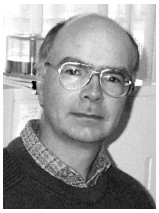
THE ANZAAS MERCURY

ANZAAS: Empowering the Community with Science

Issue No. 24, March 2005

Editor's Edict



Please enjoy this issue with news about S&T issues. In **ANZAAS Debate** we look at 'Is Pseudoscience Good For Your Diet?' We also present news from ANZAAS and other interesting topics. We apologize for the missing ANTENNA, due to technical problems in the editor's office.

-Duncan Rouch

Adam's Airing

Comment From The Chair
By Paul ADAM

Department Closures

Reading the *Australian Higher Education* supplement or the *Times Higher Education Supplement is* an increasingly depressing experience, with each week bringing new reports of the closure, threatened closure or (more rarely) last minute reprieve, of more university departments in the UK. Those under threat span a range of disciplines, not just sciences, but the science departments scheduled for closure include some with long histories and high reputations for both teaching and research. Similar threats have also emerged in Australia.

One of the disciplines which is under threat internationally is physics. This is ironic given that it is the first discipline to be awarded its own 'year' (2005 is the International Year of Physics, and also the centenary of the *annus mirabilis* in which Einstein published his most influential discoveries). Despite declining numbers of high school students undertaking study of physics up to year 12, and hence declining tertiary enrolments the scope and opportunities for physics are great. Australian universities, and institutions like CSIRO, are very active centers of physics research, and world leaders in many areas, but this activity will not be sustainable in the longer term if there is no next generation of physicists. Although the 21st century is likely to be a century dominated by biology in its many forms there is a clear need to maintain vibrant schools of physics and chemistry, and to promote interdisciplinary links between the enabling and emerging sciences. The rhetoric in support of such concepts is there – the willingness to convert words into action is much less apparent.

ANZAAS has, in various submissions over recent years, recognized that change is inevitable but has also stressed the importance of maintaining the diversity of science and urged that there be co-ordination and long term planning in any reorganization.

Federal Leadership Failure

In neither Australia nor the UK has this planning occurred. Given that in both countries higher education is largely a public function and likely to remain so governments have failed to articulate a vision of the role of universities. In both

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ANZAAS

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countries there has been a considerable expansion of the university system, in Australia as a consequence of the Dawkins 'reforms'. To some extent this has increased the diversity of offerings, but largely has resulted in greater uniformity and a trend to increasing mediocrity (although this would be denied by both governments and institutions).

University systems have grown like topsy, but to what end? Viewed cynically it would appear that one of the main drivers for encouraging greater tertiary enrolments is to increase the number of graduates so as to improve national standing in OECD comparisons. With few exceptions (medical and related disciplines) there has been little attempt to direct enrolments. Instead enrolments have been driven by market forces, with entry levels determined by expectations of graduate incomes and lifestyle. In consequence the most sought after degrees are in medicine, law and commerce and most science degrees have much lower admission levels.

There is little doubt that our changing world demands a more highly skilled workforce, and that training and education beyond school years will be increasingly important. Whether this need has to met by completion of a standard three or four year undergraduate degree is questionable. The Federal government has flagged strengthening of the TAFE system as one of its priorities for its current term. For universities there is likely to be greater call for short courses for graduates to update their skills, and changes to the HECS system may facilitate this. However, there has been little debate as to the appropriate structure of basic undergraduate degrees – should they be broader (on the American liberal arts model) or should they be more vocationally oriented? Should the standard expectation be for a four, rather than a three year degree? Importantly, what range of disciplines will be supported, and how will the national interest in maintaining particular skills be addressed this interest is much wider than the sciences, as recent discussion about the declining ability to support a range of languages in universities has demonstrated.

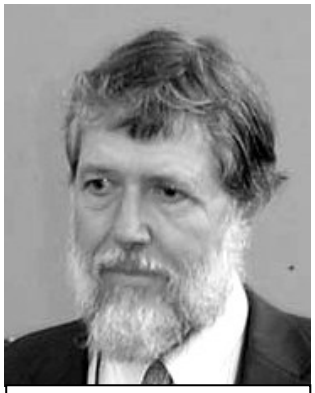
Ad hoc Management?

