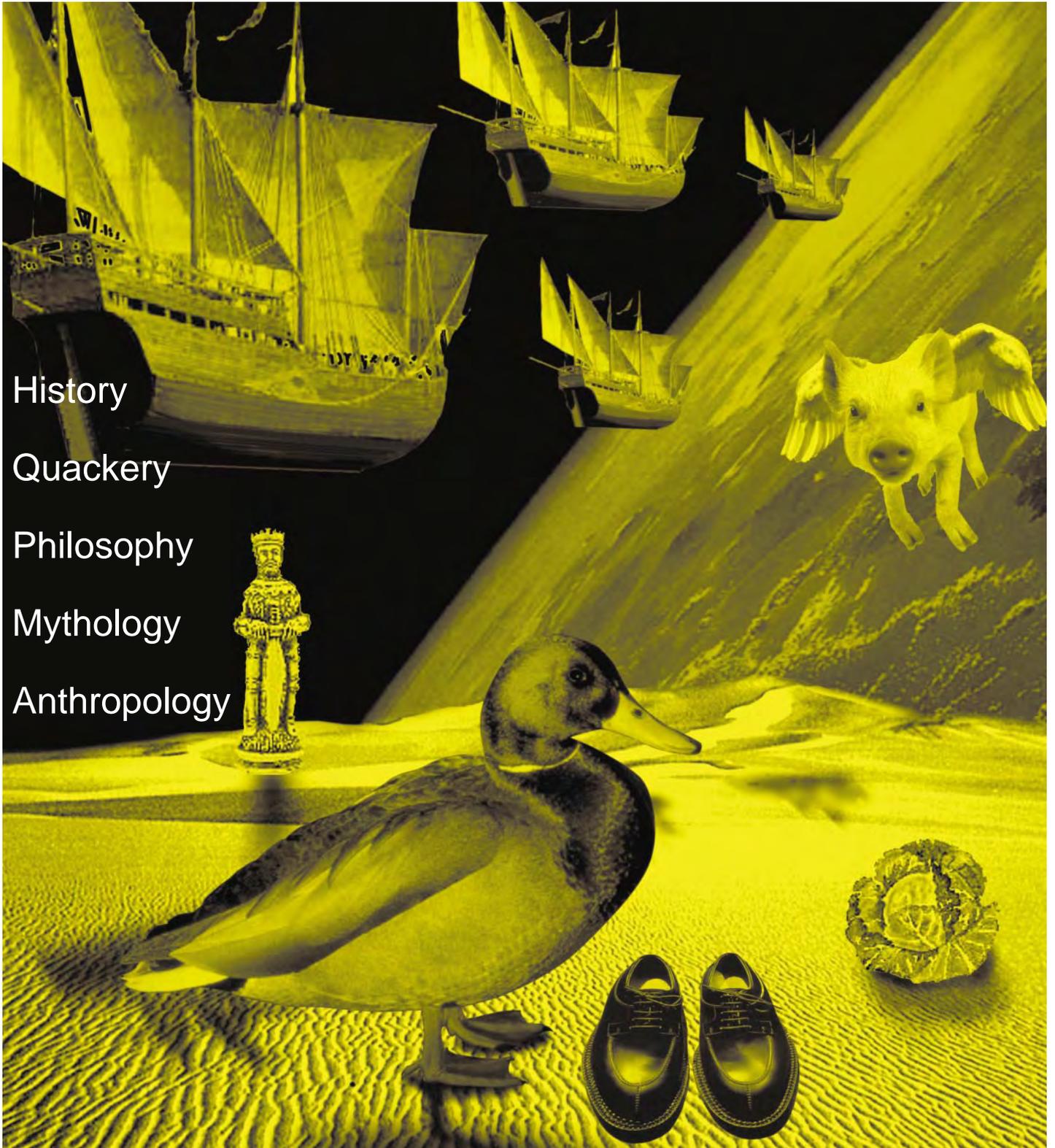


# the skeptic

VOLUME 21, NO 1

A journal of fact and opinion



History

Quackery

Philosophy

Mythology

Anthropology

# the Skeptic

Vol 21, No 1  
Autumn 2001  
ISSN 0726-9897

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# Editorial

Whether one subscribes to the One True Calendric Faith as espoused by this journal, or to one of the vile heresies enunciated by some of our readers, there can be no doubt that we are *now* in the 21<sup>st</sup> century and the third millennium, as time is measured by our calendar.

Despite the predictions of doom or otherwise from the various seers and necromancers, the early 21<sup>st</sup> century, so far, doesn't seem to be much different from the late 20<sup>th</sup> we recently left behind. Not that many of us expected that it would be. The apocalypse and a dawning new age of spiritual awakenings both seem to be equally remote, though there appears to be no diminution in the number and weirdness of the claims that are still being made. Proponents of quackery are still doing their best to convince us that eye of newt will cure cancer; creationists continue to try convince us that the world began last Tuesday; irrationality continues to prosper. It is not time yet to wind up Australian Skeptics and start growing cabbages.

But the emergence of a new millennium did not pass without some changes, and readers will notice them as soon as the pass on to the following pages. For some time we have been considering ways in which we could improve the style and layout of *the Skeptic*. Shortly before the Convention we had a call from a subscriber from Melbourne, Coleby Nicholson, who offered his services. Coleby has been the publisher of a

number of magazines and we were happy to accept his offer. We think that the new-look *Skeptic* is a great improvement and hope our readers will agree. Our heartfelt thanks to Coleby for his interest and his expertise. Nor should we forget the outstanding efforts that Steve Roberts applied to the proof reading. It is never an easy job, taking up a great deal of time, but Steve was, as ever, inspirational. All this new work has resulted in a short delay in the posting of this issue and we apologise for that.

We have also begun a project that should see all back issues of the magazine released on a CD. This is something we have also been thinking about for some time, but were not too sure how to go about it. Once again, at the Convention, a subscriber came to the rescue, this time Richard Saunders from Sydney. Richard knows about things one can do with computers that we had never imagined possible. We expect this CD to become available around the middle of the year, and we express our gratitude to Richard for his knowledge and enthusiastic support.

The World Convention was, naturally enough, the highlight of our year for 2000. It was a project that could very easily have resulted in disaster and its success was a tribute to a massive and dedicated effort by a small group of people. The photograph below, taken at the last committee meeting before the Convention, reveals that not everything was quite as fraught with tension as might be supposed.

But that was in the past and we now look forward to the continuation of our task of trying to bring a sense of rationality to our confused world. This year will see the National Convention held in Brisbane for the first time. We have no doubt that the very active Queensland Skeptics will do us proud, and ask our readers to give it their full support.

Regular readers would be surprised if we made no mention of one of the sadder events of the new century; the death of Sir Donald Bradman.

Don Bradman was an ordinary man with an extraordinary talent and he was honoured for that talent; perhaps, to some extent, he was deified. But he remained a modest hero, and confined

his public utterances to the subject he knew best - cricket. In this age of instant celebrity, where a minor talent to amuse is assumed to confer an expertise in all the issues of the day, that was a rare accomplishment. We were saddened by his death and we will cherish our memories of The Don and his deeds on the cricket field. We believe he made a difference to the way we see ourselves; what better epitaph could anyone want?



*The Convention Committee. L to R: Irene Case, Trevor Case, Martin Hadley, Scott Campbell, Richard Lead, Barry Williams, Richard Gordon.*

# Around the Traps

## □ Plimer in the Commons

As we go to press, we are delighted to report that our good friend Ian Plimer has been in Britain, where he gave a presentation on creationism to the Joint Party Committee on Education and Science in the House of Commons. Although the UK doesn't appear to suffer as much from this anti-science movement as does the USA and, to a lesser extent, Australia, it is pleasing to see that British legislators are concerned about the potential problems arising from the introduction of pseudoscience into school science curricula.

## □ Here's luck

Who said there is no such thing as luck? We have incontrovertible evidence that not only does luck exist, but that being a Skeptic is a guarantee of far more of it than chance would dictate. How so, you cry? The answer is simple.

Recently, "The Scientist, Oliver Sylvaint, Director of the CIVUPC (don't ask) located in Switzerland, and the Indian clairvoyant (no capital) Madja, selected 27 privileged people, world-wide, to receive "a fragment of the Magic Indian stone which will bring them abundance of luck, success-joy-happiness and money ...!" This fragment of stone was absolutely FREE, though there was a minor matter of: "I understand the expenses that this will naturally entail (post and packing from India, with insurance, administration charges, etc)." For which we were invited to "send ... the symbolic sum of just \$65..." (If any reader cares to send any "symbolic sums" to me, *c/- the Skeptic*, they will be gratefully received - the more the merrier.) But it gets better. For only a further (sub-symbolic?) sum of \$20 you can get "the magnetised photograph of Madja in order to be fully protected from all acts of jealousy and any harmful waves". (Magnetic photos? What will they think of next? Should be useful for surfers, though.) And you get a (really, truly) Free Gold Talisman in-

cluded that "will increase your winnings in games of chance by 32.4%". (That's pretty precise, isn't it? Must be scientific.)

All very well, I hear you shout, but how does this prove that Skeptics are exceptionally lucky? Well this will knock your cynicism into a cocked hat. The message, urging a speedy reply, mentioned that 11 fragments (of 27) had already been distributed, leaving only 16 pieces of lucky rock available. Of those 16 fortunate people from all around the globe, no less than five (5) were present at the NSW Skeptics dinner meeting at Chatswood on Feb 17. What are the odds against that?

## □ It's fate

From the Sometimes-You-Have-to-Wonder-if-There-Really-is-a-Force-Directing-our-Destiny Department.

Recently the editor of this journal had occasion to visit a branch of one of those franchised bookshops adorning his local shopping centre, where he was attracted to the shelves denoting that it held volumes devoted to History. The shop was undergoing one of those all-too-frequent periods of chaos that seem to infect retail establishments who have been convinced by an "expert" that they can improve their output (income) by changing their familiar layout and hiding everything in a different place.

Reaching up to a high shelf to extract a volume that had caught his eye, he inadvertently dislodged a pile of poorly stacked tomes, which, with a loud clatter, cascaded all over him, causing painful, though hardly serious, knocks to various parts of his anatomy. Attracted by the clamour, the harassed staff proceeded to brush down the victim, while (no doubt having been warned by a different "expert" that aged patrons finding themselves deluged by stock would be very likely to sue) apologising all the while.

The editor, having been brought up in an age that recognised that accidents do happen, reassured all that he was perfectly well. The situation was further defused by his peals of laughter when he noticed the title of the coffee table books that had caused his discomfort.

It was *Nostradamus in the New Millennium*.

## □ Papal survival shock!

In late January we received a call from an unnamed individual inquiring about the Skeptics \$100,000 Challenge to people who believe they can demonstrate a paranormal ability.

He wanted to know, as claimants usually do, "How do you do your test?" To which the only sensible reply is, "It depends entirely on what you claim you can do", while pointing out that a claim about the ability to levitate would require entirely different tests from claims to be able to accurately predict coming events. A further major factor is that the tests have to be devised in consultation with the claimant, to ensure that both sides are satisfied that they will be fair.

In this case the person on the other end of the telephone, who said he was

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acting for someone else (also not uncommon), advised that the claim was the ability to predict the future, to which our reply was, "Then it would depend on the specificity and unlikelihood of the claim", citing the case "If, for instance, you were to predict the death of the Pope (given the common knowledge that the subject is in extremely frail health, and the widespread speculation about possible successors) you would need to be very, very specific". You might imagine our astonishment when he responded with "What if I give you the exact date and time of his death?" We asked him to send his claim in writing and we would look at it.

Not long afterwards a fax arrived which contained the information that the Pope would die, from complications arising from a liver transplant operation at 5.10pm on 10 February 2001.

That sounds explicit enough for anyone, but some of our challenge people were a little (shall we say) Skeptical. We know the Pope is in ill health; supposing, for example, the unidentified correspondent was a Catholic bishop with inside knowledge that his boss would be undergoing an operation on 10 Feb? Or the possessor of some other inside knowledge. Our Challenge is to seek out people with paranormal abilities, not people who can "fool the Skeptics".

We were unable to take the matter further, because the phone number that accompanied the fax (from Kalgoorlie) didn't respond to a couple of calls, preventing us from making contact and seeking to come to an agreed protocol.

In the event it didn't matter, as 10 February passed with no word of the demise of the world's top Catholic, so we must assume that our mysterious challenger was either self-deluded, or trying a punt on a long-shot bet.

#### Yowies

Dean Harrison, of Australian Hominid Research is a Yowie hunter of some note, so it's not surprising that when London's *Financial Times* newspaper wanted to do a piece on the subject of Yowies they sought Dean's assistance.

Shawn Donnan, his wife and a friend accompanied Dean into the wilds and were treated to the assorted sounds of the bush, many of which, Dean assured them, might have been Yowies.

Australian Skeptics was also invited to comment and Bob Nixon was quoted as saying the Yowie myth was a wonderful example of the Australian sense of humour. The rest of the world has an ape-man running through the scrub, so why not us? It fell to a spokesman from Cadbury to put the creature into the proper context. Tim Stanford pointed out that, as a relatively young nation, Australia is a bit light on for the myths and legends that the older countries have had time to develop. Mr Stanford also pointed out that the Cadbury Yowie (a toy-filled chocolate) got its name because the suggestion tested off the charts with the locals.

Dean Harrison also suggests that there is a huge government cover-up to prevent the world knowing that Yowies are real. Of course he's been told this by un-named police officers. Yowies, he believes, are dangerous creatures and there would be panic if word got out. The great thing about conspiracy theories is that they tend not to make a lot of sense when viewed from outside the circle of believers. The presence of a white pointer shark in a bay is newsworthy, yet – so far as is known – there is no government agency dedicated to keeping the existence of a big angry fish from us. The NSW government has no budget allocation to keep the public ignorant of Sydney funnel-web spiders. The fact is that we like dangerous, angry and elusive animals, and if we were to learn that there were ape-like creatures wandering the Australian bush the tourists would be climbing over each other to see one.

#### Odd odds

And while considering odds, how about this one?

We have wondered here before at the coincidences that happen in life and that seem to have a strange effect on the unwary. Recently while entering credit card payment details from subscribers who were paying their sub-

scriptions, we had written down one 16-digit number and proceeded to the next card. We were astonished to find that we had reached the 11th digit before the second number varied from the first.

#### Ouch!

Readers might well imagine the trepidation with which your correspondent approached the Pharmacist-in-Charge of his local Chemist Shoppe which advertised, on a sandwich board near the entrance: "Rotary Bowel Scan Kits Available Here".

They might also share his relief when he discovered that the Kits concerned were being sponsored by the worthy service club of that name, and not, as he at first feared, some new and fiendish torture device being foisted on us by the medical profession.

#### Only foxing

Foxtel recently revamped its line up of pay television channels. Among the new additions is one called Fx. Touted as the first Australian television channel designed for women, it broadcasts shows like *Oprah*, *Ellen*, *Prime Suspect* and a fairly wide range of shows featuring women in the lead role.

Five times every day of the week Fx broadcasts a five minute astrology segment, leaving us in no doubt what Foxtel thinks of the female members of its audience.

#### Spaced out

If there were no other good reasons to support space exploration, the current plethora of "reality" and "lifestyle" TV programmes infesting the airwaves should provide one.

If these represent either reality of the style of life we wish to lead, then migration to another planet might be the only option left open to people of taste and discernment.



# The Baringhup Cross

Mysteries are often found to be less than they seem. Here Bob Nixon exposes yet another one to the critical light of reason (and the bathroom).



*Bob Nixon is the Chief Investigator for the Skeptic and is not really as angelic as he appears here.*

Crosses of Light, as they are known, were first reported in 1988 when a Pasadena (USA) resident noticed that his bathroom window displayed an unmistakable Christian cross when a light was viewed through it. Since the first announcement these crosses have been noticed around the world. They share a few features, the most obvious of which is that they appear much the same wherever they are seen. In the centre is a large rectangular smear of light. Radiating above, below, left and right are the arms of the cross. These widen slightly towards the ends. Around the entire cross, reaching almost to the end of the arms is a soft glow. Typically they are taller than they are wide.

They always appear suddenly, with many observers prepared to swear that previously the light had not produced this pattern.

They commonly appear in bathroom windows, where the glass is opaque to prevent observation of the room from outside.

They are invariably portrayed as religious in nature.

They are sometimes said to appear to be hovering in front of the window, rather than actually on the surface.

In January Grant Stevenson and I travelled to Baringhup, in country Victoria, at the request of the *Sunday Age*, to view one of these crosses for ourselves. In a small house in this tiny town a Cross of Light had suddenly appeared, discovered by Kevin McGee, the owner of the house. On seeing the cross for the first time, Kevin joked, he told his wife that his time was up and they'd come for him. The image appeared on the bathroom window when



*The Baringhup Cross as seen from outside the house.*

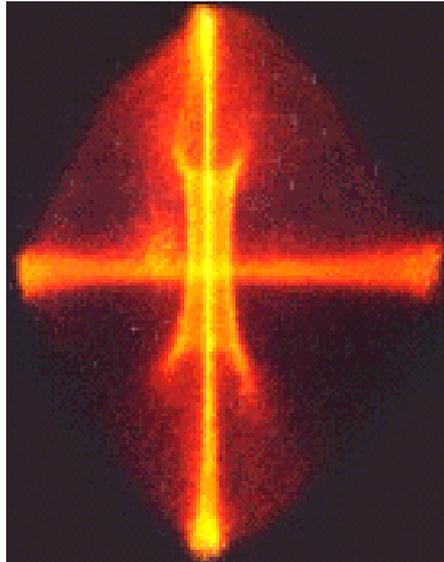
an outside light was lit. Kevin checked further and found that the image also appeared from the outside when the bedroom or bathroom light was lit inside the house. A similar window that separated two rooms did not show a cross. The Baringhup Cross is exactly like those described above, but for what I think is the first time a Skeptic was sufficiently close to examine the effect

closely. There are some interesting features not mentioned in the assorted publicity, exclusively found on the web ([www.shareintl.org](http://www.shareintl.org)).

The arms of the cross are not uniform unless the light source behind the glass is at eye level and directly ahead. If the light is lower than eye level the top of the cross is longer than the bottom. If the light is off to one side the arm furthest from the observer is elongated and the arm closest is shortened.

The glass is of a very particular pattern, visible only under magnification. Four-sided pyramids, perhaps half a millimetre wide, coat one side of the glass; the other side is smooth. The pyramids run in regular lines top to bottom and left to right. A close examination of the window that produces the squares show a surface pitted with tiny circles.

Clearly the cross is a result of the surface pattern. The light source, an unshaded electric bulb, provides a single point – well not quite, but near enough for our purposes. From this point the light radiates in all directions. Through clear glass only those light rays running directly towards for eye register on your retina and you see, not surprisingly, the glowing filament of a light bulb. The pattern on textured glass refracts the light rays in a unique way, depending on the nature of what are in effect prisms. The circles of the second window in the McGee home



*The original Cross of Light, first seen in 1988 in Pasadena, California.*

cause the light to be bent in one way, while the pyramids on the cross-producing glass have their own effect.

