

THE ANZAAS MERCURY

ANZAAS: Empowering the Community with Science

∞ Issue No. 31, December 2006 ∞

Editor's Edict



In this issue we report on the issue of population pressure as a front line response to halt global extinction (ANZAAS Debate), federal government giving green light for fixing climate warming (News and Analysis) and a profile of a historic Australian scientist. Also see Victor Bien's cogent media report and Peter Toomer's exciting ANTENNA.

-Duncan Rouch

Murray's Matters

Comment From The Chair

By Mike MURRAY



Fixing Climate Warming: The Nuclear Power Option

Should nuclear power form part of the Australian government's response to reducing the hazards and risks of global climate warming? Recently two ANZAAS-Vic events presented stimulating talks to help us answer

this question.

First, has global warming really occurred and how much of a problem is it? Dr. Graeme Pearman, former Chief of the CSIRO Division of Atmospheric Research, presented the latest evidence for global warming, linked to atmospheric greenhouse gas increases, and coupled this effect to changes in climate in different regions of the world. He showed data extending back over hundreds of thousands of years, observing trends through several ice ages, and using modern sophisticated computer based climate models (each consisting of in excess of one million lines of software code). He went on to predict changes in global climates over the next one hundred years. Graeme's talk complemented Al Gore's scenario in 'An Inconvenient Truth' by concentrating on the climatic effects that might be expected

across Australia. The evidence can leave no doubt in anyone's mind that global warming is taking place and that it is driven by increasing carbon dioxide levels in the atmosphere. The evidence is very strong also that a significant portion of the present increase is closely correlated with human activity since the start of the industrial revolution, about 200 years ago. Noting this correlation, another two to three billion people in China, India, and elsewhere, now becoming industrialized, can account for the currently observed rapid rate of change of these increases – rates and levels unparalleled in any part of the fossil record. This acceleration itself will likely continue to increase until such time as **uncontrolled** uses of coal, oil, and natural gas cease to fuel our energy production.

Graeme referred to the declining ice sheets at the North Pole. Lessening ice coverage leads to more thermal absorption and warming of the ocean. Thermal expansion of the oceans would be measured in tens of centimetres rise in sea level for a rise in temperature of 3 to 5 °C. Of greater potential impact

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but of less certainty, however, would be the loss of the Greenland ice cap, which is measurably melting year by year and would raise average sea level by a mighty seven metres. At current warming rates this state of affairs is expected to occur about 1000 years from now, but possibly sooner. Perhaps of even greater impact is the melting of permafrost across Siberia. Permafrost has an approximately 80,000 year cycle in step with the glacial cycle, so that Pleistocene animals and plants caught in the freezing conditions of 40,000 years or so ago are now thawing out, decomposing, and releasing methane (20 times as effective in global warming as carbon dioxide) into the atmosphere. The effect on global warming from this source alone has the potential to dwarf the effect of current human industrial activity. The probability of this happening is not known but is unlikely to be zero. In the past 1 million years or so the concentration of atmospheric methane as measured in Antarctic ice cores has never risen above 750 ppb. Today it stands at more than double this amount (which incidentally means that atmospheric methane is responsible for a further 10% on top of the global warming presently attributed to atmospheric carbon dioxide.)

Graeme explained that there are other plausible futures of very significant impact for which the probability of occurrence is either low or unknown. He emphasised that risk assessment (the product of the magnitude of impact and the likelihood of occurrence) remains paramount in planning for the future.

The problem we face is that whilst the fossil record suggests that glacial cycles have exhibited a steady frequency and amplitude over hundreds of thousands of years related to the precession of the Earth's axis, present measurements are showing a singular change in pattern. It begins to look as though the burning of fossil fuels (which would otherwise remain in the ground taking no part in the glacial cycles) is acting not only to warm the atmosphere but also as a trigger to hasten other greater contributory sources of global warming; positive feedback loops that we need to understand well in order (a) to control the warming and/or (b) to defend against its worst consequences.

...Continued page 6.

