

THE ANZAAS MERCURY

ANZAAS: Empowering the Community with Science

∞ Issue No. 23, December 2004 ∞

Editor's Edict



Please enjoy this issue with news about S&T issues. This time we have more news and analysis. In **ANZAAS Debate** we have the 2nd part investigation of crop circles as a prototype of sexy pseudoscience: what are the lessons for ANZAAS? Also do not miss the great ANTENNA.

-Duncan Rouch

Adam's Airing



Comment From The Chair
By Paul ADAM

Fundamental Issues Ignored in Election Campaign

Science did not feature highly in the recent Federal election campaign. Education had a higher profile, but the nexus between science, education and the nation's future was scarcely discussed in any depth.

In the aftermath of the election the prospect of renegotiating the balance between Commonwealth and the States in the administration of universities has been flagged by the NSW Premier, Mr. Carr. At present we have the apparent anomaly of the bulk of public funding to Universities coming from the Commonwealth, but the institutions being established under State legislation and governed by bodies (Councils, Senates etc) at least partly appointed by State governments. Although the proportion of university budgets arising from the public purse has been declining, recent Commonwealth governments, of both political persuasions, have increasingly sought to direct and control the University sector. The current dual accountability creates tensions, and arguably some inefficiencies. The independence of individual institutions and the range of governance systems could act as mechanisms for promoting diversity within the sector, but the pressures and constraints imposed from Canberra, despite all the rhetoric to the contrary, promote increasing homogeneity and

mediocrity. Complete transfer of responsibilities to the Commonwealth is unlikely to result in a change to this trend. Importantly it is unlikely to be linked to any great increase in funding to address the problem of ageing infrastructure, particularly in the sciences, or to provide incentives for staff renewal. Over the past few decades universities have become, in managerial terms, more 'efficient' – but that has been at the expense of the essence of what universities should be. Student-staff ratios have increased, the mean age of staff has risen, and the number of technical staff has dropped. Universities survive because of the commitment and dedication of their staff. It is unfortunate that this is insufficiently recognized by government, and that some of the measures flagged for the new term of the Government, may lead to divisiveness, lower morale and industrial warfare, rather than building the university sector's strengths.

The need for a culture of informed debate, innovative thinking and basic research was highlighted by two issues which were topical during the election, although neither figured in the campaign.

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Our capital cities are facing major problems of water supply, agricultural water use is increasingly seen by many as unsustainable. Even when the current drought is ameliorated, the underlying issues will not go away. Can we design more water use efficient suburbs, how can recycling be increased, what is the role of desalination, and can the process be made more energy efficient, how much water is needed to retain viable river and wetland ecosystems? At present research, policy development and public education are uncoordinated, lack urgency and are probably underfunded.

Oil prices are currently higher than they have been for many years. Prophets of doom have long warned of the end of the oil age – this is not yet upon us but ‘cheap’ oil may be a thing of the past. Increasing demand, particularly from China, and continuing political instability in the Middle East, will probably mean that prices, although possibly dropping somewhat, will remain much higher than they have been for the past decade. This will create demand (and need) for more efficient energy use, new sources of energy; and will have ramifications for

urban design, public transport systems, and western agriculture (heavily dependent on chemical pesticides and fertilizers). The issues are global, but the unique circumstances of Australia mean that we need to develop our own policies and to conduct our own focused research. As yet the response is muted, and prices have not been high enough for long enough to create the public pressure for political action. Again we need to maintain the capacity to conduct multidisciplinary innovative research. Australia is already a world leader in alternative energy research, but funding has been relatively limited and continuity of programs uncertain.

The prospects are exciting, our potential great. Can we provide the environment in which this potential can flourish, or will we struggle to catch up with the rest of the world?

I would welcome any comments and suggestions for issues that could be addressed -e-mail: chair@anzaas.org.au, FAX: 02 9385 1635, Tel: (W) 02 9385 2076, (H) 02 9314 2453.

