in Australia that is to our national detriment and, besides preventing easy movement of scientists back and forth between academia and industry, impedes the development of both

intellectual property (IP) and products, and thus national wealth, and thus tax dollars, and thus more publicly-funded research, etc."

## Victoria's Strategy on S&T Policy

In an endeavour to strengthen and expand Victoria's capabilities in Science, Engineering and Technology (SET), the Victorian Government under the umbrella of a policy statement - "Creating our Future" - established a SET Task Force and a Science Policy Unit within the Department of State Development. During 1998, the SET Task Force identified seven key elements of a strategy to promote the growth of technology-based enterprises in Australia. These elements have direct impact across the S&T spectrum from concept and knowledge generation at the front end to the development of new products and services at the other. The document highlights the (i) tax-based impediments to (ii) venture capital investments in R&D and the high growth small to medium sized enterprises (SMEs); an aggressive approach is clearly required to (iii) encouragement of business expenditure on R&D (BERD) and, (iv) the building of critical mass including infrastructure and technology incubators; more initiatives are required to (v) build the SET skills base and increase our competitiveness in attracting the brightest and best into SET; the need for novel approaches to (vi) exploitation of IP from publicly-funded institutions (and non-core IP from the corporate sector) and (vii) a stronger emphasis on market pull and determination of customer needs in terms of new Australian technology products.

There seems to be universal agreement that the major impedance to the establishment and nurturing of technology-intensive start-up companies is the hostile capital gains tax environment in this country. It is hoped that the Ralph Review will address this component of the S&T spectrum as well as the various issues that need to be addressed at the "big end of town" - i.e. established, tax paying businesses. Of course, there is no need to invent a unique Australian solution to many of these issues - unabashed plagiarism of systems proven to work in other jurisdictions should do just nicely!

### ***Table: Some changes in the Australian S&T scene***

- Continuation of the pendulum swing towards "research for practical ends"
- Government initiatives
  - R&D Start -CRC Program reinforced
  - IIF Scheme -Tax concession to 125%
  - Innovation Summit -State Govt initiatives
  - Replacement of factor (f) scheme with PIIP
- Increased cost of research, and hence
  - Outsourcing of industry R&D
  - Growth of CROs, M&As
  - Portfolio approach to fund raising
  - Networks and co-location incentives
- Reduced status of S&T as a career choice (especially "hard-edged sciences")
- Continuing impact of societal expectations in regard to ethics, accountability etc.
- Emergence of the science communicator
- Increased understanding of the innovation culture and constraints to commercialisation
- Continuing debate on the positioning of CSIRO in the S&T spectrum
- Impact of competition policy
  - "user pays, provider charges"
  - purchaser-provider model in applied research.
- Decreased overall public sector expenditure for research in higher education and hospital sectors.

### **Entrepreneurship**

Having also been charged by the editor to identify the substantive challenges ahead in regard to entrepreneurship, I would nominate the following, not in any particular order of priority (other than the tax issue):

- changes in the hostile investment environment in Australia particularly regarding capital gains tax;
- increasing the where-with-all to generate and secure IP in our publicly-funded research institutions;
- increasing the mobility of IP from our publicly-funded institutions by increasing opportunities for inventors to, in essence, own and exploit their IP;
- facilitating the environment for growth of technology-based enterprises and the nurturing of entrepreneurs (e.g. establishment of technology incubators);
- accessing good advice and assembling a stable management team.
- advocacy with respect to the importance, rewards and excitement of S&T in the political arena and amongst our youth.

Please join the debate, by sending your response to Prof. Graham Johnston:  
Email- [grahamj@mail.usyd.edu.au](mailto:grahamj@mail.usyd.edu.au); Post- Honorary Editor ANZAAS,  
Department of Pharmacology, The University of Sydney, NSW 2006.  
Responses will be posted on the ANZAAS web site.

## The XIX Pacific Science Congress

The XIX Pacific Science Congress to be held at the University of New South Wales from 4-9 July will be a major international event. We are planning to hold a Youth ANZAAS in conjunction with the Congress, and also to hold a number of the Association's named lectures (For details see <http://www.icmsaust.com.au/PacificScience/>).

Finally, Divisions will be arranging their own programs of events this year. If you have ideas for activities then please contact your Division.

## Special Reports

### CSIRO Future

By Duncan ROUCH

If we wish to support science, we should be clear what science in Australia is all about. Here your editor reports on one of the main players on the scene, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and how it is facing the future.