*Spiritual Links Magazine* (“The disciple that thinks, reads *Spiritual Links*”), has declared the cross to be a miracle, impossible to reproduce without complex apparatus. They cite a study by a Dutch university that claimed to be able to reproduce the effect only by using lasers. It’s fair to say that *Spiritual Links* is a magazine that is devoted to belief in miracles and to linking mystery to spirituality. In the same issue of the magazine there are reports on crop circles, weeping statues and milk-drinking idols, all of which can be, and have, been explained satisfactorily. Like those phenomena, the Cross of Light has a mundane, some might say banal, explanation.

Pilkington Glass, a British company with offices and manufacturing plants around the world, produces a range of glass products for the home and

car. Among these are a number of frosted types of plate glass. Each pattern has a number, and each is made with a particular texture. The most common image produced when a light is behind the glass is a simple smudge of light, but a few do produce specific images. The glass that produces the square is called Pattern 57, or Satinlight. The cross appears only on Pattern 59 in the Pilkington range; this is a now defunct pattern, probably manufactured only in Britain and imported to this and other countries but still reasonably easy to find.

Grant Stevenson and I visited 5 glass retailers between us and Grant was able to find a sheet of Pattern 59 in the space of a quiet afternoon. The retailer who sold it to him had not previously noticed the cross that appeared on the glass. Indeed, none of the retailers we visited had ever noticed that any of the glass patterns produces a particular image when a light is shone through it. Pilkington also were not aware of the image produced by their Pattern 59, and quickly discounted any suggestion that the glass had been made in order to produce the image. Here, I think, we have the answer to the sudden appearance of these crosses around the world. Until it is recognised as a cross, it is merely a light shining through the window.

There is no doubt that the image, once recognised, can be a surprisingly powerful one to those who have a particular belief. There is, however, no miracle at work here, or if there is it is probably the world’s first commercially available miracle.

Interestingly, *Spiritual Links*’ claim that the Baringhup Cross is the first appearance of a Cross of Light in Australia is incorrect. In 1998 John Foley, then of Skeptics SA, challenged four people who had been plying their wares at a Mind, Body and Spirit festival, to demonstrate that they could do what they claimed. The resulting challenge was broadcast on *A Current Affair*. One of the four had a small piece of glass that displayed such a cross. It was dismissed as merely a refraction pattern, and the Skeptics prize remained unclaimed.



*Bob Nixon and journalist Amanda Patterson examine the test rig. Amanda is on the left.*



# Animal quackery (in my soup)

In his World Convention paper, Roger Clarke reveals that anything going “quack” in the vet’s surgery is not necessarily a sick duck.



*Dr Roger Clarke is a former President of the Australian Veterinary Association and Fellow of the Australian College of Veterinary Scientists. He is also the founder of the Veterinary Skeptics Group.*

I think it is true to say that the veterinary profession is one of the most diverse professions in the world today. Our members work in so many diverse fields, medical research, small and large animal practice, public health, the racing industry, the diplomatic service, dentistry, quarantine, disease control on a national and state level and exotic subjects such as crocodiles, alpacas, avian and fish medicine as well as in zoos and wildlife research.

I must not forget the many dedicated teachers and researchers at the four veterinary schools in Australia who attempt to teach our young undergraduates enough basic veterinary science so that they can encompass all of this later knowledge and move into a satisfying career later in life.

It is not surprising that such a complex group of people would have many different lifestyles and beliefs. I think that the only unifying characteristic is the basic veterinary science degree.

Another characteristic of the veterinary profession is an apparent generalised apathy and the ability to go about their daily affairs with little concern for any issues, except those

that immediately concern them. I suspect this is not unique to our profession.

Three years ago, I formed a loose group of veterinarians called the Australian Veterinary Skeptics Association in response to what I saw as a disturbing trend in veterinary practice, to adopt and sell alternative and complementary therapy to members of the public.

## Veterinary education

When I graduated from the University of Queensland in 1964, there were very few veterinarians practising what are now called complementary or alternative veterinary therapies. There were a few so-called ‘muscle-men’ working in the greyhound racing industry and a few self-styled animal ‘chiropractors’, most of whom had no formal training in either physical therapy or chiropractic. The activities of these people were often limited to the greyhound and horse racing industry and had little impact on general practice. Most veterinarians regarded them as a harmless nuisance, although some actively supported them by referring animals to them for ultrasound treatments.

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## Influence of the Aquarian age

In the 1960s there was a movement among young people to rebel against traditional beliefs and behaviour. This was called the 'Age of Aquarius' and saw the rise of 'Flower Power' and 'Free Love', marked by such events as the memorable 1969 rock concert at Woodstock in the USA, with entertainment personalities preaching a message of Love, Peace and Healing.

The move towards the free use of 'mind liberating' hallucinogenic drugs such as LSD and the legalization of marijuana for personal use was led by 'pioneers' such as the late Dr Timothy Leary.

The 1970s and 1980s saw the appearance of "Sensitive New Age Guys" and "Political Correctness." A trend which has now led to a political climate where it is OK for people to believe in almost anything, but very incorrect to criticize them for believing it. Anti-discrimination and defamation acts abound in the laws of Australia. They are two-edged swords which can work to stifle the basic notions of free speech and expression which one should expect in a democracy.

## The value of history

As Queensland University students, we learned from Professor John Francis of the contributions of the early Greeks, Romans and Arabs to veterinary science and the reason why the Centaur, Chiron, is used as a symbol of veterinary science.

Chiron, the son of Uranus, was a mythological Greek demigod, half man and half horse. He is supposed to have held the secrets of healing given to him by the Gods and he passed these secrets of healing to his disciples, among them Asclepius, the son of Apollo and 'father' of Greek medicine.

The symbol of the serpent twined around the staff of Asclepius, commonly used by the medical profession as its symbol, represents the beliefs of the ancient Greeks in the mystical powers of life and death embodied by the serpent. They believed that by

shedding its skin the serpent went through a process of rebirth.

We learnt of the stagnation of scientific learning in the Middle Ages under the influence of religious superstition and the church, and the rebirth of scientific method and knowledge in the 18<sup>th</sup> and 19<sup>th</sup> Centuries, represented by the works of such great biological scientists as Jenner, Pasteur, Lister, Erlich, Darwin, Mendel and Koch. We learnt how their personal religious beliefs affected their work and how they overcame these internal struggles.

I believe that the subject entitled the "History of Science" is no longer taught at Queensland University because the curriculum has become far too crowded. This is very sad, because we can, and should, learn from history. Unless we understand the mistakes that history can teach us, we are bound to repeat them.



## The value of science

My pathology teacher at the University of Queensland, Dr Hans Winter, told us as students, "In pathology (science) you will learn many things that are only hypotheses and many of these will later be proved untrue. Much of what I am teaching you now as 'fact' will be proved to be untrue. However, if you want to pass your exams you will remember everything that I teach you."

I have remembered his good words of advice and have tried to be critical in my analysis of my work ever since. Time has shown me that Hans Winter was quite correct; much of what I

was taught at University in 1964 as 'fact' is now known to be untrue.

The word 'Science' is derived from the Latin, *scientia*, meaning knowledge. The modern definition is 'the systematic and formulated pursuit of knowledge'.

I am very saddened that some trained veterinary and medical scientists, who should be very aware of all the work that has led to the current state of medical and veterinary knowledge, can so easily ignore the lessons of our history and promote the use of unscientific remedies that have been historically discredited.

## Enter "holism"

I was President of the Australian Veterinary Association (AVA) at the time when a group of veterinarians, known as the Holistic Veterinary Association, applied for recognition as a special interest group (SIG) of the AVA. The AVA was placed in a difficult position, as our constitution allows any group with over 50 members to form a SIG. We had already accepted a SIG representing veterinarians interested in acupuncture and to reject this group would be seen as discriminatory and 'politically incorrect'. There were members of our board and policy council who were concerned that the activities of this group would bring the AVA into scientific disrepute and I was one of these. One prominent member of the AVA board resigned from the Association as a result of the acceptance of this group.

The Holistic Veterinary Association was democratically accepted by the policy council of the AVA and represents vets interested in all aspects of alternative and complementary therapies, such as herbalism, Bach flower therapy, aromatherapy, reiki and chakra healing, iridology, homeopathy etc. This group holds regular meetings at our annual conference and these meetings are often well attended. The acupuncture group also holds some of its meetings in conjunction with the Holistic Veterinary group.

The policy council of the AVA determines AVA policy and, with the

advent of the holistic group, we decided to make a statement of policy in relation to alternative and complementary therapy. The holistic veterinary group, in conjunction with other members of policy council, drew up this policy. It differs radically from their first draft, which was based on the policy of the American Veterinary Medical Association, AVMA.

### AVA policy

The AVA policy states:

#### ***B11 Code of Practice for the Use of Complementary and Alternative Veterinary Medicine***

*The AVA respects the right of veterinarians to use complementary and alternative modalities provided that:*

*11.1 Diagnosis is established based on sound, accepted principles of veterinary medicine.*

*11.2 Proven conventional treatment methods are not withheld without disclosure to the owner of the full range of treatment options available.*

*11.3 Informed owner consent is obtained prior to use of complementary and alternative modalities.*

*11.4 Complementary and alternative modalities should only be practised by veterinarians educated or trained in the modalities employed.*

*The AVA encourages further research on the efficacy and validity of complementary and alternative modalities.*

The AVA Board holds, as do the Australian Sceptics, that we live in a democratic society and we welcome freedom of thought and expression. However we believe that the proof of efficacy of any unproven therapy remains with the exponents of the hypothesis. In true science, that proof cannot be just based on faith, but must be subjected to rigorous trials and critical questioning of the mechanisms of the ways in which any therapy works.

I offered a challenge to the then president of the Holistic Veterinary

group, that I would expect to see the results of some critical and well designed scientific investigations into the efficacy or otherwise of these therapies published in our peer reviewed journal the *AVJ*. This has not yet happened.

I was impressed when I read the statement in defence of scientific medicine from the American organisation that calls itself the "Council for Scientific Medicine." This organisation now publishes a Journal called *The Scientific Review of Alternative Medicine*. It is available on the Web at <http://www.hcra.org/sram/> and I can recommend it to you. This journal encourages proponents of alternate therapies to submit them to scientific trials of alternative therapies and offers to publish the results.

### Why is alternative therapy so popular?

Alternative and complementary medicine is a multi-billion dollar business. Some surveys have been done to determine why the public demands alternative and complementary therapy. *The New England Journal of Medicine* reported on a study

therapy during the preceding year. The situation in Australia is probably similar and people who choose alternative health care for themselves can also be expected to choose it for their animals.

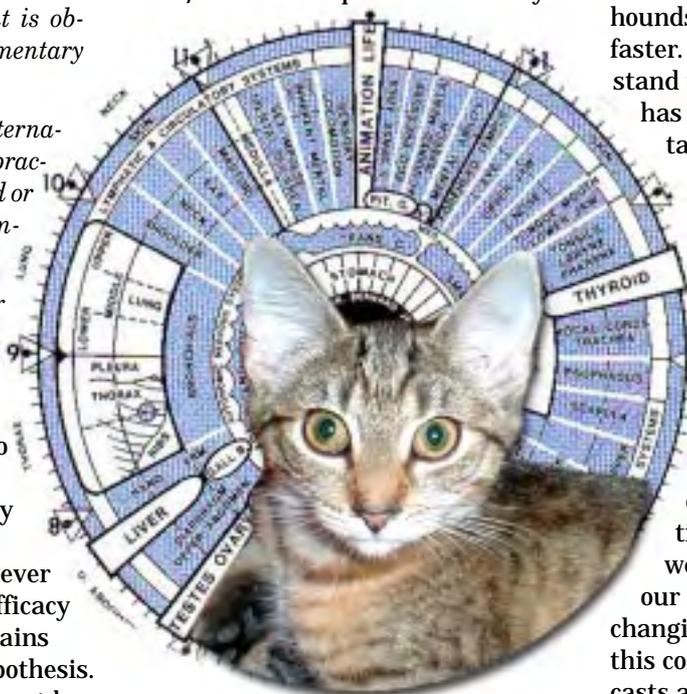
Most of the alternative Veterinary Care givers that I know are holistic practitioners because they say that they truly believe in the efficacy of their treatments. Some practice these modalities of therapy because of unfortunate personal experiences with scientific based medicine. One veterinarian, who practices alternative therapy, does so because her sick child failed to respond to traditional western medicine, but recovered after she sought help from an alternative medical provider. Another veterinarian who practised alternative veterinary care, died recently from cancer after refusing all scientifically based medical treatments for her illness. She died a firm believer in alternative medicine.

A respected veterinary orthopaedic specialist told me recently that he believes that a manipulation of the vertebral column of racing greyhounds makes them run better and faster. He does not pretend to understand the cause of this response and has not investigated it in any detail.

I do not mind the fact that these people believe in something. It is their failure to try to critically analyse the cause and effect of their beliefs that I find so disappointing.

### Opposition to science

Many alternative health care providers criticize scientifically based medicine because we are continually subjecting our beliefs to critical analysis and changing them. They propose that this continual evaluation process casts a serious doubt over all the treatments that we now use. In some cases they are correct; for example, there is a current debate in the veterinary world over the frequency of vaccination boosters for dogs and cats. For many years we have given



*A feline iridology chart*

in January 1993 which showed that about one-third of American adults sought some sort of unorthodox

these annually, even though there is evidence that the immunity is quite long lasting from some components of the vaccines. There is also evidence that some vaccines may stimulate an auto-immune response leading to auto-immune haemolytic anaemia or stimulate localized neoplasia. In the light of this evidence, the scientific veterinary community is reviewing its protocols for vaccination to reduce the frequency of boosters. The opponents of vaccination say that vaccination actually 'weakens' the immune system and want to abandon scientific vaccination altogether and just use homeopathic 'nosodes' that they claim have a similar protective effect. Unfortunately, there is no evidence to substantiate their claims that 'nosodes' work and these persons do not acknowledge that scientific vaccination has virtually eliminated the incidence of these killer diseases such as distemper, to a level where they are almost never seen in Australia. Distemper is still quite prevalent in Third World cities where vaccination is not practised.

#### Elimination of animal diseases

Australia is very lucky to have such disease-free livestock. Veterinary scientists have eliminated bovine tuberculosis and brucellosis through carefully designed programmes and our quarantine keeps us free from introduced diseases. We can afford to be proud of our record on disease control. In the UK it is through the diligence of the veterinary profession that variant CJD was discovered so early in the outbreak and control measures put into effect to eliminate the disease. Political pressures have inhibited similar work in other countries, such as France, and there is no doubt that CJD will be with us for some time, but at least we now know more about the prion that causes this disease through the work of medical and veterinary scientists.

#### Faith in unproven hypotheses

I criticize alternative veterinary and medical care providers because

so much of what they practice is based on blind faith and an uncritical acceptance of unproven hypotheses. Unlike the scientific community, they are often opposed to change and when questioned on the basis of their beliefs, such as acupuncture or homeopathy, ask us to just have faith in the fundamental hypotheses on which they are based; hypotheses which are unproven and may well be fallacious. They often say we do not understand these modalities of treatment because the method of diagnosis of disease used for them is different to "Western diagnosis".

There is also no doubt that a few veterinarians practising alternative therapy are simply motivated by profit and are freely exploiting the demand for alternative and complementary veterinary care in order to make more money.

#### Definition of alternative therapy

Dr David Ramey, a veterinarian from the USA, has given us this definition of alternative and complementary therapies.

*Medical practices are called alternative if they are based on untested, non-traditional or unscientific principles, methods, treatments or knowledge. Alternative medicine is often based upon metaphysical beliefs and is frequently anti-scientific. Because truly alternative medical practices would be ones that are known to be equally or nearly equally effective to proven scientifically based practices, most alternative medical practices are not truly alternative. If the alternative health practice is offered along with scientifically based medical therapy, it is referred to as complementary medicine. In this case it becomes impossible to determine what has led to the patient's recovery; the passage of time and natural healing, the use of scientifically based remedies or the complementary therapy given 'just in case'.*

Practitioners of holistic veterinary medicine frequently state that they are treating the whole patient and not just the aspect of disease affecting the patient at any one time. They imply, usually with some justifica-

tion, that scientifically based veterinary or medical therapy is narrow and concentrates on a single disease and ignores many of the other needs of the patient.

#### Reasons for the popularity of "alternative" health care

We need to pay heed to these reasons as there is a lesson for practitioners of scientific medicine in analysing these. Often they are quite understandable.

- Fear of surgery.
- Fear of drugs. Many people prefer to believe that 'natural' remedies are safer than 'artificial' remedies (pharmaceuticals), even if the latter are based on 'natural' substances.
- The fact that modern medicine is not always harmless and that iatrogenic disease following surgery or treatment is quite common.
- The fact that many alternative health practices are relatively innocuous and therefore relatively safe.
- Scientific medicine often fails to define or discover the cause of illness or pain, and when scientific medicine does discover the cause of illness and pain, it may not be possible to offer a guaranteed or safe 'cure' (eg Cancer). Alternative medicine often suffers from the same criticisms but usually continues to give the patient a 'hope of a cure'.
- Many doctors and vets treat the illness or disease first and do not show sufficient empathy and concern for their patient. They are obsessed with scientific objectivity.

#### Objections to orthodox practice

Alternative practitioners are often 'holistic', claiming to treat the mind, body and soul of the patient. This appeals to the more sensitive persons in our community that resent being treated as a 'case'. Many AHC patients claim

that their 'healers' treat them as persons and seem to care about them, whereas traditional doctors often seem to lack good 'bedside manner'.

- Some people like to believe in 'magic' and the arcane. This is evidenced by the popularity of Harry Potter books, *Star Trek* movies and the 'healing' power of crystals and pyramids.
- Alternative health care is often perceived as being less expensive than scientifically based medicine. This appeals to insurance companies.
- In some cases political and economic pressure has led to the licensing and regulation of alternative practitioners, which protects them from further attacks by the 'medical establishment'.
- An extension of licensing is the endorsement of alternative health care courses run by colleges and this lends the imprimatur of official approval to such therapies.
- The main reason people seek alternative health care is because they think that it "works." They feel better, healthier, more vital, etc, after the treatment.

In the case of people, those who say "alternative" medicine "works" usually means little more than that they are satisfied customers. For many AHC practitioners, having satisfied customers is all the proof they need that they are true healers. In many cases, however, a person's condition would have improved had he or she done nothing at all. But since the improvement came *after* the treatment, it is believed that the improvement must have been caused by the treatment.

This is a little more difficult to prove in animals, but since the animals are owned by persons with a strong belief in AHC it is not surprising that the owners often report good results.

### The self-limiting nature of disease

The old adage, "Time heals all wounds," is largely true. Many diseases are self-limiting and the body is able to heal itself with no intervention whatsoever. An equine veterinarian, R.D. Walker<sup>1</sup>, says that approximately 70 per cent of all acute infectious disease conditions of the horse are adequately dealt with by the host's defences. That suggests that whichever method of treatment is selected, 7 out of 10 times, the problem will get better anyway. If healing occurs while a treatment touted to promote healing is applied to the animal then that treatment often receives the credit. This applies equally to conventional scientifically based medicine as well as to alternative therapy and is one of the reasons Koch formulated his rigid 'postulates'.