Recent rumours suggest an increasing desire by the Federal Minister to micromanage universities and the possibility that he may intervene to prevent the closure of courses. If any intervention were based on agreed national priorities, and were accompanied by the necessary funding, it should be supported, but if it were to be merely *ad hoc* responses, with no funding to assist institutions maintain what are, under existing funding models, unsustainable programs then there will be very serious problems for many universities.

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

ANZAAS News

ANZAAS Medal Presented to Professor David Blair



Professor David Blair
Photo: Robert Perrin

His Excellency Major General Michael Jeffery, AC CVO MC (Retd) Governor-General of the Commonwealth of Australia and Patron of ANZAAS, has presented Professor David G. Blair of the University of Western Australia with the 2005 ANZAAS Medal for his work on the detection of gravity waves The presentation ceremony took place on WEDNESDAY 2nd FEBRUARY in Llewellyn Hall at the Australian National University Present at the ceremony were Nobel Physics Laureates Anthony J. Leggett [2003] and Stephen Chu [1997]. The presentation ceremony was part of the Australian Institute of Physics 16th Congress. Representing ANZAAS were Curtis Clarke (Chair ANZAAS WA) and Paul Adam (Chair ANZAAS).

Galaxy of Stars: L to R: Curtis Clarke, Anthony Leggett, Paul Adam, David Blair, Stephen Chu. *Photo: Robert Perrin*

THE MEDAL CITATION

In recognition of his outstanding contribution to world science through his pioneering research work on gravity waves, the Council of the Australian and New Zealand Association for the Advancement of Science [ANZAAS] has awarded the 2005 ANZAAS Medal to Professor David G. Blair. Professor Blair, from the School of Physics at the University of Western Australia, is a high profile scientist who has researched gravity waves for more than 25 years.

Gravity waves were predicted by Einstein's General Theory of Relativity, first published in 1915. This research has led to the development of the world's most accurate clock and to the development of a new form of astronomy - gravitational wave astronomy - the spectrum of which is awaiting discovery. When harnessed, gravitational waves will offer a powerful new probe of the universe.

This research has received much media attention and captured the imagination of the public at large.

Professor Blair is Director of the Australian International Gravitational Research Centre at Gingin, approximately 80 km north-east of Perth, in Western Australia. The Centre involves collaboration between Australian and international scientists and incorporates one of the largest astronomy centres in the southern hemisphere, the Australian International Gravitation Observatory.

The public arm of the Observatory is the Gravity Discovery Centre which features science education and tourist displays designed to stimulate and enhance interest in science.

Professor David Blair's commitments to the advancement of science and to the promotion of science for secondary and tertiary students make him an outstanding role model for young and aspiring scientists and a worthy recipient of the ANZAAS Medal in 2005.

The ANZAAS Debate - Is Pseudoscience Good For Your Diet?

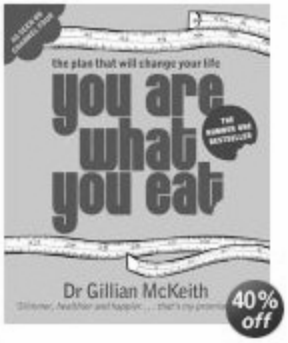
To help us deal with the never ending array of new diets Chris Forbes-Ewan has dived into the murky soup of food diet's pseudoscience. He has manfully returned to the shore to show us why pseudo-scientists have attracted many people, and why their views are dangerous. Enjoy Chris's essay without your diet taking off in wrong directions or your wallet getting lighter.

Are you aware of the notion that "one of the most alarming studies by medical researchers found that a diet full of cooked foods may cause the reduction of brain tissue and the swelling of the key organs"? Or that "the sexiest food of all is … according to German research, raw sauerkraut …. Watch your lovemaking antics soar once you start eating raw sauerkraut twice a day!" And I'm even prepared to bet that you were unaware that "refining and bleaching (of pasta) destroys … up to 90% of the mineral content" and that pasta "contains inorganic iron, which can accumulate in the body (inorganic iron depletes other good vitamins)."