The CSIRO is Australia's largest single organisation for scientific research, having an 8.1% share of Commonwealth Government funding for research and development, while our universities all together account for just 3.3-fold more, at 27% share. It also employs close to 3000 scientists who's work covers a broad range of subjects which are grouped into five sectors, agriculture, minerals and energy, manufacturing, communications and construction, environment and natural resources.

The best work of the CSIRO is highlighted through its annual medal awards, and last December at Monash University four projects were recognised, representing three of the five sectors. The winning subjects were;

- Substantially improved knowledge of timber structural properties,
- Development of the Parkes 21-cm multi-beam radioastronomy system,
- Developments in hard-x-ray phase contrast imaging,
- Production of innovative new wool fibres with the OPTIM process.

Three of the four awards (2,3,4) were won by teams of at least four scientists, emphasising the key role of multi-disciplinary teams in the work of CSIRO. Indeed the spokesperson for the wool team, Dr David Phillips, claimed his whole division contributed to the result. The majority of the awards (1,3,4) were for work with direct application in industry, in line with the applied focus of this organisation.

After suffering a period of reducing budgets and major restructuring the organisation is settling into a leaner and more efficient mode. CSIRO Chair, Mr Charles Allen, in his speech at the medal awards, said the CSIRO is now establishing itself in the pro-active role of providing strategic research in the national interest, coupled to product development to meet the needs of Australian industries. It would also continue to perform research for the greater public good, such as in astronomy. Furthermore, the CSIRO was not to be a reactionary service provider that responded only to immediate needs. A key area of CSIRO's interactions with industry would continue to be with national and Australian-based multinational companies, Mr Allen continued. Substantial savings made through increased efficiency were being redirected to support a number of blue-sky projects, such as work on a hybrid solar power-ceramic fuel cell system, with the aim of significantly increasing the efficiency of relatively environment-safe power generation. Mr Allen emphasised that while innovative research, such as the hybrid power project, was expected to provide progress, important advances would still come from further development of existing technologies, with both economic and environmental benefits for Australia.

## Doherty and the Press

By Duncan ROUCH

The vagaries of newspaper reporting about science was the main topic for Nobel Prize winner Professor Peter Doherty in his whimsical speech at the CSIRO medal awards in December. In his travels around Australia in 1998 to support scientific research, as Australian of the year, he was involved in a range of events aimed purely to publicise science. Often, however, Doherty said, a peripheral comment of his to journalists at such events was used to support an almost completely different story in print. The press story indeed was usually a forced fit to a high-profile (non-scientific) topic of the day. For example, an aside he made at a school science award in Queensland was used by a local newspaper to produce a story about the politician Pauline Hanson. While tabloid newspapers were responsible for most of the story hijacking, the Australian newspaper was also guilty in one case.

Doherty also took part in attempts to publicise the centenary of the birth of another Australian Nobel Prize-winning scientist, Howard Florey (1998), in Adelaide. In this case it proved difficult to gain any attention from the media, despite the backing of both the University and the City of Adelaide. He hoped that publicising the centenary of the birth of Macfarlane Burnet, this year, will be more successful.

## Game, SET and Match?

By Paul ADAM

One of the major events on the 1999 calendar is the World Conference on Science organised by UNESCO/ICSU to be held in Budapest.

As part of the preparations for this meeting a conference on "Priorities for Science in the 21<sup>st</sup> Century for the Asia-Pacific Region" was held in Sydney in December 1998. The outcomes of the conference are recorded in the Sydney Communique, (available at the IFAAST web page - [www.science.org.au/ifaast/](http://www.science.org.au/ifaast/) -under "miscellany").

One recommendation was that "science" should be interpreted as SET (Science, Engineering and Technology). Other recommendations deal with the importance of communicating the processes of SET and the role of the mass media, the role of UNESCO as the lead science agency in the UN, the promotion of scientific literacy and awareness, social responsibility of scientists and ethical standards for scientists, and the role of SET in a sustainable and equitable future.

The conference provided an opportunity for scientists from around the Pacific to get together (another opportunity will be provided in July 1999 at the XIX Pacific Science Congress).

As an attendee I found it fascinating to reflect upon the differences between countries in their attitudes to science. Every country is different but, perhaps simplistically, I would suggest that countries fell into three groups.