ANZAAS News

Victorian Division Science Talks

Recent topics of Victorian science seminars:

- ❖ The origins of modern whales and dolphins: emerging fossil evidence –Mr Erich Fitzgerald
- ❖ Exploring Mars with robotic rovers Spirit and Opportunity – Dr Marion Anderson

For further information contact Eric Webb: e-mail, ericwebb@connexus.net.au

Dear Divisional Committees

Do you just like looking at white space?
This is your newsletter, so why not send us
news of your activities?

The ANZAAS Debate - Crop Circles: Sexiness of Pseudoscience

I discuss here the investigation of crop circles as a prototype example of how sexy pseudoscience and irrational beliefs can create poor public understanding of science-based community issues. The case of crop circles is replete with fallacious argument, poorly performed research, and most critically the transformation of scientific theories into pseudoscience. This is Part 2 of a 2 part investigation. Part 1 appeared in the previous issue.
—Duncan Rouch

Playing the Pseudoscience Game

With the exception of Andrews the mind set of other high-profile writers in the area is reminiscent of Huckleberry Finn's father. "Yes, and I told 'em so; I told old Judge Thatcher so to his face. Lot's of 'em heard me, and can tell what I said," said Huckleberry Finn's father (14). Finn's father was illiterate. He depended on being heard by others to validate his experience. He also held little doubt in his own view. These last two are also common characteristics of investigators who are untrained in scientific methods. Pringle places a high priority on collecting reports of subjective experiences obtained within crop circles. Also witness Paulos's documentary, in which Freddy Silva relied on his personal experience to support his belief in a supernatural cause of crop circles (11). While Silva has a certain presence on camera the content of his message can only be aimed at the unthinking and gullible. Like others Silva is a person in denial of the realities of the human factor in crop circle formation.

Kingston shows a fallacious reliance on coincidence which is also a common characteristic. For example, that one crop pattern exhibits a ribbon pattern that is apparently similar to NASA's map of superhighways for space travel he takes as genuine support for a supernatural cause of the pattern. This claim of significance also draws on connection to the unimpeachable scientific authority of NASA, thereby appearing to legitimise Kingston's irrational supernatural claim by association with this authority.

Silva has argued that 'true' crop circles are not actually round, but slightly oval, which he claims is impossible for humans to create well. He is clearly unaware of the old gardener's trick for making perfect oval garden beds, using two stakes and a length of string.

Mystery: Too Good to be True

A boon to the true believers is the reoccurrence of new crop patterns each year. So there is a never ending supply of new patterns in which to find mysterious signs, and reinforce the faith. Yet the investigations never seem to progress (17).

The Circle Makers: Reality Check

In 1991 two middle-aged British artists, Doug Bower and David Chorley claimed responsibility for many crop circles that appeared in southern England since 1976 (15). Their initial motive was to create, "a bit of a laugh", to make people think

flying saucers had landed. Later their artistic bents informed their more creative work. A BBC investigation confirmed that Bower and Chorley were active crop circle constructors. That they had not been previously detected was mainly due to both their secrecy and practice of working only at night. Despite the confession of Bower and Chorley many people had been previously struck by a belief in a supernatural basis of crop circles and refused to give it up, in the face of reasonable evidence to the contrary.

In the early 1990's a band of talented younger British artists formed the Circlemakers group. Notable members of this organisation are John Lundberg, Geoff Gilbertson and Rod Dickinson. This group followed the practice of Bower and Chorley and created further innovative new designs (16). The Circlemakers have also gained commercial contracts to render



Crop circle car created by Circlemakers. Photo courtesy of Circlemakers.

crop patterns for advertisements, documentaries, and newspaper publicity stunts. Notable, for looking as human-made as possible, is their crop rendition of a passenger car for an advertising campaign by Mitsubishi.

The Circlemakers have a love-hate relationship with the true believers. The demand for work by the Circlemakers is to some extent due to the 'other-world' interest created by Freddy Silva and others. On the other hand as Silva in denial about the human

factor, he is continually frustrated and angered by the work of the Circlemakers.

Beyond Bower and Chorley and the Circlemakers, clearly other artists have followed suit, both in England and around the world, to the point that it is difficult to consider any other reason for formation of crop patterns than us humans.