I didn't know these, or a whole host of other interesting 'facts', until I read You Are What You Eat by Gillian McKeith, published by Penguin Books (Michael Joseph publisher) and also produced as a television series (broadcast by the Nine Network in Australia late last year).

McKeith claims the title 'Doctor', but Ben Goldacre—who writes the UK's Guardian newspaper's Bad Science column—points out that:

"Gillian McKeith got her PhD from a non-accredited correspondence school in America and has never published any properly evaluated scientific research. She is proud to announce under "Professional Associations" that she is a certified member of the American Association of Nutritional Consultants (AANC), which certainly sounds impressive. I bet you get a little certificate and everything. In fact, I know you get a certificate, because I'm holding it in my hand right now. It's in the name of my cat, Henrietta. I got it in return for $60, and it's a particular honour since dear, sweet little Hettie died about a year ago."



McKeith's book is replete with … unscientific nutritional/medical concepts (40 % less science!).
Photo source: Amazon.com

So much for her qualifications, what about the science in McKeith's book? Well I should mention a caveat at this point: I attempted "Dr Gillian's Food Intelligence (Quotient) Test" and scored either 6 or 7 (I honestly can't remember whether or not I was breast-fed as a child) of a possible 20 correct answers. According to McKeith, anyone who scores 11 or less is "flunking it".

One of the questions I 'failed' was: "Do you drink at least eight glasses of filtered, spring, or mineral water every day". My answer was no, while the 'correct' answer was yes. Yet, several years ago, when I put a similar question to the Nutritionists Network ('Nut-Net')—an email discussion list with about 500 nutritionists/dietitians as subscribers—not one nutritionist could see any point in drinking at least eight glasses of water every day. Nut-Net came to a consensus position on this in the form of one of the 'frequently asked questions' (FAQs) available through the Nutrition Australia website, <www.nutritionaustralia.org>. The direct URL for the FAQ addressing fluid requirements is:

http://www.nutritionaustralia.org/Food_Facts/FAQ/optimal_hydration_faq.asp

Similarly, McKeith's belief that you should "drink water approximately 25 minutes before eating your main meals, instead of drinking with meals" (another question I 'flunked') is not supported by Nut-Net:

http://www.nutritionaustralia.org/Food_Facts/FAQ/drinks_meals2_faq.asp

In fact, many of McKeith's beliefs, such as the one described in the first paragraph of this article—that eating cooked foods leads to brain shrinkage—are perhaps most appropriately (or euphemistically) described as 'unscientific', while her idea that cooking somehow destroys 90% of the food's minerals implies that metals are heat labile. If this were so, the cooking instruments we use, many of which contain metal, or are made exclusively from metal, should themselves be destroyed when first used.

Far from harming people, or reducing the nutritional value of food, cooking makes many foods (especially starchy plant foods) easier to digest: have you ever tried to eat raw potato or grains of wheat? It also renders some otherwise toxic foods edible. For example, beans—which contain heat-labile toxins known as 'lectins'—are very nutritious, but are unsafe to eat in large quantities unless they have been cooked (thereby destroying the lectins). Cooking can also release beneficial chemicals in some foods. For example, lycopene—an antioxidant that is strongly associated with improved health—is present in larger quantities in tomato paste, tomato sauce and other cooked forms of tomato than in the fresh fruit.

Also McKeith's wild claim that "inorganic iron depletes other good vitamins" is not only incorrect, it wrongly implies that 'iron' is a 'vitamin'—it is actually a mineral.

Occasionally her ideas accord with orthodox nutritional science. She is correct in her belief that "a diet high in fat (particularly saturated fat) and high in salt is associated with increased risk of coronary heart disease", and also that "carrying excess weight doesn't just increase the risk of heart disease, diabetes, cancer and infertility, it is also associated with fatigue, low self-esteem and poor mental and physical performance." She also appropriately advocates eating more whole-grain cereals, fruits and vegetables, and she recommends moderately-vigorous physical activity.