In countries with a long tradition of western science (like Australia) a major problem is the growing scepticism of the populace towards science. Despite the fact that SET underlies and makes possible almost every aspect of modern society there is profound suspicion about the direction that science might lead society in the near future. Science is rarely a career of choice for the brightest and more able students, but amongst society at large non-science such as astrology and creationism is perceived by many as being scientifically based. In the second group are the emerging economies of south east Asia (for whom the present economic difficulties may only be a blip on the way to greater prosperity). SET is seen as a major driving force for advancement and scientists and technologists are given high status. The third group are represented by the microstates of the Pacific. These are countries with a rich cultural heritage and a long tradition of utilising natural resources, but very little history of involvement with western science. Such countries do not have the capacity, individually, to develop a major research institution, and research will need to be addressed collaboratively or through strategic partnerships. However, they recognise the need to improve scientific literacy and to utilise science in the development of sustainable environmental management. The enthusiasm for science was refreshing, but the problems of providing even basic scientific education are immense. A challenge for

Australia, and for bodies within Australia like ANZAAS, is to offer practical support for the promotion of science and scientific education in the Pacific region.

Having suggested that public appreciation of science and scientists in Australia is not high it was a pleasant surprise to find the New Year bringing evidence to the contrary - with a scientist becoming Young Australian of the Year (Dr Bryan Gaensler), and science, across a wide range of disciplines, being well represented in the Australia Day Honours List. Congratulations to all those honoured.

While recognition of the achievements of Australian science is welcome the prospects for the future are less pleasing. Government support for basic research (through ARC) is falling, industrial R&D expenditure has dropped in recent years. Many Universities are experiencing difficulties in attracting students, and career prospects for graduates are limited. As a nation we need to regain the enthusiasm for science and its potential to enrich society which was a mark of earlier ages and which is still evident in many of our near neighbours.

## News from The Divisions

### NSW

By Bob VICKERY

#### **ANZAAS members honoured in Australia Day awards**

Two members of the ANZAAS(NSW) committee were given the award of Member in the General Division of the Order of Australia (AM) in the recent Australia Day Honours List.

Associate Professor Diana Temple received her award for services to medical and scientific research, promoting the role of women in science, and promoting an understanding of science by the general public. She did most of her university studies at the University of Sydney and did a PhD in the

Department of Organic Chemistry, graduating in 1959. She then joined the staff of the Department of Pharmacology where she is now an Honorary Research Associate. Dr Temple joined ANZAAS in the 60's, served as General Secretary for 7 years in the 80's and was made a Fellow of ANZAAS in 1987. She has served two periods on the national council. She has tirelessly promoted the roles of women in science especially through the Women In Science Enquiry Network (WISENET).

Dr Gerhart Lowenthal was given the award for services to radiation metrology and the public understanding of science. He took his degrees from Melbourne University and worked for many years at the Australian Atomic Energy Commission, now Australian Nuclear Science and Technology Organisation, and is now a Visiting Fellow in the School of Mechanical and Manufacturing Engineering at the University of New South Wales. He joined ANZAAS in 1962 and served in many capacities on the NSW committee. He is very active in promoting public meetings to discuss science and has edited many of the resulting books. He has lectured, for many years, for the Workers Education Association of NSW on scientific topics.

## TASMANIA

By Pat Quilty

### **Proceedings of the IYO meeting**

Following the ANZAAS organised International Year of the Ocean meeting in September/October 1998, the Tasmanian Division is working with the Royal Society of Tasmania to publish a volume of the papers as part of the Proceedings of the Royal Society of Tasmania. Several papers are in hand and the editorial process is underway. It is envisaged that publication will be late in 1999.

## **Youth ANZAAS**

It has been heartening to the Tasmanian Division and probably to ANZAAS generally, to note the good feedback from those who attended the Youth ANZAAS sessions held in Hobart. Any comments and suggestions that members hear can be passed to me for transmission to the local organising committee and made available for those planning future Youth ANZAASes (is this a new word?).

Full marks to the Royal Society of New Zealand for generously providing, at short notice, travel funding for the attendance of three students - one each from Auckland, Palmerston North and Wellington, thereby demonstrating in a tangible way the Society's link with ANZAAS. Australian student travel costs were covered by a grant from DEETYA for the following contingents: A.C.T. 5, N.S.W. 8, Northern Territory 4 (Alice Springs 2, Darwin 2), Queensland 2, South Australia 5, Tasmania 11, Victoria 6.

## **Science Talent Search Competition**

The Tasmanian Division, over the past decade, has supported this annual Tasmanian schools science competition by way of donations for some prizes. At the awards ceremony, to be held this year in Launceston on 2 May, ANZAAS Prizes will be given for the following:

- Junior (Years 7-8) - for student(s) showing outstanding achievement in the research projects category (up to \$200)
- Intermediate (Years 9-10) - best research investigation project (\$100)
- Best Teacher - awarded to the teacher judged most successful in encouraging numbers of quality entries in the research section at the Intermediate level (\$100).