I am a surgeon and treat many spinal cases. Following spinal disc prolapse many dogs are completely paralysed in the hind limbs, and recovery after decompressive surgery can take several weeks. When recovery occurs, improvement is often sudden and rapid. If a client uses acupuncture or an alternative therapy to 'hasten' this recovery, the recovery is inevitably attributed to the alternative care being given at the time and the decompressive surgery is discounted. Only the experienced surgeon who is observing that dogs not having the alternative care are recovering at the same rate can objectively comment that the alternative care makes no appreciable difference to the rate of recovery.

### Therapeutic outcomes

A recent article "Sham surgery returns as a research tool", by Margaret Talbot, published in the *New York Times* of April 25, 1999, is available on the Web and I recommend that you read it. It describes some scientific trials that show the 'placebo effect' to be a very potent factor in apparent recoveries following therapy of any kind.

Many factors may profoundly determine therapeutic outcome; among them:

- The quality of the relationship between the clinician and the patient.
- The degree of trust.
- The expectations of the patient.
- The compatibility of the backgrounds and belief systems of the clinician and the patient.
- Compliance by the patient in following the treatment dispensed.
- Critical analysis of statistical number of treatments to try to evaluate them.
- Minimising adverse side effects of the treatment.

Someone said recently on the ABC Radio National programme that the best definition of a religion is "The sum total of a person's beliefs". To many scientists their life's work is their 'religion'. A definition of a scientist's religion could be "The sum total of a person's beliefs and knowledge", because a scientist's knowledge shapes their beliefs. Conversely, our personal beliefs can profoundly affect the way that we learn and have a significant effect on our knowledge.

It takes great personal strength to have the 'courage of one's conviction', to be a Mendel, a Darwin or a Huxley and to fly in the face of vehement criticism by your peer group. I admire people who are willing to investigate both new and old phenomena to try to further the cause of veterinary and medical science. I admire persons who keep an open but critical attitude to what they are told and do not just accept it as 'fact' or 'gospel truth'. I do not admire people who approach science with preformed, inflexible attitudes, a closed mind and who ignore the lessons of history.

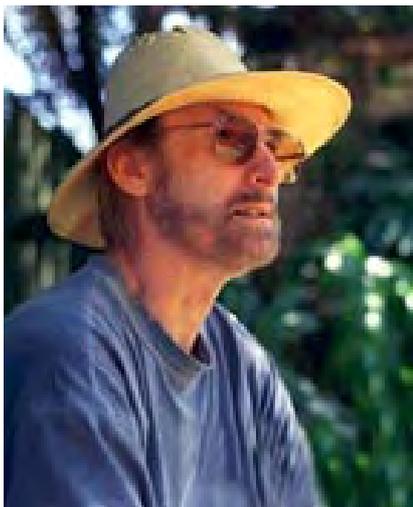
### Note

<sup>1</sup> Walker, R.D. Antimicrobial Chemotherapy. In, *Current Therapy in Equine Medicine*, III, Robinson, N.E., ed. W.B. Saunders Co, Philadelphia, PA, 1992.



# Reasons of the heart

Damien Broderick suggests why gullibility might be a useful survival mechanism for our species.



Damien Broderick is an academic and science fiction writer and critic. His study of scientific attempts to extend healthy human lifespan is *The Last Mortal Generation*, published in Australia. His latest book on the impact of a technological singularity is *The Spike*, from *Tor/Forge*, New York, February 2001.

Kids do the darnedest things, according to a once-popular TV show. Adults are even weirder. You must have noticed that people *believe* the craziest things. And we don't just believe loony ideas - we cling to them in the face of overwhelming evidence. Fight and die for them, send our kids to die in our stead, unto the seventh generation. It's not always so lethal, unless you die laughing.

The other day, someone in Port Germein, South Australia, noticed that when a street light shone through a certain itchy powder tree, it cast an image of Jesus Christ, complete with crown of thorns, on the wall of a nearby caravan park. A miracle! People flocked to marvel and pray. Cognitive scientists quietly pointed out that human brains are chock-a-block with specialised feature detectors. These useful nerve cells scan the world for other humans, clamouring for attention when they find anything that looks a bit like a familiar face. Blotches of shadow, in other words, had tricked people's brains into seeing something that literally wasn't there. But, like Mulder in *The X-Files*, they wanted to believe. Sometimes, irrational notions can be wildly dangerous.

Jasmuheen (formerly known as Ellen Greve) is a Queensland guru who teaches that people can live without food. If you trust her alleged revelation, we can gain all the nourishment we require from the air, plus a little faith. One hapless 'breathar-

ian' died after following this really very stupid plan. But hey - she had faith, didn't she? At least she was following her heart.

## Heads or hearts

You have to wonder what's going on in people's heads. Or is their hearts? We're often urged to fear those who place too much trust in reason. No, we're told, go with your feelings, with faith. Reason, allegedly, is way too limited. Or maybe it's a plot by the brainy to crush the rest of us. Cold, heartless rationality might show us how to build a machine, but it can't tell us how to live our lives, right? That's the role of faith. The distinguished zoologist Stephen Jay Gould supports this view, declaring that faith and reason have dominion over two quite distinct and exclusive domains or 'magisteria'.

Still, if you were trapped inside a temple next to a ticking bomb, who would you rather have trying to defuse it: a well-trained rational bomb disposal expert or the local holy man with a direct line to divine intervention? By the way, who's more likely to have planted the bomb, a member of the Rationalist Society or one of your faith's doctrinal rivals?

Irrational behaviour isn't restricted to a few odd-balls. We all do it much of the time, but we use nicer words for it. We call it 'faith' or 'patriotism' or 'the right thing'. Or quite often: "Shut up and do what I

say, God love ya, or I'll give you such a thump". The funny thing is that after you've been thumped a lot, you tend to come around. You find yourself clinging to those ridiculous claims you've been thumped for questioning. Maybe even embracing them with all your heart, dying for them. "The heart has reasons," as Blaise Pascal famously asserted, "that reason knows not of."

Debates like this start off with phoney contrasts. Reason isn't some weird mental disorder used by cold-blooded creeps because they lack a heart. You couldn't get across a busy street unscathed if you didn't use elementary reasoning ('Look right, look left...'). We all have emotions and values, feelings of love, fear, curiosity and revulsion, that provide the motor for our choices.

Are those feelings irrational? Wrong question. They are appropriate or not, useful or a hindrance. As brain scientist Antonio Damasio argues, feelings are not only important to the quality of life but crucial to the human exercise of reason. Feelings, he notes, are "a window that opens directly onto a continuous updated image of the structure and state of our body".

René Descartes blew it back in the 17th century by supposing that humans are cobbled together from a mechanical 'android' body and a mysteriously invisible, untouchable soul, an immaterial essence designed to survive the corruption of the flesh. It seemed obvious that pure minds couldn't get angry or randy or sooky, so the body's feelings -metaphorically 'the heart', since we so easily feel our emotions changing gear as our pulse slows or accelerates-had to be downgraded. A rebound was inevitable, when Romanticism played up 'authentic' blinding passion at the expense of reasoning.

Now we know better. "The organism", declares Damasio, playing on Pascal's phrase, "has reasons that reason must utilise". Thoughts or ideas are 'qualified' by feelings, which remind us how the world has affected us in the past. Feelings are short-cuts to value: powerful devices that help

us nip through the waffle of unchecked logic.

The astonishing thing about today's brain science is that you can see this happen by viewing a magnetic resonance display. Reasoning or calculation is visibly done in the front parts of the brain, while emotional tone and urgency are added by structures deep inside, such as the amygdala. Victims of prefrontal leucotomy, whose links between the reasoning frontal lobes and the emotional amygdala are cut, lapse into a feckless inability to plan or decide. They can know but not feel. And so their knowledge is short-changed, their reasoning not merely 'cold' but unhinged from reality.

This discovery gets us some of the way out of the faith v reason mess, but we might still wonder why people believe such crazy things so readily. Of course, we flatter ourselves that *our* deepest beliefs are unquestionably true and make perfect sense. But obviously many other people hold firm to contrary notions. And there's no shaking them. Bizarre, really. How could people take such crackpot ideas seriously?

### Memes and selfish genes

Richard Dawkins has a persuasive explanation. He's the evolutionary thinker who coined the phrase 'selfish gene' a generation back and set feathers flying. Another of his provocative ideas is the 'meme', which (assuming such things actually exist) is a sort of atom of thought. A meme is a notion or behaviour that can be copied. Like genes, memes are in a ceaseless Darwinian contest for survival.

It doesn't matter if a meme is true or not, what counts is how many minds it can infest, how fast it can spread. Of course, if a meme happens to be true as well as attractive, its chances improve, since people sharing that meme will act in ways that reflect reality. But plenty of our ideas and practices have no direct impact on brute survival. Fashions come and go, and so too, on a longer historical scale, do faiths. The vulnerable mechanism in our brains which me-

mes lock into, according to Dawkins' clever insight, is language itself.

We're born drastically incomplete. Many other mammals pop out from their mothers' wombs ready to shake themselves off after a quick lick and scamper away with the herd. Humans take years to walk and communicate. Our inherited instincts allow us to learn to be social creatures. Many animals have brains pre-wired with instructions on how to be the sort of critter they are. Ours are more subtle: we're 'hard-wired' to learn language very fast, without question, from the babble we hear around us. Instead of being born knowing Cro-Magnon or Chinese, as bees are born knowing Bee-dance Language, all we have is a very general pre-set grammar and a colossal thirst for new words.

Do you see how this works? Does it give you a tingle of shocked recognition? Kids learn the darnedest things very, very quickly, because their minds are ravenous for the pre-shaped knowledge out there in society. We have been built by evolutionary processes to gulp down the patterns we see and hear and explore. You just wouldn't get very far as an infant if you stopped every time you heard a new word and asked, "Is 'cow' really an appropriate word for that big friendly creature over there? How about 'gooble' instead? Yes, I believe I'll refer to Flossy as a 'gooble'." It's fun, sure, but nobody would understand a word you said.

### Language acquisition

Our language acquisition device has to be *gullible*. It has to accept the input that comes at it without question, without stopping to ask if the customary connections between these items makes sense. As we grow older, of course, we pick up extra tricks for learning about the world. For starters, we have to deal with change, so we need to weed out errors. Over many tens of thousands of years, human cultures have painfully refined these extra tricks into subtle skills.

Practical reasoning is one set. An Australian Minister for Aboriginal Affairs recently observed that aborigi-

nal culture never invented the wheel. What's much more interesting and salient, however, is that aboriginal people are intensely practical and exploratory, and can fix a car engine with insightful ingenuity even though the car was unknown to their ancient culture. (It's new to ours, too, of course.) Abstract reasoning grows out of such practical proficiency, unfolding into arcane doctrines of logic, formal syllogistic thinking, mathematics. These are difficult tricks for primate minds like ours, and take years of hard work to acquire. Even then, they're not terrifically easy to apply consistently. Einstein made some incredible blunders in his specialised reasoning.

Humans, in short, are wonderfully adapted for gullibility, because for hundreds of thousands of years we did better if we accept the wisdom of the tribe. That was survival wisdom, at its root, but it quickly became tangled up in elaborate and sometimes foolish embellishments. Any creature adept at swift learning is prey to superstition. Pigeons in psych labs get fed when they press buttons with their beaks. Since they're usually doing something else at the time (one wing cocked, left foot scratching belly), that activity gets learned as well. Thereafter, the gullible fowl will prance and cavort to get fed. The reward for hitting the button convinces the poor creature that all that wing-cocking and belly-scratching is doing the job. Here comes the grain into the bowl, you beauty, the gods have been successfully propitiated again!

Reason tells us the pigeons are mistaken. It can also help us tease apart our own most fervently held pieties. Reason helps us discriminate between our deepest, overpowering feelings for our parents and other loved ones, of reverence for bravery, honour, service and courageous creativity, and our equally deep temptation to act like idiots when summoned by trumpets and pyramid schemes, or driven by despair and pain into the endless, useless search for miracles and absurd redemption.



# A View from the Media

This article is a brief introductory interview to a series I conducted in November 2000 while at the World Skeptical Convention in Sydney. Future interviewees will be Paul Kurtz (Founder and Chairman of CSICOP, Publisher of Prometheus) and Joe Nickell (Author, magician, detective and Chief Investigator for CSICOP).

Daniel Williams is a reporter with *Time* magazine who attended the convention as part of the media. I was interested to get a small insight into how Skeptics are viewed.

**Richard Cadena:** What was your view of the convention and Skeptics before you arrived for the conference?

**Daniel Williams:** Actually, I found that the view that I had was spot-on. I thought it would be a predominantly male audience. I knew there was going to be a line-up of very good speakers. I knew I would be intellectually engaged by the talks. One of the things I did notice was that the humanity of the people involved really came through. There is genuine concern over what others are doing and how it is affecting people.

**RC:** How did you get this assignment? Did you choose it or was it given to you?

**DW:** I chose this assignment. I was looking at various organisations that were of interest to me. I contacted the Australian Skeptics and was told about the World Convention. I ran the idea past my editor and he approved.

**RC:** What made you interested in the Skeptics?

**DW:** Carl Sagan. When he was teaching science, he made it so clear how science worked and the magic and beauty of that. It really was an inspiration to me after reading his books.

**RC:** What did your editor think?

**DW:** My editor recognised who the Australian Skeptics were and had an interest in me covering the story.

**RC:** You mentioned that your wife had a different view of skepticism?

**DW:** She was only aware of the negativity of skepticism.

**RC:** What angle do you think the story you are writing will take?

**DW:** It is going to be the story of a small group of people who are battling against the large wave of irrationality and pseudoscience.

**RC:** What did your colleagues think of you doing this story?

**DW:** They thought it was going to be a good story. They recognised the Skeptics, although some saw you as sort of eccentrics. They all thought it would be a good story.

**RC:** Thank you for your time.



Richard Cadena is a member of the Victorian Skeptics Committee. He conducts regular interviews for the Skeptic.

# Cancer quackery examined

Ray Lowenthal's paper at the World Convention examines 'alternative and complementary' treatments for cancer, finding they leave a great deal to be desired.



Professor Ray Lowenthal is Director of Medical Oncology at the Royal Hobart Hospital, GPO Box 1061L, Hobart, Tasmania 7001.

Despite a certain amount of progress, cancer remains a difficult group of diseases to treat, and even today less than half the patients with the diagnosis can expect to be cured completely. Thus it is understandable that patients seek alternatives to orthodox treatment recommendations, particularly if they are promised cures that are claimed to be without side-effects. Unfortunately cancer patients and their families are vulnerable to exploitation. The 20th century history of cancer treatment is littered with cancer scams and with treatments that were proposed in good faith but were without foundation.

The terminology can be confusing but the two descriptions most widely used for unorthodox treatments are 'complementary' and 'alternative'. Complementary treatment is defined as that used *along with* conventional medicine whereas alternative treatment is used *instead of* conventional medicine. An all-embracing term is 'complementary and alternative medicine' (CAM).

CAM is widely used by patients in the Western world. For example a

recent survey showed that 70% of the population of Germany, 50% of Australians, 50% of Americans and 20% of UK citizens used it. A recent study of Canadian breast cancer patients showed that 67% were using CAM. The most popular methods were vitamins and minerals, herbal medicines, green tea, special food and diets, and Essiac (a herbal mixture including Slippery Elm).

## Boosting immunity?

Many patients take unorthodox treatments with the aim of 'boosting the immune system'. The notion that one should do so derives from the hypothesis that cells of the immune system constantly are on the lookout for the naissance of rogue cancer cells so as to eliminate them – the theory of immune surveillance against cancer. The idea was proposed over 30 years ago by the Australian Nobel Prize winner, Sir MacFarlane Burnett; however it has not been substantiated. In fact, 90% of cancers arise in patients with a normal immune system, and there is no evidence of a defective immune system in the great majority of can-

cer patients. (There are exceptions: patients with HIV/AIDS, who are seriously immune-depressed, have a higher incidence of a few cancer types.)

Furthermore, there is as yet no evidence that 'boosting the immune system' is of value in the treatment of cancer. At any rate, it is difficult to boost the immune system, it is difficult to measure whether one has done so, and if indeed it did work it might even be harmful. Consider that lymphomas and some leukaemias are cancers derived from cells of the immune system. In such cases boosting the immune system, if it were possible, might well boost the growth of the cancerous cells too.

Do complementary and alternative treatments for cancer work? A small number have indeed been shown to do so and a few have been shown not to; but for most we just don't know. In this paper I will present evidence of some that have been tested and shown to work, some that have been tested and shown not to work, and examples of treatments that are proposed for cancer treatment but for which there is no evidence one way or the other (the majority). Why do patients choose to use CAM? The motivations may be positive or negative, as listed in Table 1.

Modern medicine puts great emphasis on being 'evidence-based', by which is meant that the treatments it uses should be based on scientific evidence. It is accepted that certain methods of obtaining evidence have greater validity than others and four levels are currently accepted (Table 2).

Table 2: Levels of evidence	
• <b>Level I:</b>	Meta-analysis of more than 1 randomised, controlled clinical trial
• <b>Level II:</b>	At least 1 randomised, controlled clinical trial
• <b>Level III:</b>	Evidence from non-randomised trials (eg cohort studies, historical controls)
• <b>Level IV:</b>	Expert opinion or consensus

However, persons not trained in scientific method may put inappropriate value on non-scientific methods of obtaining evidence, such as anecdotes, the pronouncements of authority figures, reliance on 'the wisdom of the ancients' and media reports.

Anecdotal and unsubstantiated reports abound. For example, two unverified and unverifiable statements, as seen on a web site <sup>1</sup> (accessed on 3/11/00) are shown below:

*Yes, it is true, the specially developed Ganoderma Spores that I sent to Wes Labs produced a 10,000% increase in natural killer cells. The procedure was recorded on video tape and certified.*

*Recently a breast cancer patient was given just 2 days to live after taking conventional treatments. Bioscan immediately started their unique efficacious procedure, and in less than 2 weeks the patient was well enough to leave the hospital.*

Apart from the statements not being subject to checking they illustrate another common tactic used by proponents of unproven treatments, namely setting up a straw man. In the example, it is claimed that the patient was given 'two days to live' yet lived for two weeks, thus implying that the unorthodox treatment was responsible for the apparent extension of the patient's life. However, all this proves is that the person who made the inaccurate prediction got it wrong. Studies show that doctors are not good at predicting the life expectancy of patients with cancer. More usually they are over-optimistic than unduly pessimistic. Patients who do not live as long as was predicted are not in a position to point out the error. On the other hand, those who outlive the expectations may attribute their survival to whatever they did or took in the meantime and take delight in publicising these beliefs. However, that A is followed by B does not establish A as the cause of B; that would be giving the cock credit for the sun's daily rising.