Role of Media

In recent times each summer the British tabloid press has tended to feature the prettiest crop patterns and shroud them in mystery, thereby promoting irrational belief in supernatural causes. In 2002 Mel Gibson launched a film entitled 'Signs', which also fanned the flames of irrational belief. Nevertheless with apt circularity at summer's end there is a tendency to debunk supernatural explanations in favour of human construction. The tabloid press have tended to act as opportunists in devising stories on this topic, being primarily concerned in how sexy stories are, rather than the veracity of their content.

The Spiritual Vacuum

There has been a movement of people away from the established churches over the last fifty years, in part due to their apparent lack of relevance to peoples' lives. This has created a spiritual vacuum for many in society. It is not surprising then that significant numbers of people have turned to other sources of faith such as Buddhism and the new age mysteries.

New Age Life Style

The new age paradigm of alternative life styles appeals to those seeking an individualistic solution to their spiritual needs. Believers can mix and match different aspects of new age ideals to suit their wants. This focus on the individual



Freddy Silva:
frustrated by reality

particularly suited the mainstream cultural focus of the 1990's on personal pursuits.

New age ideals are not new but date back thousands of years to irrational times. Even with the later rise of the age of reason and rational investigation of the world around us belief in the old ideas has persisted. Consider the ongoing prevalent belief in horoscopes, for example.

Thus despite all the fallacious pseudoscience there is a significant demand from the public for the books written by Silva and other like-minded 'true believers' in supernatural causes of crop patterns.

Combating The Power Of Irrational Belief

In this report I have outlined the investigation of crop circles as a prototype example of how alluring pseudoscience and irrational beliefs can create poor public understanding of science-based community issues. The case of crop circles is replete with fallacious argument, poorly performed research, and most critically the transformation of scientific theories into pseudoscience. A value of investigating the crop circle case is that as it has evolved over an extended period of time the dynamics of communication and personal roles of players are clear and well documented. While crop circle phenomena is a relatively inconsequential subject the types of poor communication and arguments seen in this case may well apply to more critical science-based social issues, like that of Genetically Modified Organisms.

From this analysis it can be concluded that there is clearly an uphill battle for science to control the spread of sexy pseudoscience in general within the public sphere. The need for public science organisations like ANZAAS is as great as ever.

References

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News & Analysis

Australia's Future Population — Time to Face Up to Difficult Challenges

By Barney FORAN

In the absence of a national population policy, Australia is moving towards a more or less stable population of around 23 to 25 million people in one or two human generations' time. The CSIRO Resource Futures team has looked at the future impact of three population/immigration scenarios on infrastructure, resources and the environment to the year 2050. Barney Foran, program leader of the CSIRO's Resource Futures Program, said, "Our report focuses on the environmental aspects of population impact, with particular emphasis on the quality and quantity of water, soils, biodiversity, atmosphere and natural amenity."



Barnev Foran

Population Numbers

The first scenario considers what would happen with a zero net immigration rate. The second concerns an immigration rate of 70,000 a year (the current policy setting) and in the third (high population) scenario the rate is set at 0.67 per cent of the current population per year.

Under the low scenario, Australia's population would be 20 million by 2050, the medium scenario gives a population of 25 million and the high scenario results in a population of 32 million by 2050. By 2100 the scenarios give between 17, 25 and 50 million people.

The Change Imperative

The scenarios show continued growth in a range of key sectors of the physical economy at least until 2020. Even under the low population scenario, declining household size, internal

migration patterns and requirements for tourism accommodation will stimulate activity for the building industry. In terms of the physical economy, this growth gives us cause to be optimistic in the short term. The reasons for optimism are that 20 years of assured activity gives the nation time to implement substantial innovation and that stocks of buildings, motor cars, passenger transport and freight systems that incorporate the cleanest, most advanced technology will have time to penetrate the national system. Also, as long as these trends eventuate, growth could underpin new export industries that are rich in services and information, which can substantially replace the current export mix.