These awards are provided from within the internal funds of the Tasmanian Division.

## **Science Competition Travel Bursaries**

The Tasmanian Division has been a contributing foundation member of a consortium of scientific bodies comprising professional associations and the Royal Society of Tasmania, formed to provide a travel bursary awards to any Tasmanian Year 12 student who has been selected to represent Australia at international science competitions, such as the Science Olympiads and the International Youth Science Forums. This scheme was inaugurated in 1996 and so far, seven students have been assisted with bursaries of \$500 each. Tasmania has been particularly successful in the Biology Olympiads - having had a representative in each Australian team over the past four years.

## **Year of the Older Person**

1999 is the Year of the Older Person and the committee of the Tasmanian Division, in discussing possible events for 1999, noted that the membership of ANZAAS is dominated by those who are already, or shortly to be, catered for in the title. It led us to recognise the urgent need for membership drives to change the age profile of membership. We will be discussing this further. Issues are partly provision of medical services, changing national and state population age profiles, and all the support services that 'more mature' people need.

## **Constitution**

Tasmanian Division committee will be examining the proposed changes closely over the next few weeks.

# VICTORIA

By Ann WESTMORE

## **ScienceNOW!**

The Victorian Division is busy organising an event in two parts for ScienceNow!, an important part of National Science Week.

### **1) Business Forum at Melbourne Exhibition Centre,**

Friday May 7, 11am - 1.10pm.

"Business for the 21st Century; The Role of Technology Precincts in Hatching New Businesses"

The session would form part of ScienceNow!, Australia's premier Science Week forum. Professor Margaret Britz, former Science, Technology and Engineering Policy Adviser to the Victorian Government, has agreed to chair the session. We anticipate the other speakers at the forum will include; \* Dr Tony Finney, independent authority on technology parks and business incubators \* Dr Tom Forgan, Managing Director for the ATP in Sydney or Angus Robinson, ATP's General Manager \* Ray Willis, US authority on business incubators and Deputy President of Thermogen, Chicago \* A spokesman from the Docklands Technology Precinct

### **2) "Tour" of the Docklands Stadium**

During the afternoon of Friday, May 7 (time to be finalised). The idea is to bus people from the Melbourne Exhibition Centre to the marketing centre at the Docklands Stadium where the discussion will move to a practical level.

We anticipate a most interesting and entertaining Science Week activity with strong involvement from the business community.

## **Youth ANZAAS**

The six students (aged 16-18) from Victoria that attended the Year of the Ocean conference in Hobart were asked for feedback about the conference via a questionnaire. The things they liked best included;

- Meeting other students from around Australia and New Zealand who were keen on science,
- Talking to scientists and finding out what doing research really involves,
- The excursions and the Governor's reception,
- Some of the lectures.

What they liked least included;

- The conference was too short and the hectic pace was quite overwhelming,
- There were too many lectures (perhaps in future some could be replaced by more hands-on activities?).

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# Notice of Annual General Meeting

The Annual General Meeting of  
**ANZAAS**

will take place on:

**Wednesday, April 28<sup>th</sup>** at

Room 201, Dept. of Continuing Education,  
10, Pulteney Street, Adelaide and will  
commence at **7.30 pm CST**

Satellite meetings will take place in each Division at the relevant time and the Convenor of those meetings will be the Divisional Council Member or the Divisional Secretary

The satellite meetings will have the same status as the Adelaide meeting and all financial or honorary members are entitled to attend in person at any of the meetings.

Members wishing to place any item on the agenda for attention at the AGM should contact the Secretary **as soon as possible**.

Postal voting will not take place at this meeting.

The contact person for your Division is:

## **NSW**

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Agendas, proxy forms and other details will be sent to members on  
Wednesday, 24<sup>th</sup> March, 1999.

No member may hold more than five[5] proxies.

Copies of the Committee reports and the Accounts for the year 1997/1998 will  
be available at all of the venues and will be published in the next newsletter.

## Call for Nominations

It is hoped to present both the ANZAAS and Mueller medals at the Pacific Science Congress being held in Sydney between 4<sup>th</sup> - 9<sup>th</sup> July

Nominations are now sought for suitable recipients of both medals.

Brief criteria are given below, and more information can be obtained from the Secretary. There are no formal nomination forms.