But for the most part 'Dr' McKeith is astonishingly ignorant of basic nutritional and medical science. So, although she advocates eating fresh fruits and vegetables, she claims that cooking them "destroys all the life-enhancing enzymes", which she believes are "the life force of food and help the digestion process." This is not correct: enzymes in raw foods are treated by the digestive system in the same way as proteins generally. They are denatured in the acid environment of the stomach and then digested into their constituent amino acids by the digestive enzymes we produce in our stomach and pancreas. These amino acids are then absorbed from the small intestine and transported in the blood to wherever they are needed, so the body can reassemble them into its own proteins, including enzymes.

McKeith's book is replete with similar unscientific nutritional/medical concepts. As just two (of many) examples, she believes that "the tongue is like a window to the organs" and "pimples point to congestion or imbalances; depending on where they are situated on the body, you can tell which organ is affected."

I asked two medical doctors, whose opinions I hold in high regard, about three of her specific medical claims.

Claim 1: about your tongue

"A midline crack not reaching the tip (of the tongue) seems harmless enough but if you have one, it means you have a weak stomach and your digestion is not what it should be."

Response from a medically-qualified informant: "The fissured tongue is seen in about 5% of the population and is considered a normal variant."

Claim 2: about your tongue

"Teethmarks round the sides of the tongue are a sign of nutritional deficiency. The likelihood is that your digestion is also impaired and you have a spleen deficiency".

Response: "The term 'spleen deficiency' is completely meaningless in modern medicine. This illustrates the author performing another favourite naturopathic technique: conjoining two unrelated medical terms (in this case 'spleen' and 'deficiency') without the faintest understanding of what either term means."

Claim 3: about pimples

"Pimples on the forehead" indicate that you have problems in the intestinal area" (solution: "Give yourself regular enemas or even get a few colonics)".

Response: "Acne is one of those million dollar diseases. So much has gone into dietary factors, with little net return on any statistical basis. My dermatology book goes so far as to state, 'Acne is not caused by chocolate or fatty foods or, in fact, by any kind of food.' "

Gillian McKeith: her success has more to do with personality, persuasion and placebo effect than with science. *Photo source: amazon.com*

For those unenlightened readers who, like me, are unsure of the nature of a 'colonic', McKeith describes "colonic hydrotherapy as an enema, except that it's 40 times more powerful in terms of cleaning out the colon. The colonic hydrotherapy procedure gently sends warm, sterile water into your lower bowel and colon to assist in cleansing years of excess mucus, gas, faecal matter, pollutants, medication and toxic substances … You lie down on a comfortable table … A tube is then slightly inserted into your anus … You can usually see what is coming out." Well, there's comforting thought!

In summary, McKeith's ideas are a complex mixture of orthodox nutrition, misinterpretations of orthodox nutrition, new-age wishful thinking, Eastern (especially traditional Chinese) medicine and reflexology.

But perhaps the most important question is: 'will reading her book do more harm than good for the people who uncritically follow her advice?'

In an email message to Nut-Net, a dietitian recently wrote the following after reading McKeith's book: "What if these practitioners are offering something we don't, and getting better results for their clients as a result? Should we be reflecting on our practice and wondering why we are not receiving this level of response?"

It is a good question—dietitians and nutritionists should ask themselves why nutrition-related diseases such as obesity and type 2 diabetes mellitus are increasing at epidemic rates in Western populations at a time when we believe we know enough about nutrition to ensure that these and many other food-related diseases should be rare or non-existent in developed nations. Could it be that practitioners of unorthodox nutrition such as Gillian McKeith actually have the answers that have escaped the notice of mainstream nutritional scientists?

At face value this idea makes some sense—after all, why would patients continue to flock to people like McKeith if her advice didn't work?