Scientist at War

Ernst Johannes Hartung (1893 – 1979)

Ernst Johannes Hartung was Professor of Chemistry at the University of Melbourne, and was an enthusiastic and dedicated chemist. During the Second World War he was Chairman of the Advisory Committee on Optical Materials, a sub-section of the Optical Munitions Panel in charge of figuring out how to produce optical glass in Australia. Optical glass was used for optical instruments, such as binoculars, spectacles, lenses, prisms, telescopes, and microscopes. It had to be absolutely flawless, completely transparent and able to be ground into shape. His contribution towards the success of the Panel was invaluable.

In 1940, T.H. Laby asked Hartung if he could make optical glass; he replied, 'I don't see any reason why not. It is a very big place and we ought to get sufficiently pure sand.' (1)

Hartung then travelled to Sydney to hold initial discussions with the technical staff of Australian Consolidated Industries (ACI). In his first report to the Panel (September 1940). Hartung wrote :

"I visited Sydney from August 26th - 28th last ... I was very much impressed by the keenness and enthusiasm of staff and operatives alike, coupled also with a lively appreciation of the difficulties of the problem ... I am glad to be able to state that as the result of our discussions, and a careful analysis of available data, preliminary work is now in full swing at the glass works in Sydney, and also in the Chemistry Department of the University of Melbourne. Close co-operation on the problem will take place in the future between these institutions." (2)

This indeed was the case. Hartung and ACI worked in conjunction to produce the first optical glass in Australia, and Hartung presented the Panel with the first-ever sample of Australian-made optical glass in December 1940. On 21 September 1941, ACI 'produced the first large-scale batch of

optical glass ever made in Australia'.(3) - a truly remarkable achievement!

When Hartung opened up his first satisfactory crucible of glass he rang me at home at midnight. Working hours didn't seem to worry anybody. - Sir Lawrence Hartnett (4)

Hartung also built a small experimental, gas-fired furnace in his laboratory at the University of Melbourne. He used this to undertake valuable optical glass experiments, including the testing of different refractory clays and raw materials.

Another of Hartung's interests was astronomy. After the war, he established an observatory at his home in Mount Macedon, Victoria. He also wrote a book on the southern skies for observers. Hartung retired in 1953. After his death in 1979, his 12 inch telescope and observation hut were relocated to the roof of the Physics Department at Monash University.



February 1941. E.J. Hartung (L) discusses experimental optical glass with Mr Ampt (R) before an analysis of its and clay pot composition. *Australian War Memorial Negative No. 6054. bv E.L. Cranstone.*

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- (2) J.S. Rogers, The History of the Optical Munitions Panel: July 1940 - December 1946, Australian Archives, Brighton, Melbourne, MP 730/11, Box 3, p. 47.
- (3) D.P. Mellor (1958), 'Optical Munitions', Australia in the War of 1939-1945: The Role of Science and Industry, ch. 12, series 4: civil, vol. 5, Australian War Memorial, Canberra, p. 257.
- (4) Sir Lawrence Hartnett (1985), 'Recollections of the Optical Munitions Panel in Australia', Australian Physicist, vol. 22, May, pp. 158-60; with notes by H.C. Bolton, p. 159.

'Recollections of the Optical Munitions Panel in Australia', Australian Physicist, vol. 22, May, pp. 158-60; with notes by H.C. Bolton, p. 159.

Source:

<http://www.asap.unimelb.edu.au/bsparcs/exhib/omp/people/hartung.htm>

The ANZAAS Debate - Population Pressure: Act Now or Face Global Extinction?

In the last issue Norman Myers summarized the top eight problems the world faces. Here he focusses on problem number one, population pressure, a contributing cause to all other seven issues.

"War is often thought of in terms of military conflict, or even annihilation. But there is a growing awareness that an equal danger might be chaos-as the result of environmental catastrophes, mass hunger, economic disaster, and terrorism. So we should not think only of reducing the traditional threats to peace, but also of the need for change from chaos to order."
Willy Brandt, former Chancellor of Germany, 1986

The Chinese tell of a mythical war (during the Cold War era) when Russia invaded China. In the first day, the Russians took one million Chinese prisoners. Russia asked China "Do you give up?". Answer, "No." On the second day Russia took two million prisoners. Same question, same answer. On the third day, Russia took five million prisoners. The Russian asked, "Do you give up now?" The Chinese replied, "No-do you?"

