

# THE ANZAAS MERCURY

ANZAAS: Empowering the Community with Science

∞ Issue No. 10, June 2001 ∞

## Editor's Edict

This issue concentrates on ANZAAS news, notably the forthcoming Council election. We apologize for the lack of journalistic content, due to difficulties in the editorial office -  
*Duncan Rouch*

## Adam's Airing Comment From The Chair By Paul ADAM

### Technology Failures: Taking The Public Seriously

There has been considerable concern about the declining enrolments in science at high school and tertiary institutions. Perhaps we are beginning to see the trend reversing. Enrolments in 2000 and 2001 offer a glimmer of hope that the decline may be slowing or even that the trend may be reversed. At my own institution, UNSW, we have been faced in 2001 by a 60% increase in enrolments in first year biology, a very welcome if dramatic shift that brings with it its own set of problems. The increase in interest in biology continues a trend of a switch away from other sciences like chemistry and physics. I, of course, welcome the interest in biology, in all its various forms, but advances in other disciplines are still needed, both to sustain those disciplines and to underpin biology. We need to encourage students in all the science. We are not alone in failing to attract students into chemistry, physics, geology and other disciplines and no-one seems to have a 'solution' to the problem.

Nevertheless one of the reasons for the decline in public support for science, which clearly influences career choice, is a deepening public distrust not of science *per se*, but of the ways science is regulated and applied. The level of distrust is much greater in Europe than Australia, but media coverage has been such that many of the concerns of the European public have ventilated here.

There are obvious reasons why this should be so BSE and now the Foot and Mouth Disease epidemic have raised many questions about the scientific advice that governments'

receive and act upon.

The Foot and Mouth Disease epidemic is clearly a disaster which will have social ramifications for years to come, as well as immediate economic consequences. For Australia there are lessons which we need to learn about quarantine and management and disease outbreaks, but also about how governments and the people can prepare for such emergencies. Once an emergency is underway there is little opportunity for development of policy involving all relevant parties. It has been said that armies are equipped to win the last war, and from a distance it would seem that the British approach is based on that in the last great outbreak in 1967 (which I remember well), even down to some of the statements from Ministry spokesmen. The world is, however, different - the scale of agriculture has changed, making it difficult to manage slaughter of the numbers of animals now involved; the distances animals are transported from farm to abattoir are much greater and quicker, making containment more difficult; and there is a public less familiar with rural life and more questioning of a slaughter policy, particularly given the existence of a vaccine against the disease. When the likelihood of an epidemic is very small how can policies be kept current? Would the public wish to be involved in the development of policy which assessed different strategies if it thought that there was only the remotest possibility of the policy ever being required?

If, perish the thought, foot and mouth disease appeared in Australia would we be any more successful in dealing with

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## ANZAAS

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the consequences than the Europeans.

An area where public mistrust both of science and of government regulation of science has been expressed in Australia is over the conduct of medical research. Two issues have been given recent publicity - the removal of body parts in autopsies, and payments by pharmaceutical companies for trials. Advances in medical research require both the assistance and support of the public. There would be even greater outcry if untested drugs and procedures were permitted to be used, and the message that research is absolutely essential if our health needs are to be met needs to be expressed loud and clear. Equally, however, scientists need to understand, and be receptive to, the concerns of the public, and arrangements between companies and researchers need to be open.

The media attention on this issue highlights more general issues about the relationship between science and society. As Stephen Byers, the British Secretary of State for Trade and Industry expressed it recently "In responding to this erosion of public confidence we have to acknowledge that people are rightly concerned about the potential risks of any change. We won't recover trust by telling people they're wrong. That was tried in the past and it didn't work". The "advancement of science" requires that the public be engaged with science in the broadest sense, but it also requires that there is genuine dialogue between scientists and the public and that it is not a case of we know best.

*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*

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## ANZAAS NEWS

### Be a Mercury Reporter!

If ANZAAS is to improve its professional image, and obtain the best leverage from its activities then the activities it runs should be reported in newsworthy fashion. So how about doing an important job for ANZAAS missions by becoming a Mercury Reporter? When you attend an ANZAAS or other science empowering public event, simply write a few paragraphs about it and send it to the Editor: e-mail [duncanar@unimelb.edu.au](mailto:duncanar@unimelb.edu.au), or post it to ANZAAS, see the front page. You do not need any experience. Simply look at previous issues of the Mercury, or the story below, to see how what might seem a simple event, like a seminar, is made into strong news. Try to tell a story of why the event is important, what happened, what were the key conclusions, how does the event relate to public concerns. You can also add your reporting experience to your CV, so I wish you happy writing!