## THE ANZAAS MEDAL

The ANZAAS medal is awarded for services in the advancement of science or administration and organisation of scientific activities, or the teaching of science throughout Australia and New Zealand and in contributions to science which lie beyond normal professional activities. The ANZAAS Medal is awarded to the winner at a suitable presentation ceremony during the course of a scientific conference or event

Andor Meszaros, a Hungarian-born sculptor of worldwide reputation who lived in Melbourne, was the designer of the ANZAAS Medal, which was first awarded at the 38th ANZAAS Congress at Hobart, Tasmania, on August 16, 1965.

"Is there a limit [to knowledge]?" asked Meszaros

Today, science has expanded man's vision beyond the natural horizons. The ANZAAS Medal suggests the progress from the pyramids of Egypt, 7000 years ago, to the scientific innovation and technology of today - only the moon and the horizons have remained constant in a changing world.

## THE MUELLER MEDAL

The Mueller Medal honours Baron Sir Ferdinand von Mueller, one of Australia's great pioneers of exploration and science, who arrived in Australia in 1847 and was the Government Botanist of Victoria for 44 years.

It was initiated at the ninth meeting of ANZAAS Council in Hobart, 1902 and was designed by Baldwin Spencer, a friend and protege of the Baron; it shows the subject solemnly contemplating a spray of acacia on the obverse with, on

the reverse, a waratah flower and the name of the recipient. The Medal is awarded to a scientist who is the author of important contributions to anthropological, botanical, geological or zoological science, preferably with special reference to Australia.

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### **Acknowledgement of membership and subscription.**

Subject to budget and Council approval, as from 1<sup>st</sup> July 1999 it is proposed to acknowledge receipt of subscriptions with a laminated membership card showing each members' details. The card will be about the size of a credit-card. If any member has opinions on this matter, please contact the Secretary or your Divisional Council member.

It is also hoped to introduce subscription payment by credit-card as from 1<sup>st</sup> July, subject once again to satisfactory costings being approved by Council.

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## **Book Bite**

### **Earth Time**

By David Suzuki. 1998 ISBN 1 86448 941 3. \$24.95, Allen & Unwin.

David Suzuki, the internationally recognised environmentalist and science broadcaster, here offers a collection of essays that distill his thoughts on a wide array of environmental issues. These essays are based on his syndicated newspaper column from 1993 to 1996 and mark the author's increasing preoccupation with the growing intensity of the global eco-crisis and its key root causes. Suzuki writes unflinchingly about the forces that threaten to destroy the environment and take the human race with it: globalisation, political short-sightedness and anthropocentric greed.

In the essay "Who Needs Nature? We Do!" he argues that the move from unsustainable to sustainable social and economic activities requires a fundamental shift in attitude to the world. Unsustainable activities are driven by anthropocentric views that value non-human life only in terms of its

immediate economic value. In contrast, sustainable activities are founded on an awareness of the integrity of the whole of nature, which acknowledges the dependence of continued human existence on preserving the quality of the world around us. This life-giving environment includes the other living forms that are co-passengers on this small and finite planet. The "Earth Time" of the title refers to the need for humans to slow down in their rush to embrace the man-made future, and take time to understand what really makes the world live.

In a clear lesson to ANZAAS, and other science-supporting organisations, Suzuki tells us in the conclusion to the book that he has learnt that it is not effective to lobby politicians on particular environmental issues as the sole means of inducing environmentally sustainable policies, due mainly to the short-term nature of ministerial appointments. Now he prefers to work at the community level so that *everyone* understands that clean air, water, soil, along with solar energy and biodiversity, are critical elements in our survival. Then it will not matter what party is in government, as the accepted social value system will ensure that all governments must act to preserve a sustainable society. To prosecute the goal of improving community awareness on environmental issues the author has set up the David Suzuki Foundation: the work of this organisation is detailed on the web site

<http://www.davidsuzuki.org>. Such a democratic political strategy is clearly in line with his central idea when alternatively stated in the form that all the inhabitants of earth must work together to sustain life on this planet.

The 18 essays in the book form a cohesive structure and Suzuki writes in a clear and engaging style. He is often forthright but the more contemplative pieces are equally as powerful. Selected data and examples also leaven the arguments. Within each essay, however, Suzuki's arguments are presented in somewhat fragmented fashion, presumably as each essay is based on a collection of related newspaper columns. The main points, however, bare repetition, and it is interesting to see the way he approaches key ideas from different angles in succeeding sections of an essay, and from essay to essay. Moreover, this style encourages the reader to make his or her own

connections. This book is highly recommended for anyone interested in the future of life on this planet. *-Duncan Rouch.*

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