We are living in the biggest population explosion in human

history. Many readers of this article are going to witness the global mass of humankind surge from 6.3 billion today to almost 8 billion within the next two decades. The population of the world will most likely triple-or more-in our lifetime. When I was born the global total was little over 2 billion and it took all of

33 years to add another 1 billion, whereas today, with 6.4 billion, we produce another 1 billion in approximately 12 years.

One billion. We are so accustomed to bandying around that figure that we become blasé about what it means. To visualize how large a number that is, consider that a typical American football field has roughly one quarter of a billion blades of grass. Thus the world's present population equals 25 football fields of grass, and the U.S. population equals over one football field.

But we must bear in mind that an additional 82 million per year adds up to another 1 billion in just 12 years, yet a pile of detailed studies show that today's world total of 6.4 billion is way more than the Earth can support indefinitely. What we need, as a minimum, is an annual population growth of zero (many experts even believe we should consider shrinking the world's population). Plainly we have a long way to go, and the population explosion remains almost as explosive as ever.

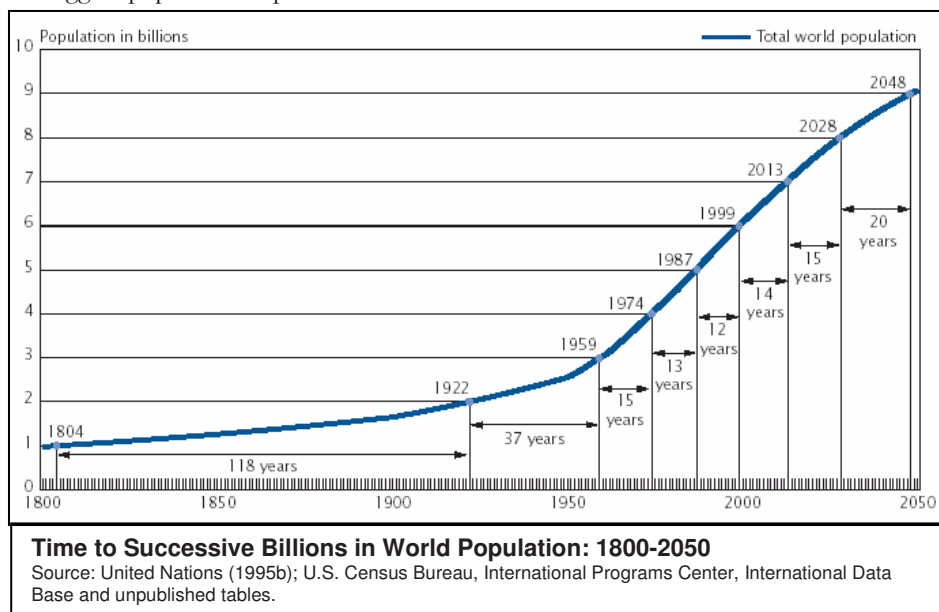
Population Pressures

In more cases than not, countries with rapid population growth feature slow per-capita economic advance, stagnating per-capita food production, over-extended social services, over-exploited resources, and slower development than those countries that have stabilized their population or have a slow growth rate. The rapid population growth countries also tend to be those that feature the most civil strife. The countries in question include many in Sub-Saharan Africa, the Middle East and Southern Asia, ones with the worst track records in both environment and development and with the highest population growth rates.

So great are the stresses generated by too many people making too many demands on their environments, that the pressures create a first-rate breeding ground for pushings and shovings. This conflict can be expressed in two ways. First, there can be social dislocations and political upheavals within countries, notably civil disorders, riots, insurgencies, even revolution.

Second, there can be confrontation with neighboring countries, ranging from political tension to outright hostilities.

Let's be careful not to over-state the case. The relationship between population and conflict is rarely causative in direct and exclusive



fashion. It would be simplistic to assert that more people must mean more conflict. But in many instances, we can see that conflict would not arise so readily, nor would it prove so severe, if the associated factor of population growth were occurring at a more manageable rate.