My position is that the number of patients seen and books sold isn't necessarily an indication of successful treatment. In his 1980s television series "The Body in Question", Dr Jonathan Miller stated that until the late 19th century the medical profession did more harm than good. Yet for centuries doctors had apparently been respected, and had usually been summoned unhesitatingly in times of illness. Clearly, being harmed more often than not by medical practitioners prior to the late 1800s did not discourage patients from making repeat visits!

It is also true that people do not necessarily come to a particular point of view as a result of rational thought. In an article entitled "Smart People Believe Weird Things", published in the Scientific American of 12 Aug 2002, Michael Shermer argues that even "smart people believe weird things because they are skilled at defending beliefs they arrived at for non-smart reasons …. Rarely do any of us sit down before a table of facts, weigh them pro and con, and choose the most logical and rational explanation, regardless of what we previously believed … Rather, such variables as genetic predisposition, parental predilection, sibling influence, peer pressure, educational experience and life impressions all shape the personality preferences that, in conjunction with numerous social and cultural influences, lead us to our beliefs. We then sort through the body of data and select those that most confirm what we already believe, and ignore or rationalize away those that do not."

So what was (or is) the secret of success of early medical practitioners, and of present-day, self-appointed nutrition experts such as Gillian McKeith, Dr Robert Atkins and others whose advice runs counter to current orthodox nutrition?

Perhaps it is because they offer hope and claim certainty of success, while dietitians are reluctant to claim certainty because there is a reasonable chance that the patient will fail to heed the advice, or that the treatment may still not work even if the advice is heeded. If so, their success has more to do with personality, persuasion and placebo effect than with science.

And it may be that the McKeiths of the world are sometimes successful, despite their non-scientific approach—perhaps it doesn't really matter if you take spirulina and drink nettle tea while, although perhaps not simultaneously, washing your hair with camomile shampoo and swallowing hydrochloric acid tablets. Provided that you also follow her advice to increase consumption of fruits, vegetables and whole-grain cereals, and take part in moderately-vigorous activity, the outcome should still be beneficial.

Some of her advice, however, may not be quite so harmless. For example, her suggestions on how to overcome excessive urine production—"Introduce barley, wheat berries, sweet rice,

aduki beans, black beans, kidney beans, wild salmon and wild trout into your diet"—may delay a possible diagnosis of type 2 diabetes, and is therefore potentially harmful. Similarly, her unorthodox beliefs about the tongue being "the window to the organs", and that pimples in particular locations indicate specific health problems have the potential to convince gullible members of the public that they should use her 'remedies' rather than see a doctor.

But even if she does little real harm to most people, she is still raking in the money by pulling the wool over the eyes of a credulous public. In late October 2004 her book, a glossy paperback which costs ~$30, was number 7 on the best-seller list in Australia.

I think I'll put my money where it may do some good: instead of purchasing McKeith's book, I'm off to the supermarket to buy ~$30 worth of raw sauerkraut. At least it will be better eating than her book.

News And Analysis

Why are we all seeing less of the Sun?

By David SINGTON

Scientists who have been looking at five decades of sunlight measurements have reached the disturbing conclusion that the amount of solar energy reaching the Earth's surface has been gradually falling. Paradoxically, the decline in sunlight may mean that global warming is a far greater threat to society than previously thought.

Cloud changes

The effect was first spotted by Gerry Stanhill, an English scientist working in Israel. Comparing Israeli sunlight records from the 1950s with current ones, Dr Stanhill was astonished to find a large fall in solar radiation. "There was a staggering 22% drop in the sunlight, and that really amazed me." Intrigued, he searched records from all around the world, and found the same story almost everywhere he looked. Sunlight was falling by 10% over the USA, nearly 30% in parts of the former Soviet Union, and even by 16% in parts of the British Isles. Although the effect varied greatly from place to place, overall the decline amounted to one to two per cent globally every decade between the 1950s and the 1990s.

Dr Stanhill called it "global dimming", but his research, published in 2001, met a sceptical response from other scientists.