Key Change Issues

Significant progress toward a sustainable physical economy in Australia requires more than just managing our future levels of population. It will also require the simultaneous management of infrastructure, lifestyle, energy, international trade, inbound tourism and the technology incorporated in key machines and processes.

The report argues it is feasible to prepare the workforce and its infrastructure well ahead of time, to better accommodate these issues. Our scenarios suggest that aggressive adoption of technology to address environmental problems shows much promise. Smart designs are already in existence for houses and motor vehicles which can significantly reduce energy use and greenhouse gas emissions. But counteracting this are consumer demands for larger buildings, higher-quality goods, luxury, more powerful vehicles and more frequent air travel.

An efficient consumer-led economy generally embraces growing volumes of cheaper goods and services, which in turn consume increasing levels of energy and material. Unfortunately, the study suggests that better cars and houses will have little moderating effect on total energy use and subsequent greenhouse emissions. If vehicle and housing policy is to affect future energy use, then each year's complement of new houses and cars must meet the highest, rather than the average, technical standards.

While pricing policies can moderate the use of resources such as energy and water, they are seldom applied to stabilise resource use in a physical sense. The direct and indirect requirements for energy, water and land are directly related to per-capita expenditure. As per-capita expenditure grows, so too does the resource quotient required to produce the sum total of goods and services included in total personal consumption.

There is also the 'rebound effect' where efficiencies gained in one sector give savings (in resources or money) that inevitably migrate to stimulate resource use in another sector.

The study found that direct population effects (the more people the greater the impact) are important in three areas of resource consumption and environmental quality: stocks of marine fish, stocks of oil and air quality. The study highlights a growing gap between domestic oil production and domestic requirements past 2010. The higher the rate of population growth, the larger the gap. While imports may fill the gap in the medium term, meeting demands in the longer term will require multiple responses including the discovery of new petroleum provinces, the widespread use of energy efficient vehicles and the development of other fuel sources such as natural gas, oil shale and biomass.

Surprisingly, the study finds that water availability is not likely to be a constraining factor under any of the population scenarios, provided that big changes occur over the next 50 years.

According to the report, without a focus on the variables that change slowly, such as population size, policy design for the physical economy is running blind. We should be focusing on, for example, population aging with a 50-year timeframe.

Low Population

The study found that a lower population size (20 million people by 2050 driven by an assumption of zero net immigration) resulted in the stabilisation of a range of environmental quality issues (such as emissions in the airsheds of capital cities) and resource use issues (eg household water use). Total greenhouse gas emissions were lower and the physical trade balance was higher.

The key challenges under the low-population scenario related to a rapidly declining population after the year 2100, a larger proportion of aged citizens and the possibility that health-care and pension systems will not be able to cope. It suggests that without substantial structural change, maintaining economic growth in a declining population could be difficult.

High Population

The high population scenario (32 million people by 2050) has continuing growth as its key element with an eventual population of 50 million by 2100. While resource use and environmental quality issues are more challenging than in the other scenarios, some ageing issues are proportionally less important. Under this scenario, Melbourne and Sydney become megacities of 10 million people by 2100.

Under the high-population scenario, the population is proportionally younger. The proportion of dependent people - important for health and welfare issues - is greater than for the low and medium scenarios. The changing demographic structure envisaged in our scenarios raises important issues. First, regional Australia tends to age more than the cities, due to internal migration. The impact of regional aging is compounded by increasing age-related medical problems in the regions, compared to younger cities. Also, the demand for services such as education will fluctuate, because of slow-moving changes in demographic structures.

Status Quo

Under a scenario representing the status quo - 70,000 net immigration per year, resulting in 25 million people by 2050 - the population stabilises after 2050. Even so, resource use and pressures on the environment keep growing due to assumptions about growth in personal affluence, growth in exports and inbound tourism and a failure to implement cutting-edge technology across all sectors.

The key challenge of this scenario is to move from relative inactivity into aggressive and positive action on several major fronts. How does the nation enable major investment to proceed while addressing failing marine fisheries, declining biodiversity and land and water degradation? How do capital cities restrict edge growth while re-inventing urban transport and energy systems to provide low-carbon transport and energy services with reasonable equity?