Population & Conflict Linkages

One illustration of the population/conflict linkage arose in the case of Ethiopia in the early 1970s. The country's traditional farming area of the highlands was losing huge amounts of topsoil per year. This erosion was due partly to rudimentary agricultural practices, partly to inequitable land-tenure systems, and partly to the pressures generated by a population that had more than doubled during just the two decades 1950-1970. The results included a marked fall-off in agricultural production with food shortages in cities, and with ensuing disorders that precipitated the overthrow of Emperor Haile Selassie in 1974. The new Dergue regime did not do enough to restore agriculture. For this reason among others, throngs of

famished peasants started to stream into the country's lowlands, including the Ogaden region bordering Somalia. In Somalia too, steadily increasing human numbers, together with inefficient agriculture, had led to much over-taxing of traditional farmlands. For these reasons, there was a migration into the Ogaden from the Somalia side as well. The result was a clash between the two sides, and the start of outright war in 1977.

A second illustration lies with El Salvador. It is not only the most unstable country politically in Central America, but it endures the worst population pressures. True, the so-called Soccer War in 1969 with neighboring Honduras broke out not only because of population increase itself, but because the most disadvantaged segments of the population—those that were also growing in numbers the most rapidly—found themselves denied access to natural resources, notably agricultural land as a result of the nation's oppressive government. Yet the scope for strife would not have grown so severe if the population had not been one of the fastest growing in the world, trying to subsist in landscapes where water supplies were declining, soil erosion was widespread, and forests had become a matter of history. This combination

of problems caused one tenth of El Salvador's citizenry to take up residence in neighboring Honduras, where they constituted a prime cause of the outbreak of hostilities.

\$90 Billion Compared to \$17 Billion

Note the costs of the Iraq war, \$90 billion, not counting the greater costs of undoing the war's damages. Then recall the price of supplying family planning facilities to the millions of developing-world couples who want no more children but lack the birth-control wherewithal to put that wish into practice. A grand scale family planning program budget of \$17 billion per year was agreed upon by the world's governments in 1994. The developing countries have paid the great bulk of their two-thirds share, but the rich countries have regularly protested they have never been poorer and they have largely failed to pay their full whack—less than half in 2000. The most dismal back slider has been, guess who, the United States, even though the program's cost for an American taxpayer would be the same as a beer every two months. Were all countries to meet their commitments, we would likely reduce the ultimate global population by fully one billion people. There would be a further payoff: everybody would be enabled to have as many or as few children as they wish (declared a basic human right 35 years ago), and there would be fewer unwanted births and fewer abortions. We would come out ahead on several fronts.

Genuine Lasting Security

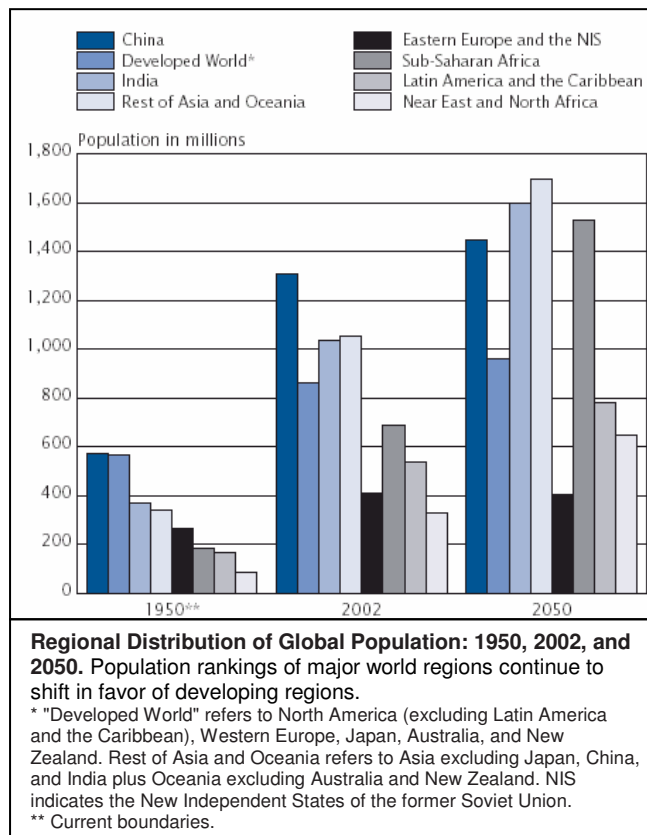
Many population and environment problems spring to mind, all of them reflecting population pressures to some degree. They include topsoil loss, spreading deserts, shrinking forests,

large-scale pollution and global warming. They are all, ultimately, security threats. We cannot respond to these new security threats through old-fashioned measures. We cannot resist an advancing desert by sending tanks to stem it. We cannot halt soil erosion by bombing it. We cannot stop acid rain with infantry. We cannot drive back global warming by launching missiles at it.