It was only recently, when his conclusions were confirmed by Australian scientists using a completely different method to estimate solar radiation, that climate scientists at last woke up to the reality of global dimming.

Dimming appears to be caused by air pollution. Burning coal, oil and wood, whether in cars, power stations or cooking fires, produces not only invisible carbon dioxide - the principal greenhouse gas responsible for global warming - but also tiny airborne particles of soot, ash, sulphur compounds and other pollutants.

This visible air pollution reflects sunlight back into space, preventing it reaching the surface. But the pollution also changes the optical properties of clouds. Because the particles seed the formation of water droplets, polluted clouds contain a larger number of droplets than unpolluted clouds.

Recent research shows that this makes them more reflective than they would otherwise be, again reflecting the Sun's rays back into space.

Scientists are now worried that dimming, by shielding the oceans from the full power of the Sun, may be disrupting the pattern of the world's rainfall. There are suggestions that dimming was behind the droughts in sub-Saharan Africa which claimed hundreds of thousands of lives in the 1970s and 80s. There are disturbing hints the same thing may be happening today in Asia, home to half the world's population.

"My main concern is global dimming is also having a detrimental impact on the Asian monsoon," says Professor Veerhabhadran Ramanathan, professor of climate and atmospheric sciences at the University of California, San Diego. "We are talking about billions of people."

Alarming energy

But perhaps the most alarming aspect of global dimming is that it may have led scientists to underestimate the true power of the greenhouse effect.

They know how much extra energy is being trapped in the Earth's atmosphere by the extra carbon dioxide we have placed there. What has been surprising is that this extra energy has so far resulted in a temperature rise of just 0.6 degree Celsius. This has led many scientists to conclude that the present-day climate is less sensitive to the effects of carbon dioxide than it was, say, during the ice age, when a similar rise in carbon dioxide led to a temperature rise of six degrees Celsius.

But it now appears the warming from greenhouse gases has been offset by a strong cooling effect from dimming - in effect two of our pollutants have been cancelling each other out.

This means that the climate may in fact be more sensitive to the greenhouse effect than previously thought. If so, then this is bad news, according to Dr Peter Cox, one of the world's leading climate modellers.

As things stand, carbon dioxide levels are projected to rise strongly over coming decades, whereas there are encouraging signs that particle pollution is at last being brought under control.

"We're going to be in a situation unless we act where the cooling pollutant is dropping off while the warming pollutant is going up. That means we'll get reducing cooling and increased heating at the same time and that's a problem for us," says Dr Cox.

Even the most pessimistic forecasts of global warming may now have to be drastically revised upwards.

That means a temperature rise of 10 degrees Celsius by 2100 could be on the cards, giving the UK a climate like that of North Africa, and rendering many parts of the world uninhabitable. That is unless we act urgently to curb our emissions of greenhouse gases.

Source:
http://news.bbc.co.uk/2/hi/science/nature/4171591.stm

Youth ANZAAS 2005

Youth ANZAAS 2005 will be held at the University of New South Wales, Sydney, NSW, From Monday 11th to Friday 15th July 2005

What is Youth ANZAAS?

Youth ANZAAS is a national conference for students of science in Years 9 to 12. Every year, six students are chosen from each Australian State and Territory to participate in an exciting three-day program of science activities and experiences. Organised by the Australian and New Zealand Association for the Advancement of Science (ANZAAS) and sponsored by the Department of Education, Science and Training (DEST) and, for 2005, by the Faculty of Science, University of NSW, Youth ANZAAS is an opportunity for young people to experience first hand the leading edge science that is taking place in Australia today.

Travel arrangements

All travel expenses from the successful applicants' state capital city to Sydney will be met by ANZAAS. Students will travel from Western Australia, Northern Territory, South Australia, Queensland and Tasmania by plane. Students will travel from the Australian Capital Territory, SE Queensland, Victoria and New South Wales by bus.

Conference delegates will arrive at 'The Centre', 14 Frances Street, Randwick, NSW, 2031, on the afternoon of Monday 11th of July and will depart on the morning of Friday 15th of July. Interstate students will be met at their Sydney arrival points and transported to 'The Centre'. They will be returned to their departure points on Friday morning.