For more information about the CSIRO report see, <http://www.cse.csiro.au/research/Program5/futuredilemmas/>
Source for this article;
<http://www.onlineopinion.com.au/view.asp?article=1185>

When World Oil Reserves Run Out?

The development of bioalcohol industries clearly has major implications for natural resource management, regional development and the national economy. The CSIRO Resource Futures group has produced a timely report on this subject. The group found that Australia's oil reserves will be almost exhausted by 2020 and, at the current rate of export, we'll be out of natural gas by 2040. The group says future importations of oil and gas will put huge pressure on the national balance of payments, with an estimate that annual energy imports will cost Australia \$5 billion by 2010, rising to \$10 billion by 2020.

On the other hand, the report says, Australia could become self-sufficient in energy if it changed to a methanol-led economy. "This means that wood for the manufacture of methanol would gradually replace oil as our major fuel source," says CSIRO group leader Barney Foran. Methanol has had a long association with motoring. It powered the first internal combustion engines, and these days is the fuel of Indy racing cars. According to Barney Foran, Mercedes Benz currently has a methanol-powered car on the production line.

The Executive Director of Land & Water Australia, Andrew Campbell, says Australia needs to examine its future energy needs with an awareness of all of the potential benefits and drawbacks. "The advantages of biofuels include reduced greenhouse emissions, reduced reliance on imported fossil fuels and significant regional development opportunities," Campbell says. However, he warns that the transition between a fossil fuel economy and one based on biofuels could produce an economic downturn. It could also exacerbate land use planning problems, displace existing agricultural industries, and cause social dislocation. "Large-scale plantations would also reduce run-off and affect river flows," he says. "And as with any new technology, there's the risk of being overtaken by newer, smarter and less resource-intensive technologies. "We must be aware of these issues in order to understand them and deal with them."

To achieve sufficient planting for biofuel production, it would be necessary to plant 750,000 hectares of trees a year for the next 50 years, about a 10-fold increase on current planting rates.

Bush Gets Blast From 4000 US Scientists

In July this year more than 4000 scientists - including 48 Nobel Prize winners and 127 members of the US National Academy of Sciences - accused the Bush Administration of distorting and suppressing science to suit its political goals. "Across a broad range of policy areas, the Administration has undermined the quality and independence of the scientific advisory system and the morale of the Government's outstanding scientific personnel," the scientists said in a letter on Thursday. The Administration has often been accused of misusing science to further its policy aims.

Administration officials rejected the criticism, just as they did when the same letter was published in February bearing the names of 62 prominent scientists. John Marburger, director of the Office of Science and Technology Policy, said the letter and a report published simultaneously by the Union of Concerned Scientists made "sweeping generalisations based on a patchwork of disjointed facts and accusations that reach conclusions that are wrong and misleading". "This Administration values and supports science, both as a vital necessity for national security and economic strength and as an indispensable source of guidance for national policy," Dr Marburger said. In support of the government the Health and Human Services spokesman, Bill Pierce, said there was no evidence that the Bush Administration was manipulating government science to bolster its policy aims.

The scientists cited examples of esteemed colleagues denied seats on advisory panels, apparently because of their political beliefs. Gerald Keusch, who left his post at the National Institutes of Health as associate director for international research and director of the Fogarty International Centre, said the office of the Health and Human Services Secretary, Tommy Thompson, had rejected 19 of his 26 candidates for the centre's board. Among the 19 was a Nobel laureate who, Dr Keusch said he was told, was turned down because his name had appeared in newspaper advertisements criticising the Administration for manipulating science.

Dr Keusch's nominees for the board, which advises on which research should get federal grants, were accepted during the Clinton administration, but once President George Bush took over his nominations "were rejected one after another".

Among Dr Keusch's nominees who were rejected was Jane Menken, a population expert at the University of Colorado who served on advisory boards under President Ronald Reagan and the first President George Bush. "I was being renominated and I was turned down," Dr Menken said. "No official ever gave me any reason." Contrary to Bush Administration policy, Dr Menken supports the availability of safe, legal abortions.