All in all, then, national security is no longer about fighting force and weaponry alone. It relates increasingly to population, also watersheds, croplands, forests, climate, and other factors rarely considered by military experts and political leaders, but that, taken together, deserve to be viewed equally as crucial to a nation's security as military prowess. The situation is epitomized by the leader who proclaims he will not permit one square meter of national territory to be ceded to a foreign invader, while allowing hundreds of square kilometers of topsoil to be eroded away each year.

Reasons for Blindness

Yet however much this is a built-in facet of our new 21st century world, we have yet to mobilize the political collaboration to reflect population pressure. So what gives? Why the silence on population growth? Here's an



assessment of what might lie behind it all.

- 1) **Many people do not understand population growth.** Many are simply unaware of what's what. Even university students seem blissfully unaware of how many people they will have to share the world with, according to a recent survey.
- 2) **Many people consider that the population problem is over.** After all, the average family size (technically speaking, around the same as the number of children born to women of reproductive age) plunged from 4.5 in 1970 to 2.8 in 2003—an even bigger drop than the experts predicted. But we must bear in mind that an additional 82 million per year adds up to another 1 billion in just 12 years.
- 3) **Controversial nature of family planning.** Certain right-wing conservative religious organizations and persons are inclined to see population planning as a disguised way to promote effective forms of family planning, when they believe, "only abstinence will do".
- 4) **The immigration factor.** Of the United States' annual population growth rate of 1.1% (the rest of the developed nations' average is 0.1%), roughly half is due directly to immigration. Most of this half is made up of Hispanics—so if you are against immigration, you are automatically reckoned to be racist. This slithery assessment says much more about the critics than the immigrants. So this issue acts as a huge blockage in the way of public debate on population in the United States.

This is also one of the most regrettable reasons of all why many environmental groups have taken to ignoring population altogether. They do this for all manner of reasons—or rather, excuses. "It will upset some of our major donors." "Let's leave it to the population groups." "Yes, population is still important, and we may take another look at it next year."

Conclusion

We simply do not recognize population growth as a strict fact of life. Nor will the changed outlook come easily. The two most important features of our new world have nothing to do with conventional politics or economics, least of all with military strategies. These two features are, first, that no country can support an indefinite increase either in its number of people or in its consumption of environmental resources, let alone both; and second, that most mainstream policies of most governments assume that, on the contrary, it can.

Further reading

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News And Analysis



What a difference an economist makes!

By Paul ADAM

The response of most politicians and media commentators to the release of Stern report represented a remarkable change in sentiment. Suddenly there was serious discussion of the measures which might be needed to combat global warming, and the sceptics, at least temporarily, were silent. Suddenly there was serious discussion of the measures which might be needed to combat global warming, and the sceptics, at least temporarily, were silent. Leading economists obviously have more clout than the collective weight of scientists.

The arguments that had previously been advanced against considering the need to take action have included that change is the normal state of climate, and there is no proof that any of the climate extremes experienced in recent years are outside the expected range, that if the climate change models are right then there will be winners as well as losers and, overall, warming is better than a return to an ice age, and that increased carbon dioxide concentrations are good for plants.

The evidence of past climate change is uncontested, and we cannot be certain that recent climatic events are not part of 'ordinary' fluctuations. Nevertheless there are indications of possible trends, which are not incompatible with credible models of how climate should change in response to increased greenhouse gases. Even if recent climate extremes are 'normal' they highlight the increasing vulnerability of human society to such events. As the human population continues to grow and become more urbanized (particularly, in Australia and globally, in the coastal zone) the impacts of drought and storms affect more people and infrastructure more severely. Even though humans have experienced many climatic extreme events (and other catastrophic events like earthquakes) the effects now and in the future are both quantitatively and qualitatively different.