Accommodation

Delegates will be accommodated in 'The Centre', which is a boarding house located about 15 minutes' walk away from the upper campus of the University of New South Wales. The conference will have exclusive use of The Centre which has a total of 53 beds in a variety of rooms with 1, 2 or three beds, with and without ensuite bathrooms. There are also bathrooms in the corridors. The standard is about that of a three-star hotel.

Successful registrants will be allocated to a room and bed. The earliest registrants will get the best rooms. ANZAAS will not get into arguments about the allocations. Each room will be for either men or women. Double beds will be occupied by only one person.

A simple breakfast will be served each day in the breakfast-room and adjacent veranda. A take-away dinner will be provided on the Monday. On the other nights dinner will be catered for in the breakfast room and adjacent lecture room. The dinner on Thursday night will be more elaborate affair with a guest speaker. Morning and afternoon teas and lunches will be provided on the University campus or at the laboratories we visit.

A hall in The Centre is available for recreation.

Supervision

Students will be under the supervision of qualified personnel at all times. The supervisors will be members of the Young Scientists of Australia.

Consumption of alcohol, smoking and use of illicit drugs are not permitted at any time during Youth ANZAAS.

Attire

Attire will be casual wear, except for the Conference dinner when a higher standard of dress is expected (shirt and tie for men). Closed footwear is essential for laboratory visits. Early July in Sydney is the middle of winter. The weather is changeable with temperatures ranging from 5°C to 20°C. Heavy rain may be experienced.

Program

A provisional program will be made available as soon as possible. The program will include a hands-on extraction of DNA, other activities that may be included are; visits to the Museum of Human Diseases, the Star Lab and Observatory, the reactor at Lucas Heights, a chemical factory, laboratories of CSIRO, Taronga Zoo, the Water Research Laboratory, the and lectures by noted scientists.

The program will start at 9 am each day and end at 9 pm with breaks for meals and recreation.

Cost of the Conference

Registration includes the conference, activities, accommodation, and all meals. Participants will become members of ANZAAS for the 2005-2006 financial year. This will entitle them to 4 issues of the journal 'ANZAAS Mercury'. The cost of registration is $400:00 which includes a $50:00 deposit to be paid when the registration form is submitted. The balance of $350:00 must be paid at or before arrival at the conference.

Registration Procedure

Students should submit their application forms to the ANZAAS contact person in their state, except that Northern Territory and New South Wales students should submit their forms to the Youth ANZAAS 2005 office. The organisers will then select up to six students from each state. The criteria for selection vary from state to state. Selected students will be notified as soon as possible and asked to submit their registration forms to the Youth ANZAAS Office together with the $50-00 deposit. The office will then book transport for the registrants and allocate their beds and rooms. They will then be notified as soon as possible. If the organisers cannot make suitable bookings, the $50:00 deposit will be returned as soon as possible.

Application forms

For application and registration forms and information about the selection criteria please contact your state representative of ANZAAS or the Youth ANZAAS Organiser: Electronic forms will be available on the Association's website: www.anzaas.org.au.

Information supplied by Bob Vickery, ANZAAS NSW.

Perrin's Points

NOTICES TO MEMBERS FROM THE HON. SECRETARY

IMPORTANT INFORMATION!

The University of Adelaide has re-located the ANZAAS office as part of its ongoing reorganisation.

The **physical address** of the ANZAAS head office is now located on the Commercialisation R & D Campus**:**

30 – 32 Stirling Street
THEBARTON
South Australia 5031

The **postal address** and **telephone number** remain unchanged**:**

ANZAAS
The University of Adelaide
ADELAIDE
South Australia 5005

tel & fax: [08] 8303 4965

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**

The Council of ANZAAS is pleased to announce the appointment of Mr Norman Trueman, B.Eng, M.Sc [Geology] FAIMM, FGSA as Honorary Treasurer of the Association. Please contact the Treasurer through the main office.