Table 1 Reasons for trying CAM	
Positive motivations for trying CAM	Negative motivations for trying CAM
<ul style="list-style-type: none"> <li>• Dissatisfaction with conventional care</li> <li>• Perceived ineffectiveness</li> <li>• Serious adverse effects</li> <li>• Poor doctor-patient relationship</li> <li>• Insufficient time</li> <li>• Waiting lists</li> <li>• 'High tech, low touch'</li> </ul>	<ul style="list-style-type: none"> <li>• Rejection of science and technology</li> <li>• Rejection of 'the establishment'</li> <li>• Desperation</li> <li>• Difficulties with research</li> <li>• Distress</li> </ul>

## Cancer quackery examined

### Natural does not equal harmless

An accusation commonly levelled at medical practitioners is that they pay no attention to so-called natural remedies such as herbs or plants, but this is quite false. Many modern pharmaceuticals are derived from plants. Examples include aspirin from willow bark, morphine from the opium poppy, vincristine from the periwinkle, etoposide from the Mandrake plant and Taxol from the Pacific yew tree. The last three are forms of anticancer chemotherapy. Other examples of 'natural' substances used in cancer treatment by the medical profession include all-trans retinoic acid, a vitamin A derivative used to treat a type of leukaemia; G-CSF (granulocyte colony-stimulating factor), a hormone which stimulates regrowth of white blood cells following chemotherapy; and interferon, one of the body's natural antiviral agents, which can delay relapse in patients with multiple myeloma and other cancers.

Because alternative treatments are mostly 'natural', the claim is commonly made that they are harmless. But is 'natural' the same as 'harmless'? Certainly not. There are any number of harmful natural substances including garden plants, strychnine, arsenic, snake venom, tobacco and alcohol. Indeed, tobacco and alcohol are vegetarian!

Use of CAM may have dangers. Quite apart from its direct toxicity and side-effects, it is commonly expensive. The biggest danger is that patients may be persuaded to forego effective treatments. Although CAM is often adopted in order to improve quality of life, some studies show that life quality may in fact be adversely affected. This is because for some types of CAM, patients are required to involve themselves in many hours of preparation and meditation, and may take huge numbers of medications. Amongst other things, getting so involved in CAM can take patients away from friends and family. Unorthodox medicines may be mislabelled; a number of recent cases show that this can lead to severe

toxicity, for example in the substitution of inappropriate herbs in Chinese slimming tablets sold in Belgium, where many patients sustained renal failure and cancer of the urinary tract as a consequence.

The American Cancer Society has recently put out a comprehensive guide to complementary and alternative methods of cancer treatments. I

recommend it. The book divides such methods into five groups (table 3). Another excellent source of information is [www.quackwatch.com](http://www.quackwatch.com)

### Mind body and spirit methods (3a)

While most of these would be judged to be harmless, meditation carried out in the manner that was often proposed in the 1980s involves

Table 3

### Examples of methods described in The American Cancer Society's Guide to Complementary and Alternative Medicine

(a) Mind, body & spirit methods		(d) Herbs, vitamins and minerals	
Aromatherapy	Crystals	Aloe vera	Germanium
Meditation	Qijong	Beta-carotene	Ginseng
Faith healing	Feng shui	Indian snakeroot	Calcium
Humour therapy		Black cohosh	Mistletoe
	(b) Manual healing and physical touch methods	Cat's claw	PC-SPES
Acupuncture	Colon therapy	Chinese herbs	Pokeweed
Psychic surgery	Reiki	Comfrey	St John's wort
Therapeutic touch	Heat therapy	Echinacea	Vitamin C
Electromagnetic therapy		Evening primrose	Vitamin E
	(c) Pharmacological and biological methods	(e) Diet and nutrition methods	
Anti-neoplastons	DiBella therapy	Acidophilus	Noni juice
Shark cartilage	Laetrile	Coffee enemas	Mushrooms
Chelation therapy	Cancell	Fasting	Soybeans
		Garlic	Vegetarian diets
		Gerson therapy	Wheatgrass
		Grape diet	Willard water
		Macrobiotic diets	

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many hours of patients' time and may be accompanied by the accusation that if the patient fails to improve, or deteriorates, it is because they have not meditated with sufficient intensity or in the correct manner. This 'blame the victim' attitude is not helpful for patients already afflicted by the diagnosis of life threatening illness.

Manual healing and  
physical touch methods (3b)

Most of these will be judged as harmless, provided they are used in a complementary and not an alternative fashion. However 'colon therapy' which involves use of frequent enemas or bowel washouts, can lead to bowel perforation, electrolyte disturbance and dehydration. It is based on the completely unsubstantiated notion that cancer is a 'dirty' disease and is caused by the release of toxins from faeces in the colon.

Pharmacological and  
biological methods (3c)

Many famous cancer scams belong in this category. For example, in the 1970s in the Bahamas, a clinic was set up to produce so-called 'antineoplastons', which were made from patients' blood and urine. However some samples tested by the US Food and Drug Administration were found to be contaminated by HIV/AIDS and hepatitis viruses.

Dr DiBella was an 85 year old Italian physiologist whose claim to be able to cure cancer with a mixture of pharmacologically active agents (including somatostatin, vitamins and melatonin) caused an uproar in Italy in 1998. In a court hearing, a judge ruled that the state should provide this treatment to a two-year old boy with a brain tumour, at the request of the parents. When Italian oncologists pointed out that the treatment was unproven there followed a huge political fight. Ultimately, cancer patients came forward in large numbers to be subjected to scientific tests. As reported in the *British Medical Journal* 386 patients were studied and only three (<1%)

showed a partial response to DiBella's concoction. Fifty percent developed side-effects. The report concluded that 'this regimen does not have sufficient activity in advanced

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*Laetrile was  
scam of the  
1970s.  
This extract of  
apricot pips  
contains  
cyanide...*

---

cancer to warrant further clinical testing'.

Laetrile was scam of the 1970s. This extract of apricot pips contains cyanide, and was claimed to have an anticancer effect because allegedly cancer cells could not detoxify the cyanide whereas normal cells could. Sadly such claims are fanciful. However, at the time there were such great beliefs in the value of the treatment that the US National Cancer Institute was forced to spend millions of dollars studying it. Over 70,000 patients were said to have used it. The NCI wrote to 350,000 doctors in America to publicise their study and invited patients who claimed to have benefited to come forward. Only 92 did so, and when their cases were analysed it was concluded that at most six had shown some benefit. These figures hardly justify the continuing study of Laetrile, particularly when in a further study no benefit was found but some patients developed cyanide poisoning! Nonetheless, Laetrile clinics continue to operate in Mexico just south of the US border.

Australia and New Zealand have had their own famous cases, the most notorious of which was that of Milan Brych. He was a refugee from the

1968 anti-Soviet uprising in Czechoslovakia and found his way initially to New Zealand and then to Australia. He stated he had been a doctor in his former country and said that his name had been removed from University records because he was an anti-communist. He claimed to be a cancer specialist and started treating patients with a brew which he made in his kitchen. Claims that some patients improved led to a media frenzy and the fuelling of conspiracy theories. He claimed that doctors and the pharmaceutical industry were hiding what they really knew about effective treatments for cancer. He was defended by the former Premier of Queensland, Joh Bjelke-Petersen.

After enquiries revealed no evidence to support his claims, he was driven out of Australia and New Zealand and established himself in the Cook Islands. Patients flew there to be treated, omitting to ask the obvious question, is it likely that the only person in the world who knows how to treat cancer would do so from the Cook Islands, a beautiful but minuscule Pacific island nation? In fact, it was widely rumoured that Brych bribed members of the then Cook Islands government to be allowed to stay, and when the government changed he was forced to flee. His legacy lives on; the cemetery where his patients are buried is known as the 'Brych yard'. Eventually he found his way to California where ultimately he was convicted of fraudulently impersonating a qualified medical practitioner, and jailed.

Herbs, vitamin and minerals (3d)

Many plant preparations contain substances which have the potential to alter human physiology. Use of untested herbal preparations is fraught with danger. They may interact with orthodox treatments and may have their own side-effects. On the other hand the list also includes a small number of agents which are indeed effective in cancer treatment.

As a positive example, PC-SPES (PC stands for prostate cancer, and 'spes' is the Latin word for hope) is a

combination of eight herbs which has been subjected to a certain amount of scientific scrutiny and clearly shows efficacy.

Studies have been carried out in the laboratory on prostate cancer cell lines, in mice, and in humans. The tests showed that prostate cancer cells were induced to shrink or die in the presence of the preparation. Interestingly, PC-SPES causes oestrogenic side-effects (that is, side-effects similar to those of administering the female hormone oestrogen), strongly suggesting that the mixture includes phyto-oestrogens (herbs with oestrogenic properties). As oestrogens are already known to be an effective form of treatment for prostate cancer, PC-SPES may be no more than another form of such treatment. Further study is warranted.

St John's Wort (*Hypericum perforatum*) is a herbal preparation which has been shown in controlled studies to have antidepressant properties. It is as useful as orthodox mild antidepressants but has not been tested against the newer or stronger antidepressants.

Vitamin C is a treatment which was originally proposed as being useful for prolongation of survival in patients with widespread advanced cancer. However studies carried out in the Mayo Clinic and elsewhere have shown clearly that it has no such effect. Thus vitamin C is a disproven, not an unproven treatment.

Vitamin E and beta carotene are antioxidants. It was proposed that their use could reduce the development of cancers in persons predisposed.

Controlled trials in heavy smokers however showed that, far from reducing the incidence of lung cancer, the combination appeared to increase it. This example shows the danger of using unproven treatments that have not been subjected to clinical trials.

No matter how good the theory might be, the only way to find out with certainty whether a treatment works is to subject it to a clinical trial.

### Diet and nutrition methods ( 3e)

Some of these methods have the potential to do great harm. In particular, many so-called cancer diets are based on the false premise that a cancer patient's body needs 'cleansing'. Thus patients may restrict themselves to grapes, or beetroot, or as in the Gerson diet, to large numbers of fruit and vegetable juices but little else. Such an approach will undoubtedly lead to rapid weight loss and greater debility.

In Australia, Tahitian noni juice has become popular recently. There is no evidence that it has value in cancer treatment and it doesn't even have an appealing taste (or so I'm told). In cancer treatment it is about as useful, or as useless, as orange juice.

### Recommended cure

I have my own natural cure for cancer. It has all the qualities demanded of such a cure. This substance was first introduced to Europe in the 16th century, from an ancient and now vanished civilisation. There are no records of cancer appearing in this ancient people. It was said to have magical properties and warriors ate it for its strength before doing battle. The plant was so important, that men abstained from sex for 10 days prior to planting its seeds, to propitiate the gods. Every cured cancer patient that I have know has eaten it. Its Latin name (*Theobroma cacao*) means 'food of the gods'. It is in fact chocolate. I advocate it for all cancer patients.

Orthodox and unorthodox treatments alike can only be recommended after they have been subject to adequate clinical testing.

### Note

1 [www.canceralternatives.com](http://www.canceralternatives.com)

### Reading List

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# Snelling's flies for God

Paul Willis investigates a creation scientist's claims about a geological formation and exposes more than one fly in the ointment.



Dr Paul Willis trained as a palaeontologist, specialising in ancient crocodilians (and beer). He works as a science journalist in the ABC Science Unit and is responsible for the Correx Archives segments broadcast on the ABC networks.

Although I'm always loath to admit it, serendipity has come up trumps for me too many times to be just a fluke. There's nothing supernatural in it, of course, but it does make me wonder when seemingly unrelated events suddenly entwine into a common theme. Such a serendipitous episode causes me to write this article.

I've been arguing on an online creationist forum for some time now<sup>1</sup>. It mostly focuses on intelligent design but my strengths are in palaeontology and geology. In October 2000 I was challenged by another list participant to explain the Belmont Insect Beds. The thrust of his argument was a hyperlink to an article on the Institute for Creation Research website entitled *An Australian Fossil Insect Bed Resulting from Cataclysmic Destruction*<sup>2</sup>, by Andrew Snelling

I wrote a lengthy reply to this argument that forms the substance of this article. The serendipity arises from a request from another online anti-creationist list for information on the Belmont Insect Beds. So I forwarded a copy of my reply, which then came under the gaze of the Venerable Bearded Wizard of the Australian Skeptics who asked me to work it up for *the Skeptic*. OK, so not really much of a serendipitous occasion but, if it were not for the two requests coming from two different directions at the same time, this mini essay would have stayed on the discussion list until it fell off the bottom in due course, lost to the ether.

So what's the argument?

The Belmont Insect Beds are a famous deposit of Permian (around 250 million year old) fossil insects in the Hunter Valley near Newcastle. In his article, Snelling attempts to show that these insect beds are proof positive that a global flood happened. When I read it, I could see lies, half-truths and misrepresentations that badly needed rebutting. So here is my rebuttal.

Firstly, to Snelling himself. I have met him only once, at a creationist meeting at Katoomba. This was just after Alec Ritchie's article "Will the real Dr Snelling please stand up?" (*the Skeptic* 11:4) was published, where Ritchie clearly showed that Snelling leads a dual existence; one as a respectable, mild-mannered geologist with orthodox scientific publications and the other as a fire-breathing creationist vehemently opposed to old-earth geology and evolution. When questioned, Snelling could not give me a satisfactory answer as to why he does not mention creationist arguments in his scientific, peer-reviewed articles. He also could not provide a satisfactory explanation why, in his talk, he didn't acknowledge that absurd dates he gave for a uranium deposit were in fact dates from work he had done himself. He also couldn't explain why on one hand he found that radiometric dating was "hopelessly flawed and unscientific" while on the other he

was relying on radiometric dating for a lucrative income as a geological consultant. From my brief encounter with him I was impressed only by his plasticity of mind and the sincerity with which he manipulated the data to his own ends.

And so to his article. I've selected extracts shown in quotation marks for comment. To his credit, Snelling provides a thorough review of the literature concerning the Belmont Insect Beds.\* Where he comes unstuck is in his selective interpretation of that literature. So let's start with some of his geological observations.

### Selective interpretation

*The fine grain size of the tuffaceous chert bed has facilitated the detailed preservation of even the venation in the prolific insect wings entombed therein. Stratification is pronounced and well-defined joints cause the tuffaceous chert to break into rhomb-shaped blocks.*

Snelling glosses over some important geology here. Fine-grained stratified deposits that preserve the most fragile details of an insect's morphology can only develop under the quietest of depositional environments. This is not consistent with a flood. If Snelling is implying that these were somehow created by a global flood (an implication consistent with his previous writings), he does not provide a mechanism by how this could be achieved.

Elsewhere in the article Snelling states, correctly, that this deposit is some two and a half feet thick. He omits to mention that a fine-grained stratified deposit takes a long time to accumulate and the thicker it is, the longer that time. This is classic sedimentological deposition. We can recreate these exact structures in the lab, we know how they form and the secret is time, lots of it.

Further, this is where Snelling lies through being out of context. Snelling carefully forgets to tell the

reader that there is around 3km of sediment *on top* of the Belmont Insect Beds. These three kilometres of sediment are flat lying and could only have been produced by a large river estuary. There are numerous lines of evidence that indicate this is how the sediments were put in place, slowly over millions of years. And there is *no* evidence within that 3km of sediment that would be consistent with them being laid down by a global flood.

He also forgets to mention that, on top of that 3km of sediment are lava flows; something else that indicates a greater antiquity than he is willing to entertain.

And it gets worse. He neglects to mention that there is *over a kilometre* of sediments below the insect beds. Again, from all studies and reconstructions, rivers laid down this sediment and there is no evidence of a global flood down there either.

Still he has not told the whole truth. Below that sediment is another set of sediments *over 20km thick!* This is mostly marine material, accumulated slowly (we know this because we cannot get similar types of rock to form quickly), which has been folded and eroded before more sediment was plonked on top. There's not the slightest bit of evidence in this whole 24km of sediment that any of it was laid down in a global flood; quite the opposite. All the evidence points to this material being laid down slowly over millions of years in a series of episodes with unknown periods of time in between.

### Lying by omission

What I'm accusing Snelling of here is lying by omission. By not putting the insect beds in their correct context Snelling is avoiding a lot of evidence that his whole hypothesis is wrong and creating a false impression of the sudden creation of the deposit - a neat but deceitful trick.

*Of significance is the fact that these insect remains in this tuffaceous chert horizon are associated with plentiful fossil conchostracans (mostly diminutive, branchiopod crustaceans with a*

*bivalved carapace enclosing the whole body, and related to water fleas). Living conchostracans inhabit freshwater environments.*

Again, Snelling lies by omission. He correctly states that there is something significant here then neglects to say what it is. Conchostracans require quiet, clear, freshwater to live. This is exactly the kind of environment that palaeontology would predict would be a likely place for insects to be fossilised. This is not the kind of environment that you would expect to occur in the turmoil of a global flood.

### Sleight of mind

*Many theories have been advanced to explain how insects might have evolved, beginning with a few wingless groups in Devonian rocks. After a gap in the Lower Carboniferous (Mississippian), there is a sudden explosive "appearance" of winged insects in Upper Carboniferous (Pennsylvanian) and Permian rocks, where representatives of nearly all extant orders are found. There is definitely no evidence of macroevolutionary transitional forms amongst the myriad of fossilized insects found in the Belmont Insect Bed, nor in the insect fossil record as a whole. Insects appear suddenly in the record, fully-formed, and fully-functional (intelligently designed and created), and after that they just diversify (reproduce after their "kinds").*

Snelling's next sleight of hand is to misrepresent the facts concerning the history of insects. He makes it sound like the Belmont insects are the first record of insects or close to it. In fact, if you take his own writings and make them explicit, the Belmont insects occurred some 120 million years after the first appearance of insects in the fossil record (he notes that the first insects are Devonian in age and, as noted earlier, that the Belmont Insect Beds are Permian in age, a difference of 120 million years). A lot can happen and evolve in 120 million years! Add to this the well-known fact that Snelling himself starts the essay with; that insects

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\*I'll be interested to see if, in the future, this sentence is quoted out of context by creationists in an attempt to demonstrate that I actually support Snelling's work.

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rarely fossilise because they are mostly so fragile. Then the Belmont Insect Beds cease to be any evidence for creation and perfectly in accord with science.

*In reality the strata contain a record of death, so graphically evident in this Belmont Insect Bed. Hundreds of millions of insects were suddenly caught in a blanket of volcanic ash catastrophically blasted over them. Wings were ripped from insect bodies, though sometimes bodies without wings and legs, or with parts of only some legs, survived the volcanic blast to be entombed with all the wings.*

I can scarcely contain my incredulity at this statement. Just think about it for a nanosecond and the stupidity of the claim is self-evident. He's suggesting here that all the insects in the Belmont Insect Beds were suddenly caught in volcanic ash, which was powerful enough to rip their wings off. What would you think would happen to a delicate insect wing if placed in a volcanic ash flow of such power? Mechanically it would be ground out of existence. Thermally, it would be cooked out of existence (these kinds of flows are pretty hot!). The fact that these wings have survived indicates that they have been handled very gently. This is completely at odds with what Snelling is saying here.

*The accumulation of this silicified volcanic ash bed was no slow and gradual process in some temporal habitat, for only a catastrophe would have swept together and entombed such an incredible mass of insect parts with the carapaces of countless tiny crustaceans, fish scales, plate remains, and plant "hash."*

If you did swallow the absurdity of insect wings surviving in a volcanic ash flow, this might make sense. I would point out that there are other, much more likely scenarios that would produce the Belmont Insect Beds. It definitely requires gentle conditions, otherwise the insects wings would simply not survive. The conchostracans are also consistent with the environment being very

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---

quiet. Similarly the fine-grained, stratified deposit indicated quiet conditions. Quiet conditions and time are a far more plausible explanation of how the Belmont Insect Beds formed than the silly notion of a volcanic flow that was violent enough to rip the wings off of insects but delicate enough not to crush those wings to a pulp.