To argue that we've survived in the past so "she'll be right" for the future continues the complacency which at least in part is responsible for the dire situation we are currently in. Planning and management for the future must take the occurrence of extreme events into account, and in so doing it

would seem prudent to incorporate climate change predictions as added insurance.

Climate change scenarios predict changes in a number of parameters, although there is much greater uncertainty about changes in some factors than others. Nevertheless it does seem reasonable to anticipate that there will be some regions where growing conditions will be improved (in terms of rainfall and temperature). To that extent there will be winners and losers – but that does not mean that win and losses will balance themselves out – and if the winners and losers are on opposite sides of international boundaries there could be serious international instability and potential conflict.

The one thing about which there are no grounds for dispute is that the carbon dioxide concentration in the atmosphere is increasing, but there is evidence from the geological record of periods with even higher levels. However, what makes the current increase different from any proceeding it is that it is clearly related to anthropogenic releases from the burning of fossil fuels. Regardless of origin, surely an increase in carbon dioxide will improve plant growth? After all increasing the carbon dioxide concentrations inside many commercial greenhouses to improve yield has been practiced for many years. However, different plant species are likely to respond differently to changes in carbon dioxide, depending on their photosynthetic system. Increasing carbon dioxide will not simply result in increased productivity; rather, in combination with changed temperatures and water availability there are likely to be complex changes in the relative competitive ability of species, leading to substantial change to the composition of vegetation. Some of these changes might be considered 'good', others not, but prediction of which species are going to rise to the top of competitive heap will be difficult.

Over geological time the present period may be a minor blip, but human society doesn't operate at this time scale. One could take the Gaian view that the planet will continue even if humans don't but for the present the needs of human society will determine the political systems that govern us, and politicians will need to respond to the challenge of a changing world.

Few aspects of life will be unaffected, and the challenges and opportunities for science to understand the global climate system in for more detail and to provide politicians with options for management are great. Certainly there will be many areas of disagreement, and occasions for robust debate. Some of our current understandings will undoubtedly require modifications, but I would hope that some of the sterile debate

of recent years can be set aside in favour of more productive discussion.

Fixing Climate Warming: The Nuclear Power Option

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Solutions?

Climatologists today generally (indeed overwhelmingly) assert the optimistic scenario that we can release the pressure on this atmospheric trigger by reducing the contribution to carbon dioxide emissions from human activities and thus avoid the most serious consequences of global warming and climate change. But what if we are already past the point of no return; the point of instability? If this were the case we might better continue to burn fossil fuels with impunity but put considerable resources into planning for the inevitable climatic extremes. Scientists are thus strongly advocating policies directed at both adaptation and mitigation.

In the optimistic case we turn to atmospherically clean energy production augmented with energy saving. Energy saving is most important since it is extremely effective in reducing carbon dioxide emissions, is the fastest acting of all the means to do so at our disposal and in many cases, domestic, industrial and commercial can be accomplished with positive economic gains or at least low cost and early returns on investment. We need more though. Ultimately human generated carbon dioxide emissions into the atmosphere may have to be eliminated. Sustainable electric power can be generated in several ways; tidal, wave, wind, and solar, all of which are intermittent and not useful for base load electricity production; hydro, which is limited to mountainous regions; biomass which takes up good agricultural land needed for food production; geothermal, which is geologically site dependent; and coal combined with potentially expensive processes of carbon dioxide separation and geologically complex sequestration. The technical feasibility and hence the economics of sequestration are not yet evaluated and moreover, suitable underground repositories do not exist everywhere. With respect to ground transport we shall have to replace oil and natural gas with battery packs and/or hydrogen fuel. There is a hope that flight (now a major and increasing contributor to atmospheric greenhouse pollution) might be powered by hydrogen fuel also.

Nuclear Power Option?

Professor Tony Klein, Department of Physics, University of Melbourne, presented the case for the introduction of nuclear power to Australia, and increased use in other countries, to provide future base load of electricity generation.