Janet Rowley, a member of the President's Advisory Council on Bioethics, said she had seen examples of the misuse of science. "This Administration distorts scientific knowledge on stem cell research, which makes it increasingly difficult to have an honest debate in a field that holds promise for treatment of many serious diseases," she said.

Source: Los Angeles Times

Sustainability Has Legs

Joe BAKER

If the legs of the stool are not evenly spaced or not of equal length, and are not secured to the platform that is the seat, the stool is obviously unstable. If one leg is missing, someone may masterfully balance on it for a few moments, but the stool soon topples over and collapses.

The three 'legs' of sustainable development are:

1. social and cultural well-being;
2. ecological well-being; and,
3. economic well-being.

If those three 'legs' aren't equally considered and equally in place, there is no stability in the system and it cannot provide for the future as well as for the present. (I suspect that the 'platform that forms the seat' equates to overall community well-being).

Some would say that economic well-being is the only factor of these three that can be accurately measured or monitored. That is a shallow response. The so-called measures of economic well-being are continuously manipulated and modified to mask undesirable trends.

It is a valuable exercise to ask among a group "How would we measure ecological well-being?" or "How would we measure social and cultural well-being?" It's amazing how quickly you can come to an agreed core set of measures, or Indicators. There will always be those that want to add more, but the core set is pretty secure.

Try it with your own group! It is a good way to spend a winter's afternoon. The same exercise also reveals how changing components of one set of Indicators requires that you consider the impacts on the other two types of "well-being". Thus, you automatically show the interactions and interdependencies which characterise the way we must proceed towards sustainable development. Like a good stool, it all ties together to show how three-faceted sustainability can be achieved and maintained. -*Dr Joe Baker is Commissioner for the Environment, ACT, and Chief Scientist, DPI, Queensland*



When is a Scientist not a Scientist?

The NSW Branch Committee of APESMA (Association of Professional Engineers, Scientists and Managers, Australia) were staggered to find out that the Chief Scientist in the NSW Department of Environment and Conservation does not need to be a scientist. This position signs off on environmental studies and liaises with other states on environment policy, regulation and research.

It is getting the stage in the NSW public service that technical positions - both scientists and engineers cannot be advertised as such because of the continuing deprofessionalisation policies of successive governments. It is also marginalizing the input of technical professionals into government policy.

One would think that government would want an eminently qualified person in positions such as a Chief Engineer or Scientist in areas where there is a high degree of technical risk to ensure the best science and engineering is applied to the problems facing governments.

Joe McKay, NSW President of APESMA, said he would encourage people interested in campaigning against this trend to contact him on 041 2076913 or jgmckay@ozemail.com.au

Perrin's Points



NOTICES TO MEMBERS FROM THE HON. SECRETARY

I am very pleased to be able to inform Members that **His Excellency Major General Michael Jeffery, AC CVO MC (Retd)** Governor-General of the Commonwealth of Australia has agreed to become the Patron of

ANZAAS.

The Annual General Meeting of **ANZAAS** took place on **Wednesday, November 24th 2004** at The ANZAAS National Administration Office, First Floor, 10, Pulteney Street, Adelaide.

Satellite meetings took place in each Division at the relevant time, the satellite meetings having the same status as the Adelaide meeting, with all financial or honorary members entitled to attend in person and cast a vote at any of the meetings. Copies of the Report of Chairman and Council and the Consolidated Accounts for the year 2003/2004 were available at all venues.

The Report of Chairman and Council for the period July 1st, 2003 to June 30th, 2004 was adopted. The Chairman paid particular thanks to all those who had been involved in making the 2004 Youth ANZAAS event such a success.

The Financial Report and Accounts for the period July 1st, 2003 to June 30th, 2004 showing an operational loss but an increase in overall assets was discussed and the Secretary was authorised to file the audited accounts with the annual return.

Officers Of The Association – The Constitution of the Association requires that the prescribed Offices shall fall vacant after a term of three years. The incumbent officeholders can only offer themselves for re-election provided that they have not held the office for two consecutive terms.