#### More selective data

*Directly beneath this volcanic ash bed, deposited over an enormously extensive area, is a coarse, water-worn pebble conglomerate, and sandstone with the fossilized remains of the tree trunks whose violently stripped foliage very soon became the plant remains and "hash" in the volcanic ash. Above, the strata include the great thicknesses of plant debris making up coal seams, buried by further violently transported conglomerate masses.*

Again, Snelling doesn't want to tell you everything because it contradicts his story. What he says here is partially true; there is a conglomerate under the insect beds and a coal seam above. There is no evidence what-so-ever that the leaves were violently stripped from the trunks of the trees whose stumps are preserved in the sediments below the Belmont Insect Beds. What he neglects to tell you is that there are also tree stumps **above** the insect beds still standing where they grew in life. And not just isolated examples, but thousands of them spread over the full thickness of the 3km of sediments. Clearly these are from trees that grew and died in-situ. For Snelling's flood to be true, thousands

of trees somehow had to grow from seedlings to maturity in the turbulent sediments at the bottom of the oceans in the flood. Further they had to complete their growth and be buried all within one year (the period of the great flood as proposed by creationists).

Why would Snelling forget to tell you that? Because it indicates that the sediments on top of the insect beds took a long time to accumulate. There is no conceivable way that even a single tree could have grown from seed to maturity within one year under flood conditions. Thousands of them, some on top of others, only complicate the issue. Snelling knows this and so neglects to tell you that the evidence exists.

#### Flies and lies

*This Australian fossil insect bed, therefore, bears eloquent testimony to the devastation during the Genesis Flood.*

No it doesn't! Snelling's essay bears damning testimony to the kinds of lies and half-truths that creationists are prepared to tell in order to give their religious dogma some support. A more thorough examination of all the evidence surrounding the Belmont Insect Beds provides conclusive evidence against a biblical flood.

When I first posted this on the intelligent design forum, I accompanied it with a challenge; why should any one believe any creationist material when examination of that material reveals lies and distortions? I've yet to receive a satisfactory answer. My rebuttal to Snelling's essay also went without comment from any of the creationist participants on the discussion list.

It brings me back to the old saying "Never try to teach a pig to sing; it wastes your time and annoys the pig".

#### Notes

1. <http://www.intelligentdesign.org/Guestbook/guestbook.html>.
2. <http://www.icr.org/pubs/imp/imp-329.htm>.



# Stargazing

And that would be about right, wouldn't it Stephen Hawking, Mr Big-Shot-Physicist, Mr Smartie-Pants, Mr Oh-so-Genius. Your diatribe in New Delhi last Wednesday, where you *attempted* to debunk Astrology was about par for the bloody course.

*When it was discovered that the earth was not the centre of the universe, astrology became impossible,*

you lectured to the gathered scientific community.

*The reason most scientists don't believe in astrology is because it is not consistent with theories that have been tested by experiment."*

Hah! Me and mine know exactly what we think of that. We think your scepticism is absolutely *typical* of you Capricorns, with a bad moon rising in your Venus. Yours is one of the worst cases of planets not aligning we've ever seen. You're always so cynical, so disbelieving, so ... so ... grounded in tedious things like FACTS!



*Peter FitzSimons is a former Wallaby (ie, he played Rugby for Australia, not that he is related to Sir Jim) who is a regular columnist in the Sydney Morning Herald, where a substantially similar version of this item appeared on 23 January. It is reprinted with the generous permission of the author.*

Look, the weird thing is how people attempt to deny the veracity of Astrology, even when the evidence is presented to them on a daily basis.

Take my own listing in the current issue of *Woman's Day*, for example, the one under *Cancer*. "You may still feel a little emotionally drained, even fatigued, following last week's unsettling full moon and lunar eclipse in your sign. (True, oh so true! The lunar eclipse always completely buggers me.) Stay well within your comfort zone and go out of your way to eat, drink and make merry". (By gee, I've followed those instructions to a tee, I'll tell you that for nothing.) It's uncanny!

So how do you feel now, Mr Short-History-of-Time-that-Doesn't-Involve-the-Stars-Hawking? Put your little outburst into a bit of perspective? Huh? What's your problem, Big-Shot? Don't you get *Woman's Day* in the lab?

Now, I'll admit that my same listing in *New Idea* has got me a bit worried – "a man of action and charm could make bold romantic gestures" but I'll figure that out when I come to it and ...

And don't think I don't know what all you cynics are thinking. You're thinking that it's ludicrous to think that all Cancerians are going to have men of action and charm making the moves on them this week, merely because we all happened to be born in the same one-month period. You're thinking how many men of action and charm *are* there to go around anyway?!?! And you're thinking that I'm probably only just one or two raisins shy of being the full fruit cake.

Well that's where you're all making a big, big mistake. Huge. See the problem is that you're trying to apply your oh-so-tedious rationale and logical analysis to something that is entirely other-worldly. You say our numbers don't add up, but we don't care. The only number adding we're interested

in are the ones we give to 2UE's Sharina on a Sunday night anyway.

See, she takes our birthdays, and starts adding up the digits to give us *the number* that rules our lives. As an example I was born on 29.6.1961 - no, really - which numerologically speaking adds up to 34. (About 75 per cent of you all just went back and checked my arithmetic, didn't you? You're hooked! So stay with me.) Now, to do this right I have to add my 3 and 4 together, making 7, and that is where the magic begins! Sharina says this is a *great* number, and all sorts of fabbo things are going to happen to me. Why don't you add up your number, and give Sharina a call? Tell her your problems, your hopes, your dreams. Ask her whether you should move house, sell that car, quit that job, whatever.

*(Stop snorting! And how do you think Ronald Reagan, for Chrissakes, ever got to be President of the USA? It's a known fact that Nancy did the numbers for him. I rest my case.)*

Now you're really going to think that I'm the psychic, but I'm going to make a prediction here. Whatever you tell Sharina next Sunday night, I bet she's going to tell you that you've got a great future, and everything is going to turn out alright; that you might have had one or two problems to this point, but pretty soon now there's going to be so many men of action and charm making bold romantic gestures at you that you won't be able to beat them off with a baseball bat.

Which brings me back to Stephen Hawking, who eminently deserves one. I've done some checking on him and found out that he was born *exactly* 300 years after Galileo died! Is that spooky or what? Galileo was a Capricorn too, and that explains where this whole nonsense about the earth not being the centre of the universe started from ...



# The fallacy of Inductive Skepticism

In a paper presented at the World Convention, Scott Campbell exposes some myths about induction.



*Dr Scott Campbell, philosopher, is a member of the NSW Skeptics committee. He is about to leave Australia to take up a lecturing position at a university in the UK.*

To reason inductively is to reason from the observed to the unobserved; that is, to draw a conclusion about some unobserved things on the basis of some evidential premises which refer to some observed things. For example, to infer that crows are mostly black, on the basis of the fact that observed crows have been mostly black, is to reason inductively. Reasoning from past to future is also inductive reasoning. So, for example, to infer that in the future the laws of physics will hold, on the basis of the fact that they've held so far, is to reason inductively. Most scientific reasoning involves, or ultimately relies on, inductive inferences of one sort or another, although most of them will be far more complex than these examples.

David Hume, however, thought he had found a proof that inductive reasoning could not possibly be justified.

What I propose to do is:

1. briefly outline Hume's argument against inductive reasoning;
2. sketch Karl Popper's supposed alternative; and
3. explain how it is that inductive reasoning is justified after all.

Hume's argument

First of all, Hume's argument against induction.

Consider the inference from

■ (P1) Most elephants that have been observed have been grey

to

■ (C1) Most elephants are grey.

Hume pointed out that (P1) does not logically entail (C1). The fact that most observed elephants have been grey does not guarantee that most other elephants will be grey. It is always possible that the elephants we have observed are entirely untypical of the rest of the elephants. (C1) only follows from (P1) if we add another premise:

■ (P2) The unobserved is like the observed.

So the argument becomes:

■ (P1) Most elephants that have been observed have been grey

■ (P2) The unobserved is like the observed.

Therefore

■ (C2) Most elephants are grey.

But what, Hume asked, entitles us to believe in this premise (P2), that the unobserved is like the observed? We cannot show that this premise is true by the use of pure reason, because pure reason does not tell us that the unobserved is like the observed. That means that any support for this premise must be from experience. But experience cannot possibly tell us that the unobserved is like the observed, because by definition we have not experienced the unobserved.

It might be said that in the past, the unobserved turned out to be like the observed, at least most of the time, so why shouldn't we suppose that the same will be true of the future? The fault with this appeal is that it presumes that the future will be like the past. But what entitles us to believe that? In the past, the future has been like the past, but why does that mean this will also be the case in the future? It cannot be replied that it will be so in the future because it has been so in the past, because that presumes the very question at issue, whether the future will be like the past. So with this response we end up reasoning in a circle.

Hume concluded that inductive reasoning is therefore unjustified. Hence, almost all of our common sense beliefs, and all our scientific beliefs, except those that are confined to experiences of the present moment, are unjustified.

Hume himself found this conclusion impossible to believe, and later on in life he dismissed his scepticism about induction as juvenile, and in fact did much to support inductive reasoning. And for two centuries no one paid much attention to Hume's argument. But in the middle of the 20th century, inductive scepticism came back into fashion with a vengeance, thanks mainly to Karl Popper.

Popper

Popper thought that Hume's argument could not be faulted, and we must therefore reject induction. So he attempted to fashion a philosophy of science that was based on a rejection of inductive reasoning. Not surprisingly, this proved impossible. Popper,

however, was convinced that he had succeeded, and for various reasons his view became very influential, not least because he was so evasive about what exactly his view amounted to. In the view of myself and many others, Popper's philosophy of science has given false hope to scores of pseudo-scientists (this despite the fact that Popper himself was opposed

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*... Popper's  
philosophy of  
science has given  
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scores of  
pseudo-scientists...*

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to such stuff), and has underpinned, even if only indirectly, a lot of the scepticism about science in the Humanities and Social Sciences today.

Popper's reasoning proceeded as follows. He agreed with Hume that experience is of no use for finding out, for example, whether a claim like 'Most elephants are grey' is true. But, he pointed out, experience can at least tell you sometimes that this sort of generalization is false, if you have an experience that logically contradicts the claim. Consider the claim, 'All swans are white'. This was presumed to be true, at least by Europeans, until they came to Australia and saw some black swans. So 'All swans are white' was, as Popper puts it, 'falsified'.

Popper claimed that all of science could be salvaged by relying purely on falsification, along with direct observation. But this simply isn't possible. Consider the fact that the laws of physics have so far been observed to hold. The inductivist says that this is a reason to believe that they will hold in the future. But the falsificationist has no grounds for accepting this belief. He can say, 'The claim that the laws of physics will hold in the future has at least not been falsified'. This is true, but then the claim that the laws of physics

will change radically next month has not been falsified either. The falsificationist has no way of choosing between these two statements. Yet it's obvious that we have vastly more reason to believe the former than the latter, and we don't have to wait a month to be justified in thinking this.

More failings with falsificationism

Another failing with falsificationism is that many scientific and common-sense generalizations refer to frequencies, and as a result cannot be falsified by any experience. Take, for example, the claim that 90% of all human births are male. Both common sense and inductivism tell us that we should not accept this, but it hasn't been falsified by experience so far. The fact that all births so far have been roughly 50% male does not falsify it, for this does not rule out the birth rate becoming, in the long run, 90% male. There's no logical inconsistency between a 50% birth rate so far, and a 90% birth rate overall. So Popper has no grounds for rejecting such a claim, yet clearly we should not accept it.

In fact, in most cases that science is concerned with, there are many different theories that are consistent with the evidence, including theories that we would consider plausible, and theories we would consider ludicrous. For example, the claim that most of the elephants we've seen are grey, but the rest are pink with purple spots, has no more been falsified than most elephants are grey has been. So according to Popper we have no grounds to choose between these theories. Popperism doesn't even provide us with any grounds for saying that one theory is more likely to be true than another, and anyway, Popper vehemently denied that there was such a thing as likelihood. He thought there was only falsification, and nothing else.

A further problem with falsificationism arises once we get out of the realm of simple examples like 'All swans are white', and look at more complex theories, like Newtonian theory, and Einsteinian theory,

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for these can't be falsified in Popper's strong logical sense, because they can always be adapted to accommodate observations that appear to go against them, or else we could suppose that there were some unusual conditions operating at the time that we were not aware of that explain our observation. Now, according to Popper, if a theory cannot in principle be falsified, then it is not a scientific theory. Hence, Popperism entails that the Newtonian and Einsteinian theories are not scientific, which is clearly false - they are.

Popperians at this point usually object that if the adaptations to a theory are *ad hoc*, then that is a bad thing. But as has been pointed out by many, if one is a Popperian, one's own theory prevents one from being entitled to make any such objection to *ad hoc* adjustments. The inductivist, on the other hand, has no problem with explaining why *ad hoc* adjustments are bad - it's because they are unlikely to be true, and so they reduce the likeliness of your theory.

Despite the manifest inadequacy of Popper's theory, his view became widespread in many areas, especially so in the sciences. This was due in large part to the fact that Popper's presentation of it was extremely evasive, and as a result it has been widely misunderstood. Many people who profess to accept Popperism in fact accept something like the complete opposite of what Popper actually maintained.

Another reason was that Popperism sounds a bit like what was called in the 19th century 'eliminative inductivism'. According to this view, if you have a certain number of likely theories, then you can test each theory, one by one, and as you go through eliminating the possibilities, the theories that remain will increase in likelihood. This is obviously a reasonable view, but despite a superficial resemblance, it's entirely different to Popperian anti-inductivism. (It is, in fact, an inductivist view.) Popper denied that theories could increase in likelihood; in addition, he thought that there

was an infinite number of possible hypotheses anyway, so the odds of any theory being true were always zero.

### Consequences of Popperism

Popper was a believer in science, and he really believed that he had shown how it is that science is rational, despite the fact that, as he thought, inductivism is irrational. And his great self-belief won him a number of converts. However, it didn't take long for some of these converts to realize that if Popper and Hume were right, there really was no way in most cases of choosing between theories.

Hence, you ended up with his follower Paul Feyerabend writing a book called *Against Method*, and defending the view he called 'epistemological anarchy'. According to this notorious view, voodoo was just as good, or just as bad, as modern physics - the one was no more justified than the other. And although Feyerabend wrote at tedious length about the history of science as though the history itself supported his view, the only real argument he had for his view was that David Hume and Popper were right, and that past experience gives us no reason to prefer one theory over another.

Popper was outraged, and considered this a perversion of his view, but really, Feyerabend was simply doing what Popper never did, namely taking Popper's actual views literally and seriously, and drawing the conclusions that follow from them. If you accept Popperism, if you accept that the early Hume was right, then you have to accept that in most cases we have no grounds for deciding that one theory is better than another.

### A concrete example

That is why you will sometimes hear pseudo-scientists defending themselves on Popperian grounds. For instance, at the 1999 *Unconvention* in London, which is run by *Fortean Times* magazine, in front of a large audience a prominent and eminent Fortean and biologist explicitly defended the claims of a

visiting Australian paranormalist about the supposed poltergeist phenomena at Humpty Doo, against my claims that it was faked, on Popperian grounds. He started, appropriately enough, by saying that he 'doesn't know much about the philosophy of science, but...', and went on to say that Popper had shown that you can't prove things either way in science, so who was I to say that the phenomena were faked? Nevertheless, he demonstrated the irrelevance of this point himself by then going on to provide some evidence (or at least what he thought was evidence) for the paranormal theory. What counts, as he himself realized, underneath the Popperian rhetoric, was likelihood.

So Popper is nothing but a bad joke, the inevitable result of taking an unbelievable and extreme philosophical argument seriously; a position that not even its creator could bring himself to accept. Popperism thankfully seems to have had its day in philosophy, but it is still popular in other departments, and its legacy of scepticism - not our sort of scepticism, but scepticism about the *possibility* of science - continues to this day.

### The response to inductive scepticism

I shall now explain how we should respond to Hume's argument. Consider this classic inductive argument:

- The sun has risen every day in recorded history.
- So it will rise tomorrow.

### Deductivism

Hume argued by pointing out that the premise here does not entail the conclusion, and so what is needed to entail the conclusion is another premise, to the effect that the future will be like the past. But there is a crucial assumption that Hume is making here, and that is what the late Sydney philosopher David Stove called 'deductivism'. According to this view, a premise or premises can only give you a reason to believe a conclusion if they *entail* the conclusion. The term 'deductive logic' is given to arguments that deal with entailment, hence the name 'deductivism'.

## The fallacy of Inductive Skepticism

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Here's a classic example of a deductive or, as its sometimes called, demonstrative argument:

- Socrates is a man
- All men are mortal

Therefore

- Socrates is a mortal

Here the premises entail or guarantee the conclusion. That is, the conclusion must be true if the premises are true. It's impossible for the conclusion to be false if the premises are true. We can see it in this way: the premises in a deductive argument provide 100% support for the conclusion.

So deductivism is the view that the only good arguments are deductive ones, where the premises provide 100% support to their conclusions. It is the view that if you don't have 100% support, if your premises do not entail or make certain your conclusion, then your premises provide no support at all for the conclusion.

However, no good reason has ever been given for accepting deductivism. Hume provided no argument for it; rather, he assumed it. And once stated it's hard to see how there could be an argument for it. What's more, if deductivism is true, then the argument for deductivism would have to entail deductivism, that is, be deductive itself, but it is hard to see that any sound deductive argument for deductivism can be given.

### Degrees of support

What we should accept, says Stove and other anti-deductivists, is what seems obvious - that you can have good reasons for believing something, or at least for thinking that something is likely to be true, even though those reasons are not totally 100% conclusive, and don't provide a water-tight guarantee for the conclusion. Rather than supposing, as deductivists such as Popper do, that either the premises entail a conclusion, or else they provide no support at all to it, we should suppose that support *comes in degrees*. And we should accept, what Popper denied, that one theory can be more *likely* to

be true than another. Nothing in Hume or Popper gives us any reason for denying this.

To deny deductivism is to accept what has been called 'logical probability'. Hume himself, later in life, argued very strongly (in, eg, his material on miracles) for what was in effect, logical probability - he argued that we must weigh up evidence to see what it supports.

We can say, then, for example, that it's more likely that Atlantis did not exist than that it did, even though neither claim has been falsified. It's always possible that it could turn out that Atlantis did exist after all. But there's hugely more reason to believe it didn't exist than that it did. And it's rational to go with what is likely, given the evidence, rather than with what is unlikely. You should never say that it's 100% certain that Atlantis did not exist, but you can certainly say that it's overwhelmingly likely that it did not. (For a recent defence of logical probability, see James Franklin, 'Logical Probability Resurrected', *Erkenntnis*, forthcoming.)

Looking back at our sun argument, we don't need to add any premises to the effect that the future will be like the past. The first premise itself, although it doesn't entail the conclusion, supports it, that is, gives us a reason to believe that the conclusion is true.