### Rescuing Planet Earth: Environmental Economics

Duncan Rouch and Bob Vickery

In an exciting and thought provoking presentation Geoff Waugh rocked the foundations of modern economics in a tour de force about why economics has helped to produce the current environmental crises. Waugh, 1999 Australian University Lecturer of the Year and Associate Professor at the University of New South Wales, spoke at the Giblin Lecture for 2000 entitled *Environmental Economics - An Oxymoron?*

The Giblin Lecture of ANZAAS was instituted in 1958 in honour of the influential economist and statistician L F Giblin. Waugh was chosen for his important contributions to economic education and practice.

Waugh began his seminal push against the gates of classical economics by telling how little the environment features in mainstream economics. A textbook widely used to educate young economists devotes only 19 out of 1000 pages to the environment. This problem stems from the past. While the founders of classical economics, including Adam Smith and John Stuart Mill, expressed a concern for the environment they did not include it formally in their work.

Classical economics began during the scientific and industrial revolutions of the 18<sup>th</sup> and 19<sup>th</sup> centuries and was influenced by deism, which considered science to be the search for the laws of an impersonal God. These, expounded Waugh, were a time of great economic growth, though, even then, Thomas Malthus (1766 to 1834) was moved to consider the limits to growth. This line of thought influenced Charles

Darwin in developing the theory of evolution by natural selection.

A quaint but very dangerous idea from classical economics, warned Waugh, is that competitors are perfect and they act with perfect knowledge and manipulating their financial utilities with perfect rationality. This system has no need for external intervention, so it is divorced from morals and ethics. Sadly, Waugh emitted, it is essentially the only sort of economics taught in schools and universities.

The neoclassical economists William Stanley Jevons (1835-1882) and John Maynard Keynes (1883-1946) developed a program to optimise the workings of the classical economic system but still made the same old mistake, explained Waugh, by thinking that the environment is an externality which can be ignored. Tony Prato, a modern American economist, is attempting to change this by evaluating the impacts of human activities on ecosystems. However, it is not possible, to assign a reliable economic value to all parts of our environment, such as a wandering albatross.

Not only economics but also science was a target in Waugh's vigorous attack on the establishment. Scientists have scarcely contributed to the effort to bring reality to economics, argued Waugh. An exception was Konrad Lorenz who in 1963 contrasted reason and cultural tradition on the one hand with behaviour adapted through evolution on the other. Waugh, however, stated a way forward for science to be a key part of the environmental solution, and not part of the problem. This new start begins with other ideas from the past, like the study of social evolution started by Thorstein Veblen in 1899. Here in the present the Association for Evolutionary Economics, an organization of economists and other social scientists, has a vigorous program of analysing economics as an evolving, socially constructed and politically governed system. Among leading evolutionary economists are American Paul Krugman and Australian Geoffrey Fishburn. To bring economics out of wonderland and into the real world Waugh concluded that the great contribution of evolutionary economics may be to ask the right questions.

### Join The Victorian Committee!

The Victorian Division is calling for people to nominate for election to the committee for 2002. The Committee meets around once per month, just bring along your good ideas and enthusiasm to help empower the community with science. Simply send your name, contact details, and a paragraph about why you would be a good choice, to Nick Bond, e-mail: [nick.bond@sci.monash.edu.au](mailto:nick.bond@sci.monash.edu.au), post: Dr Nick Bond., Dept of Biological Science, Monash University, Vic 3800. **Closing Date for nominations: Friday August 31<sup>st</sup> 2001.**

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# Perrin's Points

## News To Members From The General Secretary

**SUBSCRIPTIONS** - Members are reminded that their subscriptions are **now due**. Following a decision by the Australian Taxation Office ANZAAS is required to collect GST from its subscriptions. The Treasurer has recommended that the GST on renewal subscriptions or new subscriptions be absorbed for this coming year and the position reviewed in June 2002. Therefore subscription rates remain as follows:

Ordinary Members:	\$45
Retired/Concession Members:	\$30
Student Members:	\$20

Renewals of all categories of subscription are due on **1<sup>st</sup> July** for the 2001/2002 financial year.

Members are reminded that ANZAAS provides for subscription renewal by credit card, [not AMEX or Diners!] although this facility does NOT provide for telephone renewals as we would be required to place \$5000 on deposit at the bank to underwrite non-signature transactions.

It is hoped that in the near future we shall have put into place a facility on our upgraded web-site that will allow members to renew via totally electronic means, with new members enrolling via the web-site.

**MEMBERSHIP CARDS** - Any member not in possession of a current membership card is asked to contact the office as soon as possible. The card is the size of a credit card and has our logo and title on one side and the Member's details on the other.

**DIVISIONAL MEETINGS** - Members are urged to support Divisional meetings of all kinds, and to particularly encourage the younger members to organise and participate in Divisional activities. It is crucial to the long-term survival of ANZAAS as a credible entity that the younger members begin to be brought into the management of the Association. Divisional meetings can be good recruiting grounds for new members.