This clause meant that the Offices of:

Chairman

Deputy Chairman

Secretary

Member-at-large

fell vacant at this Annual General Meeting.

The Council had previously determined to make the necessary changes to the Constitution of the Association to allow the position of Honorary Secretary to be held on the same basis as that of Treasurer; consequently, nominations for the position of Honorary Secretary were not received and there is no change in incumbent.

No nominations were received for the position of **Chairman** and after a unanimous vote of approval, **Professor Paul Adam** has agreed to continue as Chairman pro-tem. Members are asked to give very serious and careful thought to making a nomination of a suitable candidate to fill the role of Chairman for the next three years. Members can discuss the matter *in confidence* with either the Hon. Secretary [08 8303 4965] or the Chairman [02] 9385 2076

The nomination **Dr Mike Murray** of the Victorian Division as **Deputy Chairman** was successful and he joins the Council at this AGM.

The nomination **Professor Pat Quilty** of the Tasmanian Division as **Member-at-Large** was successful and he joins the Council at this AGM.

The Association is in urgent need of a Treasurer, and nominations should be sent in confidence to the Hon. Secretary, [08] 8303 4965 from whom further details can be obtained

Nominations are also urgently sought for a Divisional Secretary/Organiser for the ACT Division to relieve the load on Dr Sue Stockmayer

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.

IMPORTANT INFORMATION!

THE HEAD OFFICE IS NORMALLY OPEN ON MONDAY AND WEDNESDAY MORNINGS AND ALTERNATE THURSDAY AND FRIDAY AFTERNOONS.

TEL: [08] 8303 4965

OCCASIONALLY, OPENING WILL BE ERRATIC DUE TO ANZAAS PARTICIPATION IN EVENTS AND PROJECTS WHICH REQUIRE THE OFFICE TO BE LEFT UNATTENDED.

MEMBERS WISHING TO CONTACT THE HON. SECRETARY URGENTLY CAN CALL 0407 742 203

Media Report

By Victor BIEN

Science Still Down the Priority List



This period I slipped behind in keeping up with the media properly. Consequently my comments will be a bit light on. That is not to say insignificant science programs did not happen. The ABC TV program Catalyst, Radio National, the Sydney Morning Herald and Time magazine continues to deliver a stream of many informative and interesting science

topics. I watched, listened and read many of these but only let the stuff "wash over me".

In the campaigning for the recent federal elections no mention of science and technology occurred that I can recollect. The dominant issue was who can you trust to properly manage the economy. The fact that much of the output of economic life is based on science and technological innovation gets buried by that focus on the 'management' of them and other factors.

This tendency for science and technology to slip down the list of people's priorities is ever present. I still deal closely with public school education issues and when curriculum is the focus, concerns about literacy and numeracy takes so much energy from people that science simply does not get a look in! It ranks lower than TAS (Technology & Applied Studies) some

of which used to be called "Home science". That has been true since 1991 when I joined a parent's representative group which has input rights to NSW Board of Studies (primary and secondary school education curriculum authority) deliberations and NSW Department of Education and Training curriculum delivery planning groups.

People have commented that the dominant purpose of school education is still to provide feedstock to commerce and industry - to keep the economic machine going. While many TAFE courses are based on technology the focus is very vocationally orientated.

The "higher" focus implicit in an interest and pursuit of science or technology requires a rise above that instrumentalist mind-frame. It is still regarded that only an "elite" who go onto university would do that.

However, in a democracy where the ordinary people govern the overall shape of public life the elite is ultimately dependent on that public to support science and technology - to be able to pursue those high level focuses. Except for large scale public issues like the water crisis, climate change and biotechnology it is next to impossible to get the desired support for science and technology from the general public.

When interest and support for science is achieved, the underlying motive is nearly always instrumental; only occasionally does it rise to science for its own sake.

If undeliverable, please return to:
Australian and New Zealand Association for the Advancement of Science
The University of Adelaide, Adelaide, SA 5005