### Challenging logical probabilism

Those who have been steeped in Popper may still be suspicious. They may say, it's all very well talking about degrees of support, but why should we suppose that inductive premises, such as this one about the sun, provide any degree of support to their conclusions? You can't derive the conclusion from the premise in the way that you can with a logical entailment, so why should we believe this?

One answer to this question is that it's just obvious that inductive reasoning is rational. No-one sane can possibly deny it in practice, and no-one sane does. This is not necessarily true of other types of scepticism - you could be a genuine sceptic about the external world, without it making a difference to your behaviour. But if you are

a genuine sceptic about induction, it must necessarily affect your behaviour. If it doesn't, you're simply being inconsistent - you may say you're an inductive sceptic, but really you're not.

No-one sane really thinks that there's no reason to believe that the laws of gravity will continue to hold in the next minute. We all know it's enormously more reasonable to expect that jumping off a cliff will result in you plummeting to your death than expecting that plummeting to your death is only one of an enormous number of other equally possible outcomes. So one answer to this deductivist challenge to inductivism and logical probability is that you, the deductivist, believe it as much as I do, and it's perfectly clear that it is rational to do so, and to deny it is clearly the height of irrationality. To give up induction makes about as much sense as giving up mathematics, and is just as impossible in practice. Moreover, no-one has ever given a reason why we should abandon induction and logical probability that has the slightest plausibility.

It would still be a major achievement, though, if we could provide a proof that induction is rationally justified. Also, there are still Popperians and their descendants who deny induction, who deny that premises about the observed can make conclusions about the unobserved probable. Even though their own actions give the lie to these assertions, it would be good to have a proof that induction is rational, to remove any ground that these doubters may seem to have for their extreme views. So what I will do now is provide such a proof.

### The 'sampling' justification

Inductive scepticism, as accepted by the early Hume and by Popper, claims that *no* inductive inference is ever justified. So inductive scepticism would be proved to be wrong if we proved that at least one inductive inference, or one class of inductive inference, is justified. I will show that a certain type of inductive reasoning, namely inductive generaliza-

tion, where one extrapolates from sample to population, can be proved by some uncontroversial and obvious logical and mathematical principles.

The basic idea comes from the 18th century mathematician and philosopher Pierre Laplace, who in turn was influenced by the work of a 17th century mathematician called Jacques Bernoulli. But the main expression of the argument was first set out in the 1940s by the late Harvard Professor, Donald Cary Williams in his book *The Ground of Induction* (New York: Russell and Russell, 1963; first pub. 1947), who I believe was one of the great under-appreciated philosophers of the 20th century. It was then revived in the 1980s by the late Sydney philosopher David Stove in his book *The Rationality of Induction* (Oxford: Clarendon Press, 1986).

### Certainty v probability

First of all, it needs to be acknowledged that inductive arguments never deal in certainty, but only with probability. One thing that Hume's argument definitely does show - and this was itself a major achievement, because in his time many people believed otherwise - is that our inductive arguments or inferences cannot make their conclusions certain. Only deductive arguments, or demonstrative arguments, as they're sometimes called, can do that.

Now, suppose you have an urn with 100 balls in it, and that 98 of these balls are red. What's the likelihood that the ball that you are about to pick out will be red? Obviously, there's a 98% chance of you getting a red ball. Your premises here, that there are 100 balls, 98 of which are red, do not make certain the conclusion that you will pick out a red ball, but they make it 98% probable. This sort of reasoning is uncontroversial.

Now let's go back to induction, and look at a sample-to-population extrapolation or generalization. Suppose you have observed 3000 ravens, and 95% of them were black, and suppose you know nothing else that is relevant, even indirectly, about raven colour (suppose you're *very*

ignorant of the world, even more than a creationist is).

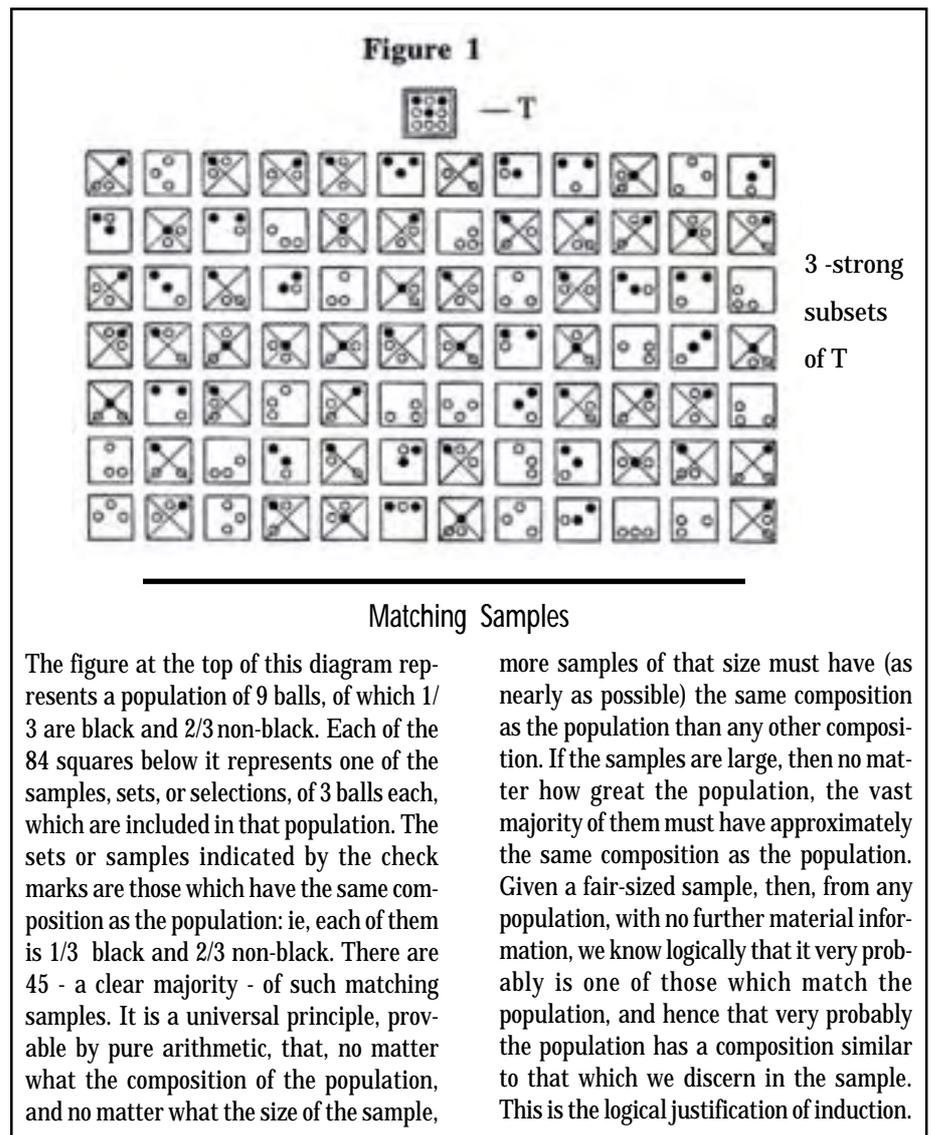
This sample of 3000 ravens you have observed is one of an extremely large number of the possible subsets of 3000 ravens that exist in the raven population. Now, it is mathematical fact, well-known to statisticians, but not so well-known by the general population, that the vast majority of possible subsets of a population are very similar to the population as a whole, as long as the subsets are not too small. Call these subsets the 'representative' subsets.

Most possible subsets, then, are 'representative' subsets. What this entails is this. Suppose your population is the raven population. Consider any property you like, say blackness. The percentage of ravens in the total raven population who are

black will therefore be quite close to the percentage of ravens who are black in most of the possible subsets of the raven population. A small percentage of the possible subsets - the 'unrepresentative' subsets - will not be similar in this regard. But most of the possible subsets will.

I should point out here that it does not matter how large the total population is. As long as the sample is not too small - we can make this mathematically precise, although I won't do that here - the total population can be as large as you like, as long as it's not infinite, which no actual population is. The principle still applies.

To try to give you more of a feel for the statistical sampling principle, consider the following diagram which Williams uses (Figure 1).



### The statistical sampling principle

Suppose that the square on top, which I have labelled T, is our total population, a set of 9 balls. Six of the balls in T are white, and three are black, so two-thirds are white, and one-third black. Suppose that we also consider some subsets, or samples, from T, that contain three of the balls from T. As T has nine balls, then a bit of maths, which I won't bore you with, will tell us that there are 84 possible subsets of T that have three balls.

Below T are all 84 of the possible subsets of T that contain three balls, and those subsets that are marked with a cross are all those that exactly match T in having two-thirds white balls, and one-third black. Now if you count up all the subsets that exactly match T in this respect, the number is 45. So 45 out of the 84 possible subsets of T exactly match T in respect of the black-white ratio. 45 out of 84 is 53.5%

So if you picked out one of these sets at random, the chances are more than 50% that you'd get a representative set - ie, a set that matches the total population in colour ratio. Now 53.5% is okay, but it's not that great, and that's why we can't be too confident when we're dealing with small samples. But if you were to increase the number of balls in T, and increase the number of balls in the subsets you're considering, then this percentage will be greatly increased. For example, suppose T has twenty-four balls, and the subsets have six balls. In such a case there will be 40,960 subsets (so obviously I

can't put them on a diagram for you). But some maths will tell us that in this case 80% of the subsets have a colour ratio close to T - not that 80% exactly match T, but that 80% either exactly match or are very close to matching T. And this proportion will get over 95% when we consider still larger sets and subsets. So that should give you a better understanding of the principles underlying this statistical principle.

So most possible subsets are representative. We can treat getting a sample of ravens, then, as like dipping into a barrel containing all the possible raven subsets of that size, and drawing one out. Most of these possible subsets are representative. So just as it was most likely that we would pick a red ball out of the urn, because most of the balls were red, it is most likely that we'll get a representative subset of ravens, because most possible subsets are representative. We could be unlucky, and get one of the few unrepresentative subsets, just as we could be unlucky with the urn and get one of the few non-red balls. But most likely we won't. We should expect that now and again we will be unlucky, and get an unrepresentative sample, and in fact we are unlucky now and again, but this is no reason to think that inductive extrapolation in general is worthless, any more than someone getting struck by a car means that it was irrational to ever go outside. The odds are that the sample is representative.

Of course, if we have a good reason to think that our sample is biased and has given us an unrepresenta-

tive subset, or that our *method* of sampling is biased, then we are no longer entitled to extrapolate from that sample. There are plenty of ways in which an attempt at sampling can go wrong, and we get plenty of evidence of that in, for example, alternative medicine, or self-selecting TV polls. But if we have no reason to think that our sample is biased, then we are entitled to suppose that probably, although not definitely, it is representative, and hence we can draw the conclusion that probably, although not definitely, the total population is similar to it. (See my forthcoming article in the *Australasian Journal of Philosophy*, 'Fixing A Hole in the Ground of Induction', for more on supposed problems with the sampling justification.)

So here we have a proof of one kind of inductive inference, namely sample-to-population inferences. This proof does not apply to all kinds of inductive inferences, but that does not matter - the claim of inductive scepticism was that no inductive inference could possibly be justified, and we have seen that this is false. If the Popperian deductivist wishes to reject the sampling argument, then he must hold that it is not true that the odds of picking a red ball out of the urn are 98%. As such a view would clearly be absurd, we can safely say that not only has no reason been given to support inductive scepticism, it can safely be consigned to the rubbish bin of history. Nor need we pay any attention to those poseurs who tell us that physics is no better than voodoo.



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# National Convention 2001 Brisbane

Details of dates, theme and venue will appear in later issues.

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# A fresh perspective on the Mahogany Ship

Bob Nixon reports on his investigation into the evidence for a legendary lost shipwreck near Warrnambool in Victoria.

Is it really a 16th century Portuguese ship, or is the answer more mundane?



*By day, Bob Nixon is a mild mannered business analyst, but it is in his secret guise as Chief Investigator for the Skeptic, that he has a lot more fun.*

In 1836, so the story goes, a pair of sealers seeking safety after being shipwrecked and losing their captain, came across the wreck of a ship in the sand dunes between present day Warrnambool and Port Fairy on the coast of Western Victoria. So began the legend of the Mahogany Ship, a mystery that persists to this day and has led to calls to rewrite Australian history, to government sponsored searches and rewards and to a whole industry in tourism. When Joe Nickell, Richard Cadena and I travelled to Warrnambool in search of the legend the very first thing that caught our eye on the approach to the town was a sign reading “Mahogany Ship Replica”. The local MacDonald’s restaurant had a supposedly full size replica of a sailing ship, attached to the children’s playground. It would not be the first time we would see evidence of the importance of the Mahogany Ship story to the town.

## In the beginning

To start at the beginning, Gibbs and Wilson, our two surviving sealers, reported to Captain John Mills of the Port Fairy<sup>1</sup> whaling station, saying that they had encountered a wreck during their trip. Subsequent writers have embellished their story with descriptions of the site, but there is no indication of how close Gibbs and Wilson approached or exactly what it was they saw. Mills was not particularly impressed, it seems.

Although he led an expedition to recover the sealers’ boat almost immediately, it was not until 1843, seven years after the initial report, that Mills set out to specifically search for the wreck. By this time he had been appointed to the post of harbour master at Port Fairy, so we can assume that ships were not unfamiliar to him. Much of the description of what he saw comes from Hugh Donnelly, who claims to have been part of Mills’ crew on that first trip. More of Donnelly later. Mills is said to have attempted to remove a sample of the ship’s timbers, finding them hard and apparently of a wood similar in appearance to mahogany. Some writers have Mills standing on the deck of the wreck. Mills again visited the site in 1847, and by this time the site was apparently well known by local people, black and white. Aboriginals in the area were said to have long knowledge of the wreck, with the older members of local tribes saying that it had been there when they were children, and was considered old even then.

Among the more important visitors to the wreck site, at least in terms of tracking down the legend is John Mason, whom some writers give the title “Captain”. Mason visited the site in 1846, ten years after the first report. Thirty years later he wrote a letter to the Melbourne *Argus* describing his encounter with the wreck. I examine this important let-

## Mahogany Ship

ter and its subsequent use by historians, in a separate article in this issue.

### A shifting wreck

In the years between 1836 and 1880, when the wreck disappeared, people who visited the site wrote some twenty-seven reports. It is fair to surmise that many people who visited this, by now well-known site, chose not to write their story. The written reports lead us to a major problem with the story. The wreck, it seems, moved. It is variously described as close to Port Fairy, mid-way between Port Fairy and Warrnambool, three miles west of Warrnambool. She is said to be high in the hummocks, well above the high tide mark, in the water, between two hummocks, at the end of a gap in the hummocks. She is identified to be in various states of decay, in various orientations, bows pointing west and north. In short there is little agreement among the reports.

Then we have the artifacts. Timber from the wreck is supposed to have been used by Alexander Rollo to build a mantelpiece. Other timber was said to have been used by a local to construct a chair. A set of keys located at Limeburner's Point was linked to the Mahogany Ship story, as were weapons and coins. Almost anything found for which there was no immediate explanation was linked to the ancient wreck, and each link added to the mystery and the confusion. In one case a "Spanish rapier" was found in the bed of the Moyne River at Port Fairy. It caused a bit of a stir until a local captain claimed it as his, lost overboard in 1843 and of entirely English construction. By 1896, when Joseph Archibald, a Port Fairy historian, interviewed Donnelly the story is pretty well garbled and it was difficult to get any sense of the original.

*The Recollections of Geoffrey Hamlyn* by Henry Kingsley was published in 1859. Entirely a work of fiction it mentions a wreck on the

Victorian coast that is assumed by some to refer to the Mahogany ship. According to Jack Loney, a footnote in the book suggests that a wreck like that described in the text can be found at the Port Fairy end of Portland Bay<sup>2</sup>. A copy of the book that we located in the Warrnambool library contains no such footnote<sup>3</sup>, but even if this was lost to the later editions of the work, Loney's wording of the footnote places the wreck at the eastern end of Portland Bay, near Port Fairy: the wrong bay.<sup>4</sup>



*Avast there! Joe Nickell aboard the MacReplica caravel.*

### The Shipwreck Coast

The part of the coast we're dealing with here lies at the heart of the area today advertised as the Shipwreck Coast in the tourist brochures. Literally dozens of ships were wrecked in the region and a trip down the Great Ocean Road will take the traveller past a good number of lighthouses that sprang up to make the coast less of a hazard. An 1847 newspaper of the region contains the following article:

*A Wreck – About two miles on the Belfast [Port Fairy] side of Warrnambool, the wreck of, probably, a three hundred ton vessel, is said to be thrown completely into the hummocks, and buried in the sand. The tops of her timbers are some distance out of the sand, but her deck is completely gone, and what portion of her bottom remains can only be matter of mere conjecture. One of the most singular facts about this discovery is, that the natives are believed to be in perfect ignorance of the time and every other circumstance con-*

*nected with the loss of this vessel, and have no remembrance of the event of her being taken there. Sometime in 1841 the discovery of a number of articles strewed along the beach from the estuary of the Fitz Roy towards Port Fairy, was made and the conclusion which a party of gentlemen, who at the time proceeded from Portland to ascertain the cause, came to, was that a vessel must have been wrecked in the straits, and from several articles of French manufacture that were then found it was deemed that the vessel had been a French whaler. We understand that about Moonlight Head, fragments of similar articles continue to be thrown up by the surf. Whether the wreck, thus brought to light, may reveal any further particulars we are unable to say, but we trust, means will be used to investigate the subject, should our report prove correct.<sup>5</sup>*

This article contains a number of aspects that are familiar. The local Aborigines can offer no help in explaining the wreck; the wreck itself is in the hummocks and buried by sand; the location is within the range of the estimates for the Mahogany Ship and finally the date is, I think, highly significant.

### Chronology

Let's recap the chronology:

**1836** Gibbs and Wilson report a wreck to Captain John Mills at Port Fairy. The two seamen have themselves just escaped from a wreck of their own, losing their captain in the process. There is no reliable record of their description or any indication of how close they approached the wreck. They had some eighteen kilometres to travel and, given that their boat had just been capsized at sea, it's reasonable to speculate that the weather was bad and visibility poor. Mills mounts an expedition by sea to recover the boat and Smith's body. Hugh Donnelly later claimed to have been a member of the crew during this trip. The expedition does not sight the wreck reported by Gibbs and Wilson.

**1841** If the *Portland Guardian* article is to be taken at face value, a French whaling vessel founders in Bass Strait. Many items wash ashore along the coast and the hull is driven ashore near Warrnambool.

**1843** Captain Mills and a small crew, perhaps including Hugh Donnelly, sets out in search of the wreck described by Gibbs and Wilson. They do locate a wreck. Donnelly reports that Mills stood on the deck of the wreck.

**1846** John Mason visits the wreck site and 30 years later reports that the "spars and deck were gone"<sup>6</sup>.

**1847** Mills visits the site of the wreck a second time. That same year the *Portland Guardian* reports the finding of a wreck and speculates, based on the finding of artifacts found at the site that it is the result of the 1841 loss of a French whaler.

**1880** The wreck known locally as the Mahogany Ship is seen for the last time by M. C. Donnelly (whom some writers make a point of saying is no relation of Hugh Donnelly's). According to Loney in this same year a whaling punt lying in the hummocks is burned.