Against the background of the above expected climate change scenario it appears to many of us that Australians should take a new look at nuclear power as a lesser future existential threat to us than the continued uncontrolled burning of fossil fuels. While we should adopt a conservation approach to power usage we should not equate such behaviour with a reduction of our overall standard of living. Indeed contemporary climate change mitigation models are based on the basis of continued economic growth. In the new era, relativities are changing. Nuclear power production is now a mature technology which has been greatly developed over the last 50 years and will be seen in relative terms to be safe. New technologies will reduce nuclear waste, and in any case the

relatively small amount of waste and its thorough encapsulation will make storage in geologically stable sites (*relatively*) safe. Enrichment of uranium and treatment of nuclear waste for terrorist or criminal purposes would all take such great organisation that it is inconceivable that such clandestine work could go undetected; the more especially in the new global order of controlled National and International safety codes and inspections which are being, and will continue to be, established worldwide.

Safety of Nuclear Power

The World's worst nuclear disaster at Chernobyl (April 1986), according to a United Nations (UNSCEAR) report, was the direct cause of forty deaths. There were 1800 cases of thyroid cancer in children exposed to radiation at the time. These cases could all have been avoided by timely administration of iodine pills, but in fact nearly all were later cured. At the height of the scare it was being reported, quite falsely, that the death toll would be of the order of 250,000. It has since been reported however that the widespread alarm following the disaster resulted in about 50,000 needless abortions in Europe from fear of genetic disorders. We now know that what happened at Chernobyl was a steam explosion, not a nuclear explosion, although with massive release of radioactive fission products. We also know that the reactor safety designs were inadequate, there was no specially designed containment building enveloping the reactor (as is standard in all Western designs - the effectiveness of which was evident at the Three Mile Island accident in 1979 where no deaths occurred), and the operators on duty had not been adequately trained.

Nuclear power production today is as safe as houses – in fact statistically far more so in a cumulative sense. In terms of cumulative deaths and injuries it's certainly safer than venturing onto the roads and it's even safer than flying in aeroplanes. Were it not for climate change the economics of cheap coal would rule out nuclear power as a viable economic proposition for Australia.

Nuclear Power Overseas

Japan, the very country which has reason to fear nuclear energy more than any other, has many operating nuclear power plants. China, a country which has many deaths from coal mining accidents, has a huge programme of nuclear power station construction. France produces 78% of its electricity from nuclear power, and no accidents involving release of radioactivity have been reported (incidentally the balance of French electricity production is from hydropower). After Chernobyl, neighbouring Sweden abandoned its nuclear programme, but today it is once again following a nuclear energy course. After many years of abstinence the UK is planning to build nuclear power stations, firstly for economic reasons as its coal seams become more expensive to mine and lately with an eye on greenhouse gas abatement.

Nuclear Power For Australia?

We must be ready for global warming and climate change to alter the economics of fuel and energy in Australia. Maybe in fifty years nuclear power reactors will take their place amongst the other sustainable power generators dotted around the East and South coasts of Australia providing desalinated water to communities otherwise short of water, providing base load power to the cities, and thermally dissociating water for hydrogen production to fuel our transport. Maybe further into the future we may even find economic uses for our nuclear waste repositories! As Tony Klein so aptly concluded, "I am not advocating nuclear power, I am predicting it."

Further reading

Al Gore et al, (2006) *An Inconvenient Truth* – See the film or read the book published by Bloomsbury Publishing PLC. The consensus of leading climate scientists is that the subject matter is a fair assessment of the climatic facts.

The Stern Review (2006) *Economics of Climate Change* – commissioned by the UK Government, http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Professor Martin Sevier et al, <http://www.nuclearinfo.net> - This website is a welcome attempt to strip away the myths and fallacies of the 'Nuclear Debate' and provide a

scientific examination based on factual evidence. The site has good links to the most authoritative of sources.

Switkowski Report (2006) *Uranium Mining, Processing and Nuclear Energy (UMPNER)*– Commissioned by the Federal Government of Australia .

Disclaimer

I have drawn upon data presented in the ANZAAS-Vic talks by Professor Klein and Dr. Pearman. They may or may not agree with the scenarios I have suggested. Also any bias is mine and should not be attributed to ANZAAS. At this point of time ANZAAS has no adopted policy on the issues of climate change or nuclear power.

ANZAAS Mercury Submission Guidelines 2007

Duncan Rouch
28-11-06

The editor is happy to receive any attempts from members in writing articles of the types shown below. Do not worry about having perfect articles, the subeditor will fix any problems, so why not have a go! If you have any questions about writing articles feel free to contact me, at the e-mail address shown below.