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

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.

ANZAAS Awards

Members will read on page 2 of this issue of the award of an ANZAAS Medal to a prominent scientist who was nominated for the award by the WA Division.

The Mueller Medal was presented on 6th April in Sydney to **Professor Richard Shine** as the result of a nomination by a researcher who was not a member of ANZAAS.

If any member has a nomination for either medal they should contact me without delay.

Below are some useful notes about the Medals for members:

The ANZAAS medal was first awarded at the 38th ANZAAS Congress in Hobart, Tasmania, on August 16, 1965. The Medal is awarded for services in the advancement of science or administration and organisation of scientific activities, or the teaching of science throughout **Australia and New Zealand** and in contributions to science which lie beyond normal professional activities. The ANZAAS Medal is only presented to the recipient at a suitably prestigious scientific gathering or event.

The most recent recipients are:

1997 Prof Graham Johnston
1999 Professor Donald Watts
2004 Professor Peter Raven
2005 Professor David Blair

The Mueller Medal was initiated at the ninth meeting of ANZAAS Council in **Hobart, 1902** and was designed by Baldwin Spencer, a friend and protégé of the Baron; it shows the subject solemnly contemplating a spray of acacia on the obverse with, on the reverse, a waratah flower and the name of the recipient. It honours Baron Sir Ferdinand von Mueller, one of Australia's great pioneers of exploration and science, who arrived in Australia in 1847 and was the Government Botanist of Victoria for 44 years. The Medal is awarded to a scientist who is the author of important contributions to anthropological, botanical, geological or zoological science, preferably with special reference to Australia. Presentation of the Medal to the recipient is normally made at a suitably prestigious scientific gathering or event.

The most recent recipients are:

1994 Professor Michael Archer
1995 Dr Winifred Curtis
1996 Dr Sophie Charlotte Ducker
1997 Professor Marilyn Renfree
2001 Dr Mary White
2005 Professor Richard Shine

Media Report

By Victor BIEN

Science, tsunami and public broadcasting

The tsunami tragedy of Boxing Day 2004 refreshed the awareness of people generally of how humans are supported by the earth and that if it behaves unfavourably to human life it makes us and our technology look very puny. Not only people in the first world but the villagers in the poorest parts of the region would have come to understand the earth and its tectonic plates in no uncertain manner! What a way for people to gain some science education!

Public broadcasting through the ABC and SBS had many programs over the holiday season which while not all specifically "science" programs, such as Catalyst on the ABC, conveyed significant science content. I discussed WGBH's 7 part series looking at the concept of evolution this time last year. The program was repeated on SBS at the 1 pm time slot during weekdays.

Here is a non systematic collection of programs shown over the period: about Airships starting 2 Jan on the ABC, the narrator was ABC's Robyn Williams; Origins: Back to the Beginning – cosomology 27 Dec, ABC; The Elegant Universe about string theory presented by Prof Brian Greene 13 Jan SBS; The Future is Wild 18 Dec SBS - did not receive a good review in the SMH, more science fiction than science fact; As It Happened (series which is continuing, mostly of historical focus, science only as relevant to that focus) - D-Day Invasion maps 18 Dec SBS; Stories from the Stone Age explained why and how humans abandoned hunting and gathering and take up a new way of life 19 Jan ABC; Terror of Tasmania about the Tasmanian devils 29 Jan ABC.

Other programs that I did not take note of the when and where were two biologists (male and female) who lived with a family of chimps in their jungle habitat as close as they could as the chips themselves did. They were hoping to do it for 10 days I think but only managed 5! The chimps recognised the hardship the pair were in and showed them the way back to base camp.

The other one I like to mention is a series on Leonardo da Vinci. This was mainly historically orientated but again certain science aspects were hard hitting. Leonardo's "hang glider" design was proved to be completely airworthy! However, before the scientist/historians were able to build a flying replica they had to work out that Leonardo drew the design back-to-front, a strategy which he employed generally to throw people he did not like or trust off the track.

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