#### Cherchez la whaler

Loney's mention of the whaling punt is significant. Loney, who died in 1995 and was a recognized authority on the early maritime history of this country with 57 books to his name, is generally sceptical; he at least comes to no firm conclusions regarding the legend. Loney speculates that the burning of this small boat and the disappearance of the Mahogany Ship in the same year may be related. That a small boat was burned at the time is less important than the fact that wrecks were not unusual sights on this part of the coast. There were many in the area between Warrnambool and Port Fairy and it seems clear that any wreck tripped over by anyone was dubbed the Mahogany Ship.

The French whaler is simply my choice as one plausible source of the legend because it best fits the dates and was probably the first to be reliably reported. I have to say that I totally discount the report of Gibbs and Wilson on the grounds that these men were in no condition to make an accurate assessment of what they saw. A mission to recover their boat, while successful in that task, did not encounter the wreck they reported despite the presence on the recovery expedition of both men. We are also faced here with the difficulty of identifying what it was Gibbs and Wilson actually reported, since we only have later reports of what they are supposed to have said.



*A popular theme in Warrnambool*

#### Doubts about Donnelly

We must also deal with the comments of Hugh Donnelly during his 1896 interview with Archibald. Donnelly claimed to have been with Mills during both the recovery mission and the 1843 visit to the wreck and his account has become fundamental to the subsequent complicated legend. Serious doubts have been raised about Donnelly's reports, most recently by Jenny Fawcett, a Warrnambool historian who has identified discrepancies in Donnelly's various reports. It seems likely from Ms Fawcett's research that Donnelly was not a member of the crew that

carried Mills to the site, and may in fact have been repeating the description given to him by a friend who was. Ms Fawcett quotes a letter from Hugh Donnelly published in the *Warrnambool Standard* of November 29, 1881:

*...seeing you draw attention to an ancient wreck known to be lying on the hummocks between Warrnambool and Belfast, I, having joined the whaling party on Port Fairy Island under the command of Captain Campbell in 1842, and remained several years in the service, have often heard from the whalers of a wreck being seen in the locality mentioned, but nothing further. If it was seen by any of the old whalers, the attention of Mr James Clarke, of Panmure is worth notice... .*

Fifteen years later Donnelly was telling Archibald that he personally had seen the ancient wreck many times and his stories made him something of an authority on the subject. In fact Ms Fawcett has located immigration documents identifying Hugh Donnelly, his wife Anne and son Thomas arriving in Australia in 1841, fully five years after he claimed he was aboard the boat which set out to recover the capsized boat and the body of Smith. It remains a

possibility that Donnelly was aboard the boat that carried Mills to the wreck for the first time in 1843, but this is contradicted by the above passage where Donnelly does seem to be saying that he only heard about the wreck.<sup>7</sup>

A web site<sup>8</sup> contains a series of interesting letters from the *Warrnambool Standard* of 1890 and a range of other resources. It shows that even then the debate was raging over where the ship was and what became of it. Significantly one of the letters is from Alex Rollo, mentioned above as reportedly having taken some of the wood to construct a mantelpiece. He makes no mention of this incident in his letter.

### Further problems

There are some other problems with the story of the Mahogany ship that are worthy of mention, if only because they require answering by those who seek to have us believe that the remains of a particular wreck are there to be discovered.

Why did no one ever bother to photograph the wreck? On the wall of the Warrnambool library you will find a large number of photographs taken of local dignitaries at the time of Warrnambool's incorporation in 1860, yet no one seems to have taken the opportunity to trek out to the wreck, famous locally by now, and snap a picture of it. Among those photographed, by the way, is John Mason.

Why is the actual site of the wreck not more clearly known? The most detailed description comes from Captain Mills, probably the first person to actually report on having visited the wreck. His position was that from the high point of Tower Hill the wreck was to be seen in a direct line with the Iron Church. While the building itself no longer exists, old maps do give a clear position for the old church and the position Mills describes can be identified.

### Recent searches

It is this general area that Peter D'Aloisio, a diviner and professional water borer, has chosen to search. Peter led Richard, Joe and myself to his site during our visit and let us see the remains of the hole he drilled in 1992. Today a sealed metal sleeve lines the 34 feet deep hole, which is full of water. Peter claims to have struck something metallic in the hole and both he and later a diver have been to the bottom, each confirming that something is down there. Peter believes that he has found an anchor some nine feet in length and, while he'd like it to be the Mahogany Ship, he's reluctant to make any claims regarding the origin of the anchor. A sample of metal taken from the hole was identified at Monash University as most likely to have come from a broken drill bit from Peter's own rig. A team from La Trobe University

searched a site several kilometres to the west in June 2000, close to the position Lieutenant Stanley, a Royal Navy officer, suggested was the most likely position for the wreck, as he understood the early accounts. Stanley made a map that has been widely published and can be found in many of the accounts of the Mahogany Ship. The Stanley site, unlike the one given by Mills, is easily accessible by land or sea. Peter D'Aloisio's drill site is nearly one thousand metres inland, on the northern edge of the coastal sand dunes while the Stanley site is only a short distance from the beach.

### Mystery of Gorman's Lane

Much of the speculation about the site mentions Gormans Lane, which runs beside a farming property originally owned by a gentleman named Gorman. In 1836 the area was sparsely populated and the principal community was a whaling station at Port Fairy, but by 1880, when the last reported sighting of the remains of the Mahogany Ship was reported, the entire area was well established as a farming and fishing area. Gorman's Lane (the spelling was to change later) was a well-established name and the land immediately behind the coastal dunes was well used by cattle farmers.

In 1860 Warrnambool had grown sufficiently to be called a town in its own right and had taken over from Port Fairy as the centre of the local region. It is therefore something of a surprise that the site of the Mahogany Ship is so difficult to establish. Hundreds of people may have visited the site at one time or another and thousands of people must surely have heard of a wreck being only a few kilometres from their own home.

Added to this, we must remember that Mason's letter, which vaguely suggests yet another location, was published four years before the last reported sighting of the Mahogany Ship. Indeed, Mason says that "The wreck lies about midway between Belfast and Warrnambool, and is probably by this time entirely covered with drift sand"; clearly he is

using the present tense. The number of letters that are reproduced at the South West TAFE website suggests that one or another site was well known to the various correspondents, many of whom claim to have personal knowledge of the wreck. I'm a little surprised not to find accounts by journalists of having seen the wreck themselves. There were newspapers, sometimes more than one, in both Warrnambool and Port Fairy at the time, yet no contemporary report was published describing an actual visit to the wreck.

### Fact, myth or hoax?

Local myth, tourist attraction, historical fact or perhaps even a hoax. Whatever the truth, the Mahogany Ship legend continues to occupy a good many people and to draw visitors to the region of the Shipwreck Coast. It may be that someone will trip over ancient timbers, or an anchor, or the bones of a European. If and when they do the legend will be rekindled and the search reinvigorated, but we have now reached the point in the ongoing search that there is unlikely to be agreement among the various factions defending their own theories.

### Notes

<sup>1</sup> At the time Port Fairy was known as Belfast. For reasons of clarity I will use the modern name throughout.

<sup>2</sup> *The Mahogany Ship*, Jack Loney. Seventh edition. Marine History Publications 1998. p 6.

<sup>3</sup> *The Recollections of Geoffrey Hamlyn*, Henry Kingsley 1859. Seal Australian Classics edition 1995

<sup>4</sup> The full text of the relevant passage appears in my article "The Real Secret History" which follows in this issue,

<sup>5</sup> *The Portland Guardian*, Friday October 29, 1847. Joe Nickell and myself located the article in the State Library of Victoria.

<sup>6</sup> *The Argus*, Saturday April 1, 1876. The full text of the letter appears in "The Real Secret History" in this issue.

<sup>7</sup> <http://www.standard.net.au/~jwilliams/mahogany.htm>.

<sup>8</sup> <http://www.swtafe.vic.edu.au/lrc/collections/mahoganyship/tableofcontents.htm>



# The *real* 'secret history'

Sir –

*Riding along the beach from Port Fairy to Warrnambool in the summer of 1846, my attention was drawn to the hull of a vessel embedded high and dry in the Hummocks far above the reach of any tide. It appeared to have been that of a vessel about 100 tons burden, and from its bleached and weather-beaten appearance, must have remained there many years. The spars and deck were gone, and the hull was full of drift sand. The timber of which she was built had the appearance of cedar of mahogany.*

*The fact of the vessel being in that position was well known to the whalers in 1836, when the first whaling station was formed in the neighbourhood, and the oldest native, when questioned, stated their knowledge of it extended from their earliest recollections.*

*My attention was again directed to the wreck during a conversation with Mr M'Gowan, the superintendent of the Post-office in 1869, who, on making inquiries as to the exact locality, informed me that it was supposed to be one of a fleet of Portuguese or Spanish discovery ships, one of them having parted from the others during a storm, and was never heard of again. He referred me to a notice of a wreck having appeared in the novel Geoffrey Hamlyn, written by Henry Kingsley in which it is set down as a Dutch or Spanish vessel, and forms the subject of a remark from one of the characters, a doctor, who said that the English should never sneer at those two nations - they were before you everywhere.*

*The wreck lies about midway between Belfast and Warrnambool, and is probably by this time entirely covered with drift sand, as during a search made for it within the last few months it was not to be seen –*

Yours &c

John Mason

Actuary Savings Bank,  
Belfast, Port Fairy<sup>1</sup>

This letter is one of the keys to the mystery of the Mahogany Ship. It has been cited more often than any other document to support one or another view of the legend. Rarely is it quoted fully, as I have done above. Kenneth Gordon McIntyre used it in his work *The Secret Discovery of Australia*, an argument that the Portuguese were the first to arrive on the East coast of Australia. For a time this book was required reading for students of Australian history in Victorian secondary schools. McIntyre uses the Mahogany Ship tale to support this view. Here is McIntyre's version of the Mason letter, again, I will quote fully:

*Riding along the beach from Port Fairy to Warrnambool in the summer of 1846, my attention was attracted to the hull of a vessel embedded high and dry in the hummocks, far above the reach of the tide. It appears to have been that*

*of a vessel of about 100 tons burden, and from its bleached and weather-beaten appearance must have been there very many years. The spars and decks were gone, and the hull full of drift sand. The timber of which she was built had the appearance of either mahogany or cedar.*

*The fact of the vessel being in that position was well known to whalers in 1841, when the first whaling station was formed in that neighbourhood and the oldest natives when they were questioned stated that their knowledge of it extended from their earliest recollection.<sup>2</sup>*

## Discrepancies

There are some significant discrepancies between the original and McIntyre's version. One might charitably suggest that he was just sloppy in his copying, but I have taken the less charitable view, because McIntyre's version clearly contains invented support for his theory. The failure to capitalize the "H" in the word "hummocks", and the substitution of "the tide" for "any tide" might be merely sloppy copying, but the other errors are less easily explained away.

McIntyre adds the word "very" to "many years". Why? McIntyre seeks to convince his readers that the Mahogany Ship was a Portuguese caravel, and for that to be true the wreck must have been deposited on the beach early. Interestingly, he does not need to artificially enhance the age of the wreck, since there are numerous accounts that would support the view that it was old. Best among

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Bob Nixon follows up the preceding story with suggestions of misreporting and the selective use of evidence.

## The *real* 'secret history'

these is the reports of the view of local Aborigines that they knew nothing of the origin of the ship, only that it had been there for a long time.

From McIntyre the word "deck" becomes "decks". Why? McIntyre needs to have his readers believe that this is a large ship, with multiple decks. A caravel had two or three internal decks.

The year 1836 becomes 1841. Why? This seemed at first to be a simple error, and actually one that weakened McIntyre's case since it is a more modern date than in the original letter. I subsequently located a copy of the Mason letter reprinted in the *Warrnambool Standard* on April 4. In this version an error has crept in, giving the year 1846 instead of

1836, which would have supported his case even more than the one he made up.

McIntyre has "mahogany" preceding "cedar", perhaps because by the time he wrote his book the Mahogany Ship was well entrenched as the name of this mystery. The Cedar Ship does not have the same ring to it. Most significantly the entire passage referring to the story appearing in a novel is omitted. This passage, wherein Mason paraphrases from Kingsley's work, suggests of course that the ship may have been Spanish or Dutch, and McIntyre needs the wreck to be Portuguese, so he can't allow his readers to become confused. It may be that Kingsley's work, though one of fiction, borrowed from

*she was very old; whether Dutch or Spanish I know not. You English should never sneer at those two nations; they were before you everywhere.*<sup>4</sup>

It would seem that Mason had not read the book at the time he wrote his letter, or the "hopeless, black basaltic cliffs" would have suggested to him that Kingsley, even if he was borrowing from fact, was not speaking of the same wreck that Mason remembered. In Warrnambool, Joe Nickell, Richard Cadena and I asked several people familiar with both the local area and the legend, about these cliffs. No one was able to suggest a possible site that suited the description.

McIntyre further quotes Mason as saying "she struck me as a vessel of a model altogether unfamiliar, and at variance in some respects with the rules of ship-building as far as we know them". Certainly this does not appear in Mason's letter to *The Argus*, and McIntyre does not attribute the quote. It appears in the paragraph following his version of the letter and the reader is obviously supposed to accept that it belongs with it.

### Chinese whispers

Avis Quarrell appears to have mistaken McIntyre for someone who could read and copy a simple letter to the editor and used his edited version in her book, produced with the tourist in mind, *The Legend of the Mahogany Ship*:

*...attention was drawn to the hull of a vessel embedded high and dry in the hummocks, far above the reach of the tide. It appears to have been a vessel of about 100 tons burden, and from its bleached and weatherbeaten timbers seemed to resemble mahogany or cedar, and that the style of the vessel was altogether unfamiliar.*<sup>5</sup>

Here we have the literary equivalent of Chinese whispers, with the message changing with each telling. The addition by McIntyre becomes part of the original letter under Quarrell. Quarrell's booklet is clearly designed for the tourist and is only a brief description of the legend. While



*A modern replica of a 16th century caravel*

1836. I believe McIntyre found and worked from this letter, rather than the original one from the *Argus*. It may even be that McIntyre saw, as I did, that the French whaler wrecked in 1841 was a likely candidate for the original Mahogany Ship, and so had to eliminate it from the list of possibilities<sup>3</sup>. Editing the letter to give the impression that the wreck was well known prior to the year the Frenchman washed ashore would have the desired effect. Ironically, had he found the original letter in the *Argus*, McIntyre could have used the date

the poorly known facts behind the legend of the Mahogany Ship, and it does seem to have been taken this way by Mason.

### A work of fiction

For the record, I quote from Kingsley's book. The doctor is speaking:

*Down the coast here, under a hopeless, black basaltic cliff, is to be seen a wreck of a very very old ship, now covered with coral and seaweed. I waited down there for a spring tide, to examine her, but could determine nothing, save that*

the rewriting is unforgivable, Quarrell makes no claims to having written a scholarly work. This is not the case with McIntyre, who has deliberately invented evidence to support his claim that the Portuguese beat Cook to the east coast. I have used Quarrell here only to illustrate how errors, deliberate or otherwise, in a work by someone who seeks to be taken seriously, can propagate in the hands of less skilled researchers. It is, I hope, a lesson for anyone who seeks to research any subject with any degree of professionalism. The simple rule must be to return to the original source wherever possible.

I have no opinion regarding Portuguese primacy, and McIntyre's theory may be correct. His book contains a range of evidence other than the Mahogany Ship story, but I believe I have demonstrated here that McIntyre doctored the evidence of the Mason letter, altering the emphasis to artificially support his theory. It says a great deal about his scholarship and the lengths to which he is prepared to go to have his theory taken seriously. As a result, I contend that his entire book must be suspect. Any subsequent conclusion arrived at based upon McIntyre's book (such as Quarrell's booklet) must also be suspect.

#### Notes

<sup>1</sup> *The Argus*, Saturday April 1, 1876

<sup>2</sup> *The Secret Discovery of Australia*. Kenneth Gordon McIntyre. Revised and abridged edition 1982, Pan Books Australia, p 161.

<sup>3</sup> I am grateful to Georgina Bourke of the library of the South-West TAFE for a copy of the reprinted letter. A poorly handwritten date on the item in the library files suggests a publication date of 18 April. Closer inspection shows that it is actually written as the 1<sup>st</sup> April. This date is an error.

<sup>4</sup> *The Recollections of Geoffrey Hamlyn*. Henry Kingsley 1859. Seal Australian Classics edition, 1995, p 329

<sup>5</sup> *The Legend of the Mahogany Ship*. Avis Quarrell. Covell Publications, Warrnambool, 1996, p 4



# To Edith

*We sang at church about the stream*

*That dashes up its silver spray*

*And on its margin, like a dream*

*There walks with God our Edith May.*

*(Joseph Manning (1856 - 1925)  
farmer, coal miner and poet.)*

*Those lines are all that now survive*

*Of what my grandpa's father wrote*

*About his daughter's death aged five*

*From inflammation of the throat.*

*In nineteen-seven it occurred;*

*The place, north-western New South Wales.*

*Their life was hard, it is averred.*

*A hot, dry climate there prevails.*

*Diphtheria, the croupal kind*

*It was that took her life away,*

*An illness that you'll seldom find*

*Among the children of today.*

*And what has made it get so rare?*

*A prophylactic needle prick.*

*The sting is worth it if you bear*

*In mind that then you won't get sick.*

*A vaccine for diphtheria*

*Back then I guess had not been found.*

*Or else that far off area*

*In medicine did not abound.*

*My grandpa lived a mile away.*

*He could not meet his sister lest*

*To her disease he too fall prey.*

*He did, though, see her laid to rest.*

*There never lived a girl so sweet,*

*My grandpa said when he was old.*

*Adored by all whom she did meet,*

*She truly had a heart of gold.*

*I think that stories such as this*

*In all our families are known.*

*We are then all the more remiss*

*If needle hatred we condone.*

*So when you hear detractors say*

*What consequences can attend*

*The jab, remember Edith May -*

*And all who had the same bad end.*



Chris Manning has composed a moving verse  
about an old family tragedy.

It has resonances that any modern-day Skeptic will recognise.

# Four in one week!

Our resident balloonaut takes another hard look at the ease with which otherwise intelligent people can be parted from their money



*Richard Lead, the drinking woman's sex symbol, is a taxation consultant and the treasurer of Australian Skeptics.*

Parting people from their money is not difficult. Last year the Australian Securities and Investments Commission released a chilling warning:

*In the last 10 years, over 100,000 Australians have lost their life savings in failed investments. A recent review of cases in our files shows a pattern of investor carelessness or greed unfortunately combined, at times, with unscrupulous and unprofessional behaviour by professional advisers.*

It is a constant source of amazement to meet people who have worked hard for 45 years, been prudent with their money all their lives, and who, on retirement, hand the lot over to the first get-rich-quick merchant who knocks on their door.