Happy writing

Duncan Rouch
Honorary Editor
Newsletter_editor@anzaas.org.au

Types of Articles

ANZAAS activities

- Writer: reporter member of an ANZAAS divisional committee
- Content: any ANZAAS activity (all activities must be newsworthy), including Youth ANZAAS, ANZAAS medals' seminars, ANZAAS conferences
- Style: as news stories, see below
- Length: 250-800 words

News articles

- Writer: any ANZAAS member, including Paul Adam Immediate-past Chair
- Content: about any science-based issues in the community, such as; environment, biodiversity, sustainability (water, climate, energy, land resources), health, and Genetically Modified Organisms (GMO).
- Style: newsworthy, including answers of Who? When? What? How?
- If possible please include a digital photograph
- Length: 250-800 words

Letters

- Writer: any ANZAAS member
- Content: about any ANZAAS issues or science-based issues in the community
Style: cogent argument
Length: 250-400 words

Book reviews

Writer: any ANZAAS member
Content: review of any book about Australian science research or education, or national/international science-based issues in the community
Style: lively
Length: 400-500 words

ANZAAS Debate

Writer: any ANZAAS member, or invited non-member. First discuss your plan with the Honorary Editor, before writing the essay.
Content: any controversial or current science-based issues in the community
Style: lucid essay report with relevant photographs, diagrams or graphs
Length: 800-1,300 words

Australian Scientist profile

Writer: Honorary Editor
Content: selected biographical stories of scientists, e.g. from the Bright Sparks database
Style: historical news report
Length: 400-600 words

Chair report

Writer: Chair
Content: about ANZAAS and/or science-based issues in the community, including government policy
Style: clear academic argument
Length: 500-800 words

Media report

Writer: Victor Bien
Content: comment on science in the media
Style: conversational
Length: 300-500 words

Media Report

By Victor BIEN

Television (and Government) Take Science Seriously



Shortly after writing the last report John Howard and other Coalitions MPs back flipped over climate change. Over the course of only a few weeks they went from saying the movie "Inconvenient Truth" was "just a movie" which "naturally dramatises things to make it interesting", or words to that effect, to at last acknowledging

that climate change is possibly responsible for the record drought coupled with record month after month of dryness and relative high temperatures. They were forced to recognise the truth only when the hip pocket nerves of their constituents were shocked. The economic life of many farmers is finished. This kind of pain and suffering which scientists have been warning about so that human intelligence can be used to avoid them just fell on deaf ears for decades. Only when collapse is imminent will the lack of foresight mentality recognise the truth. At this writing there is a summit to be held to address the Murray Darling rivers crisis, which is unlikely to have as much flow again as society has become accustomed to.

On Sunday nights over a considerable period SBS and the ABC having vying each other with "must watch" science and other programs, so much so that in order to not miss a

program I have had to resort to taping one of the programs while watching another. Programs in the 8:30 PM time slot over the past quarter included: The Doctor Who makes People Walk Again?; Bye bye Pluto; Can Dogs Smell Cancer?; Most of the Our Universe is Missing; The Lost City of New Orleans.

I found the program Can Dogs Smell Cancer? particularly stimulating, awe inspiring even. There is the prospect that some of our humble domestic breeds may, in the not too distant future, become a regular clinical tool for the early detection of various cancers. The program finished with the remark that the phrase "man's best friend" may have far more meaning that we ever could have imagined!

The program was largely about the difficulty of establishing a Kuhnian paradigm shift. The protagonist scientists had to overcome much ridicule and incredulity. This was an excellent program showing the very human side of scientific endeavour. With much persistence the researchers succeeded in getting

funding to do the double blind trials and then publish the results in leading peer reviewed journals. Needless to say the papers created sensations! The program focussed on one particular team to tell the human story but there was at least one other group on the same trail. Not all was plain sailing. While on some crucial occasions, to establish the credibility that the research was worth doing and so win funding, the selected dog performed

flawlessly but the program showed that there were occasions when the dog failed to perform as it should, i.e. it was getting the wrong answers! Clearly before dogs can be used in a clinical setting they have to perform nearly 100% on all occasions. The researchers recognised that significant more work had to be done.

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