**ELECTION OF OFFICERS** - The revised Constitution of the Association requires that the prescribed Offices shall

fall vacant after a term of three years. The incumbent officeholders can offer themselves for re-election provided that they have not held the office for two consecutive terms.

The Offices of **Chairman, Deputy Chairman, Secretary and Member-at-large** fall vacant at the next Annual General Meeting.

**NOMINATIONS** for the vacant posts should be sent to the Secretary as soon as possible, and **in any case by the close of business on AUGUST 16<sup>th</sup> 2001**.

Where more than one nomination is received for any vacancy, a postal ballot of all Members will be held.

The incumbent officeholders have all expressed their willingness to continue in their respective offices for a further term. These incumbents are:

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## SUBSCRIPTION RENEWAL NOTICE or NEW SUBSCRIPTION

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# Book Bite

## Science friction. The Maxicrop case and the aftermath.

Edmeades, D.C. 2000. ISBN 0 473 06886 9, Published by Fertiliser Information Services Ltd., P.O. Box 9147, Hamilton, New Zealand.

This book is an important contribution to the literature on the role of public science. The Maxicrop case was one of the longest running court proceedings in New Zealand legal history in which the Bell-Booth Group sued the Ministry of Agriculture and Fisheries and TVNZ for damages (initially \$5.5 million, later amended to \$11.5 million). There were three causes of action: defamation, negligence and misfeasance.

Maxicrop is a concentrated seaweed extract, which was promoted as a fertiliser, providing nutrients and plant hormones. As it was to be applied at extreme dilution it was considerably cheaper than conventional fertilisers. As with farmers everywhere, New Zealand farmers in the mid-1980s were subject to economic pressures, and with fertilisers as a major cost a cheaper alternative was welcomed.

Dr. Edmeades was a scientist in the Soils and Fertiliser Group of the Ministry of Agriculture and Fisheries. After extensively reviewing the world literature on non-traditional fertilisers, and after receiving analyses of Maxicrop Dr. Edmeades came to the conclusion that, used as directed, the product could not possibly provide the claimed benefits.

In April 1985 Dr. Edmeades appeared on the TVNZ program 'Fair Go' with Mark Bell-Booth and David Bellamy in which he presented his case against Maxicrop. It was this program which provided the basis for the subsequent legal action.

Dr. Edmeades provides a very interesting account of the trial and of the role of the expert witness. This will be of relevance to many, and helps explain the difference between the scientist's and the lawyer's approach to issues.

The judgement mostly went against the plaintiffs except in one regard. In relation to the claim of negligence the judge, Justice Ellis, stated, "MAF is in the most general way under a duty to act fairly to all citizens. This involves balancing competing interests. The present case is a good example. MAF must in my view balance its primary obligations and duties to the pastoral and agricultural industries and to the vendors of products consumed by such. In general terms I consider that where an agency such as MAF intends to condemn a product it must give the seller an adequate and

fair opportunity to consider such publicity beforehand and make its responses before the damage is done."

Consequently his Honour found that MAF had breached this duty of care and had acted negligently, awarding the Bell-Booth Group \$25,000.

The company was not satisfied with this tiny victory and appealed to the Court of Appeal, which provided no encouragement and overturned the negligence verdict, observing *inter alia* that, "Some of the arguments for the company go close to asserting that a manufacturer has a right to sell worthless goods as long as he honestly believes that they are some use. We would see that as putting it oversimply. Those who reasonably believe that the goods are worthless must have an equal right to say so." Despite the clear defeat of the plaintiff, who had initiated the case, the view was widely expressed that the powers of government had been used to crush a small struggling entrepreneur.

The second part of the book deals with what Dr. Edmeades portrays as an attempt by senior management to silence him and limit the scope of his work on phosphorus fertilisers. He makes a convincing case, but as he makes clear it is one sided because the other side were not forthcoming. There may be a perfectly innocent explanation as to why MAF management acted as it did, but it has yet to be provided.

Dr. Edmeades suggests that his difficulties arose from a change in philosophy by government and public service managers. This was the time of rogeronomics when as Dr. Edmeades puts it "Market *uber alles* was to be the new way forward". The view of MAF as to its role was "As scientists our job is to state the facts without product endorsement. We should state the facts without disendorsements", which may not assist farmers make informed decisions.

Dr. Edmeades suggests that in his view "the efficient economy must also be one which is well informed. In a technical area, such as fertilisers, the creation of this awareness is a legitimate role for science, especially where the scientific method is required to test efficacy of products and services". I would concur with these sentiments; public interest science should be in the interest of the public, which includes both producers and consumers. Dr. Edmeades also expresses concern about the increasing commercialisation of government science in New Zealand, suggesting that this inevitably creates perceptions of conflict of interest (if not actual conflicts) and makes it very difficult for government agencies to be seen as sources of impartial advice.

All in all this is a thought provoking and timely book. Dr. Edmeades no longer works for MAF, while Maxicrop is back on the market. -Paul Adam

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