But it is not just the financially unsophisticated who are taken in. Recently an accounting firm asked me to review the tax position of a client's self-managed superannuation fund. Believe it or not, I relish such tasks, as I get to see where the smart people invest their money. But this superannuation fund quickly produced that familiar sickening feeling. The client, a very successful South African businessman, had been telephoned out of the blue by a group of scamsters operating out of Bangkok. They persuaded this savvy Seth Effrican to buy \$25,000 in shares in a US start-up company. The documents were all nice and glossy, promising untold profits, and to me were deeply suspicious. When I contacted the

company to confirm the superannuation fund's shareholding, it had no record of the \$25,000 investment. This is known as the piggyback scam, with the fraudsters persuading the victim to buy shares in a company (almost always offshore) and simply providing the victim with their own bank account number for the telegraphic transfer of funds. They then provided forged share scrip and other documents which were sufficiently convincing to persuade this chap to invest a further \$25,000 from his family trust. Seth Effricans are not known for their reticence, and he introduced me to some imaginative bad language.

In the same week, the same accounting firm presented me with three additional clients who had fallen for the same scam! All are successful in their field, but believed a complete stranger operating out of an Asian city had a deal too good to pass up. Four victims in one week is my personal best.

## Scamster magnet

Graeme Laing, from the Gold Coast Skeptics, must carry a scamster magnet in his pocket. At one stage late last year, he was toying with four of these offshore scamsters at once. He would keep them going for weeks, umming and aahing about his proposed investment, and then flick them on to me as 'my accountant wants to talk to you.' These guys are very persuasive

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and know all the selling tricks, and if you see the recent movie *Boiler Room*, you will understand how they operate.

### Tax Scams

There is an old cliché to the effect that if you want to sell something to a woman, tell her it will make her look thinner. To sell something to a man, tell him it is tax deductible. For self-preservation purposes I dispute the first claim, but the siren call of tax savings has indeed sold many a lemon.

Hundreds of millions of dollars are invested and lost in failed agricultural schemes each year in Australia. One product alone (Budplan) took in \$600 million to invest in tea-trees. Total world demand for tea-tree oil is insignificant, but that did not deter the investors, who were blinded by the tax savings promised by the promoters.

A typical con starts by persuading the target he is acquiring a business. It doesn't matter what the business is, because business losses can be offset against salary income\*. The variety of such businesses attests to the imagination of the scheme promoters. On the day I completed this article, the ASIC placed an interim

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\* Australia's tax laws were amended from 1 July 2000 to greatly restrict this. And not a century too soon.

stop order on a heavily marketed investment scheme named No Regrets. Investors acquire a business of running an Internet-based lingerie franchise, and with your personalised lingerie website and billions of potential customers, your fortune is assured. Sure.

In mid February 2001, the Australian Tax Office hammered a similar scheme named the 1998 Tentas Project, coincidentally marketed by the same promoters as No Regrets. The ATO sent each investor a fiery letter, telling them in no uncertain terms the whole thing was a sham, their claimed tax deductions would be disallowed, substantial penalties would be imposed; and have a nice day.

How was it supposed to work? Well, sitting around the promoters' boardroom table in 1998, the conversation would have gone something like this:

*First we need to dream up a business. How about we let the punters invest in Telemedicine products, and let them supply Health Information Technology via the Internet? Sounds good, but we need a catchy slogan. How about 'the use of information, technology and telecommunications for the exchange of health information and the delivery of health care services?' That's good, might even drag in a few more doctors and dentists than usual. And it will be easy to persuade the mugs that if*

*they have their own website and offer merchandise for sale, they are automatically running a business. Now, what tax savings can we promise? How about collecting \$13,000 from each punter, with them coughing up \$5,000. The remaining \$8,000 comes from a non-recourse loan to them from our subsidiary. This loan need only be repaid from any business profits generated. Tell them \$12,500 of their investment is for tax-deductible marketing and management expenses. At the 48.5% tax rate, this gives them a \$6,000 tax refund on a \$5,000 investment. Thanks for the \$5,000 chaps, and bye bye.*

The promoter makes a lazy \$5,000 and the investor makes a profit of \$1,000. We have a free lunch in there somewhere. You may think only a dill would fall for such a fantasy. The ATO is now denying a staggering \$37.5 million in tax deductions claimed by hopeful investors in the 1998 Tentas Project, and they can't all be dills. But they have lost their \$5,000 (the so-called business failed, as was the intention from the outset), they now must repay the \$6,000 refund to the ATO plus hefty penalties (50%) and interest.

It is a sad indictment of Australian society that many such schemes are marketed from the big end of town, by institutions which present themselves to the world as reputable.



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# Calling multi-lingual Skeptics

Webmaster Greg Keogh is looking for volunteers who can help translate our home page into other languages. We currently have French, German, Dutch, Danish, and Spanish versions. The most recent Spanish version was published only a few weeks ago thanks to the help of Al Gallo, a *Skeptic* subscriber from Cairns.

Greg is especially keen to attempt

translations into non-Latin character sets such as Greek, Hebrew, Arabic, Japanese and Chinese; mostly to attract international visitors to our site, and partly as a technical exercise. The more language versions we can produce, the more hits we will generate in international search engines, and this will help advertise our presence to the world. Please note that we are

not attempting to translate the hundreds of web pages in our site, only the home page.

If you think you can produce a high quality translation of our home page and you have a basic knowledge of computer character encoding, please contact webmaster Greg Keogh at [webmaster@skeptics.com.au](mailto:webmaster@skeptics.com.au).



# Pathways to the heart of darkness

Steven D'Aprano reports on a controversy that has been rocking the anthropological community. It appears that the problem can be attributed more to irresponsible reporting, than to failures in the scientific discipline.

On 19 September 2000, the most extraordinary email was forwarded to the *Evolutionary Psychology* mailing list hosted by [www.egroups.com](http://www.egroups.com). Timothy Hall, from Harvard University, had forwarded what he claimed was an open letter to the president and president-elect of the American Anthropological Association. In this letter, the most terrible accusations against anthropologists were made.

The letter, which had already been circulating by email for some time, was written by Terry Turner, Professor of Anthropology at Cornell University, and Leslie Sponsel, Professor of Anthropology at the University of Hawaii.

## A scandal predicted

Turner and Sponsel wrote:

*We write to inform you of an impending scandal that will affect the American Anthropological profession as a whole in the eyes of the public, and arouse intense indignation and calls for action among members of the Association.*

*In its scale, ramifications, and sheer criminality and corruption it is unparalleled in the history of Anthropology.*

Turner and Sponsel go on to explain the source of this scandal. The investigative journalist Patrick

Tierney has written an expose of anthropologists and associated scientific researchers among the Yanomamo of Venezuela and Brazil.

## Fierce people

The Yanomamo are best known as "The Fierce People" (their own name for themselves), a small group of people living in the remote Amazon jungle\*. The Yanomamo first rose to prominence in the 1960s, when the anthropologist Napoleon Chagnon wrote a popular book called *The Fierce People*, describing his experiences with them. And fierce people they are, at least if you accept the words of Chagnon. The use of native hallucinogens and other drugs is rife. Inter-tribal warfare is endemic, and even within tribes, hostility and violence is common.

According to Turner and Sponsel, Tierney's new book, which was about to be published, contained accusations against the geneticist James Neel, and the anthropologists Napoleon Chagnon, Timothy Asch, and Jacques Lizot.

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\* Ironically, despite their popular reputation and the name they call themselves, the Yanomamo are not so fierce compared to many other tribal peoples. The names we give ourselves are not always the names others give us.

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## Conspiracy nightmare

The accusations, as reported by the two professors, sound like they came from the worst sort of conspiracy nightmare. The Yanomamo project was an outgrowth of the Atomic Energy Commission's secret experiments on humans. The late James Neel, who had headed the team of scientists who investigated the effects of radiation on survivors of Hiroshima and Nagasaki, was accused of performing radiation experiments on the Yanomamo with radioactive iodine. Chagnon and Neel were accused of having deliberately started - or at least greatly exacerbated - a measles epidemic that killed hundreds and possibly thousands of Yanomamo in 1968 in order to test certain eugenic theories of Neel's.

Sponsel and Turner's email detailing these alleged crimes was long and detailed - around 3000 words long - one could be excused for thinking that they were recounting these crimes with glee: the facts that emerge from Tierney's book are "chilling"; the accusation of genocide is "the only explanation that makes sense"; the use of a "lethally dangerous vaccine". They quote an unnamed reader of Tierney's manuscript as saying that the manuscript describes "a case study of the dangers in science of the uncontrolled ego, of lack of respect for life, and of greed and self-indulgence. It is a further extraordinary revelation of malicious and perverted work conducted under the aegis of the Atomic Energy Commission."

## Cooking the data

As if accusations of genocide were not enough, they accuse Chagnon of re-cooking the data on the Yanomamo, and when that failed to suit his eugenic theories, of manufacturing it, even to the extent of building entire artificial villages. Chagnon, it was claimed, deliberately upset the balance of Yanomamo life in order to incite conflict, raids and murder. It was further claimed that he de-

manded "that villagers bring him girls for sex." Both Neel and Chagnon colluded with "sinister Venezuelan politicians" attempting to gain control of Yanomamo land for illegal gold-mining.

Turner and Sponsel wrote:

*This nightmarish story a real anthropological heart of darkness beyond the imagining of even a Josef Conrad (though not, perhaps, a Josef Mengele) will be seen (rightly in our view) by the public, as well as most anthropologists, as putting the whole discipline on trial.*

## A bombshell

This email hit like the proverbial bombshell. Members of the mailing list were unsure how to take it. The claims were extreme, but Turner and Sponsel are respected professors of anthropology. There was concern that perhaps there was something to the accusation. It didn't take long though for defenders of Neel and Chagnon to start coming out.

Turner and Sponsel, it seems, were not quite the disinterested observers, concerned only for the welfare of the Yanomamo, as it first seemed. In 1994 Turner had stood up in a conference and publicly accused Chagnon of being a sociopath whose lies had damaged the Yanomamo people. Sponsel also is a longtime enemy of Chagnon.

It seems that Chagnon is a controversial figure among anthropologists. Long before the controversy was made public, on January 30, 2000 an article appeared in the *Los Angeles Times*. Written by Michael D'Antonio, Chagnon was described as an "irrepressible raconteur", a member of "a disappearing breed — the swash-buckling anthropologist".

D'Antonio wrote:

*And his research and manner haven't just earned him fame and respect. They've also made him reviled and ostracized. Sporting a gray beard and safari vest, he seems ready for the jungle, looking more like Papa Hemingway in the bush than a professor behind his desk...*

## Clashes with church and state

According to D'Antonio, both his friends and his enemies describe Chagnon as aggressive, arrogant and defiant. He has been formally banned from entering their countries by both the Venezuelans and the Brazilians. His clashes with Catholic missionaries in the Amazon jungles were legendary, especially after he accused them of inciting violence among the Yanomamo by handing out shotguns.

In an interview with D'Antonio, Turner said:

*His politics are bad. His ideas are used by miners and politicians, especially in Brazil, to argue for a break-up of Yanomamo land. [Worse is Chagnon's assertion] that the males who are dominant get more women, and therefore their genes get passed on more. This is very close to the Nazi idea that there's a leadership gene that the dominant people pass on and this is the natural order.*

Turner, it seems, objected to South American politicians and gold miners using Chagnon's ideas (or a reasonable facsimile of such) as an excuse to evict the Yanomamo from their land, or even kill them. His and Sponsel's email displayed palpable relief that, at long last, there was something concrete to pin on Chagnon rather than just being the inspiration for bad people to do bad things.

## Allegations contradicted

Susan Lindee, of the Department of the History and Sociology of Science at the University of Pennsylvania, managed to get her hands on Neel's field notes for the 1968 work in Venezuela. She described how his notes contradict almost all of Tierney's allegations. In particular, not only did Neel have official government permission to immunize the Yanomamo, and had been advised by an expert from the Center for Disease Control, but the epidemic had started five days before he arrived in Yanomamo lands.

Lindee did admit:

## Heart of darkness

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... if we wish to adopt an X-files theory of history, we could propose that he planted these records, including the much-scribbled on and often almost illegible field notes, in order to mislead future historians about his actual behavior in the field.

Mark Flinn, of the Department of Anthropology at the University of Missouri, revealed that:

... when I was a graduate student, the running accusation against Nap [Napoleon Chagnon] was that he was “really in the business of enslaving Yanomamo to work in uranium mines”, and that “the academic animosity towards his description of warfare among the Yanomamo was (and is) extremely virulent and personal”.

The attack on Chagnon began to appear more and more a personal vendetta rather than a genuine expose of scientific fraud and unethical behaviour.

### Science defended strongly

Chagnon's science was defended strongly. David Geary, Professor of Psychological Sciences at the University of Missouri, wrote:

*One of the clearest indications of shoddy scientific work or falsification is results that are inconsistent with a larger body of related work collected by other scientists using similar methods. ... [Chagnon's] findings are clearly consistent with those of many other researchers and thus there is little reason to impugn the findings.*

John Patton of Washington State University compared the Yanomamo with other tribal societies, and found them far from unusual. With a murder rate of 166 per 100,000 per year, the Yanomamo are far below many highland New Guinea societies (around 500 per 100,000, with the Hewa reaching 778). Approximately 20-30% of Yanomamo men die the victim of homicide, which is less than half that of the Waorani of the Ecuadorian Amazon where 63% of men are murdered. By comparison, the homicide rate in the USA had a peak murder rate of 10.2 per 100,000 per

year in 1980, and in 1999 had a murder rate of 6.8. Even New York, popularly imagined to be the most violent city on earth, had a murder rate of 10.7 in 1986.

### Book release postponed

By the end of September, there were at least 95 emails discussing the Tierney book on the *Evolutionary-Psychology* mailing list. Tierney's book release was postponed. Not surprisingly, defenders of Neel and Chagnon were vocal. More surprisingly, there were very few knowledgeable people prepared to support Tierney.

Although Chagnon has a great many enemies in anthropology, they were silent. Or at least they were silent on this mailing list. Since most of Chagnon's opponents are left-leaning and critical of sociobiology, they would be unlikely to frequent a mailing list dedicated to evolutionary psychology, sociobiology's successor.

### Defence of Tierney

Almost the only defender of Tierney was Judith Greer, a journalist working for the on-line newspaper *Salon*<sup>1</sup>. Greer took some heat for her willingness to accept Tierney's work in the face of all the evidence to the contrary. It wasn't so much her audacity in siding with Tierney, because she was prepared to acknowledge that some of Tierney's work was unconvincing; it was more her assertion that where there's smoke, there must be fire: even if some of the accusations were wrong, the sheer weight of evidence had to count for something. She wrote:

*I think what the main problem might be here is that you guys have not read this book. It is pretty meticulous, to the point of absolutely EYE-GLAZING detail. You should be aware that people — even cautious people like me — are going to find it persuasive.*

Greer kept coming back to the vaccine used by Neel. If his motives were pure, why did he use such a dangerous vaccine? She stated that she had expert testimony from an anonymous source that the Edmons-

ton B vaccine used was unsafe for people with limited immune response, like the previously isolated Yanomamo. She picked up on many little discrepancies and inconsistencies in Neel's and Chagnon's account of the measles outbreak. Indeed, while each discrepancy on its own is minor, there is a disquieting sense, when you take them all together, that all is not right.

### Uncritical journalism

Greer was unusual for a journalist. She took the time and trouble to converse with anthropologists, looking for alternative viewpoints. She criticised parts of Tierney's book. Most other journalists were extremely uncritical. They accepted Tierney's claims without question. Some reviews seem to have been based purely on Sponsel and Turner's email, without even an attempt at reading the original book. The perceived quality of the media made little difference to the reviews: journalists working for *The Guardian* or *The Times* were no better, and perhaps worse, than those working for lesser known media outlets.

On September 23, *The Guardian* headlined<sup>2</sup>:

*Scientist 'killed Amazon Indians to test race theory'*

while the BBC wrote<sup>3</sup>:

*Amazon geneticist 'killed hundreds'*

Compare those with Greer's account published on *Salon* on September 28<sup>4</sup>:

*Macho anthropology*

*Did scientists start a deadly epidemic to prove that humanity is innately violent — or are they victims of politics?*

The editors of *Los Angeles Times* must have decided that even Turner and Sponsel weren't sensational enough for them, because they went on to trumpet<sup>5</sup>:

*Neel worked for a covert program of the Atomic Energy Commission to study the effects of radiation on human subjects and to see how human groups behaved under conditions of extreme*

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stress. Neel had *ubermensch* notions about the genetics of 'leadership' and differential rates of reproduction among dominant and subdominant males in a genetically 'isolated' human population.

According to Andrew Brown, author of *The Darwin Wars*, he was asked to write a review of the controversy by the *Sunday Telegraph*, but was then told that they were "not interested if it says that Neel and Chagnon did not in fact commit genocide."

### Medical support for Chagnon

As more information came out about the measles epidemic, the situation for Neel began to look better. Dr Katz, the co-inventor of the vaccine used, wrote:

*I cannot comment on Neel's style, goals or objectives, but the use of Edmonston B vaccine in an attempt to halt an epidemic was a justifiable, proven and valid approach. In no way could it initiate or exacerbate an epidemic. Continued circulation of these charges is not only unwarranted, but truly egregious.*

Even Professor Turner recanted his earlier accusations in a message to Dr Katz:

*Thank you for your message concerning the Edmonston B vaccine. Now that I have had a chance to research the matter myself, I am in complete agreement with you.*

At worst, it seems, Neel made an error of judgement in choosing Edmonston B, which potentially can cause worse side effects than other vaccines. Accusations that he deliberately spread the disease, or that he ordered his assistants not to treat the sick, were false. Tierney quoted an expert, Francis Black, as being "shocked" to learn, in 1997, of Neel's use of Edmonston B, but Black had discussed Neel's use of Edmonston B extensively in a journal article in 1971. And while Tierney claims that Neel's "social theory" of disease is a minority viewpoint, even Black admits that his "genetic theory" is the

minority, and that Neel's was the orthodox viewpoint.

### Claims disintegrate

Other claims also disintegrated. The accusations that Neel and Chagnon had staged the famous Ax Fight (subject of a video by Tim Asch) were ridiculed by one of the filmmakers, Peter Biella:

*The film ... bends over backwards to qualify and reject stereotypic impressions of irrepressible Yanomamo violence. The film is about ways that violence is muted, restrained, and non-fatal. Essentially it argues that without police, Yanomamo manage to make their system of dispute settlement work pretty well, with nobody in this case getting very hurt. Why would the filmmakers go to the trouble of starting a fight in order to prove the existence of outrageous, uncontrolled Yanomamo violence if their purpose were to argue that the fight is restrained and relatively peaceable?*

While mainstream journalists found Tierney compelling, scientists who managed to get a pre-release copy reported being unimpressed. Many references were found to be irrelevant to the point Tierney was making. One of Tierney's references supposedly proving that the Edmonston B vaccine was potentially contagious actually described children with ordinary measles<sup>6</sup>. Other references contradicted Tierney. The mismatch between what Tierney claimed people said and what they really said in some cases was so bad that John Tooby, Professor of Anthro-

pology at the University of California, published<sup>7</sup> a web page in which he called *Darkness In El Dorado* a hoax:

*Within hours of beginning to investigate, it became clear that Tierney had engaged in major falsification of his sources. His misrepresentations are so severe, and so pervasive, that the book appears to be deliberately fraudulent. Whenever I or my colleagues looked up Tierney's own citations for a major claim, the citations would contradict Tierney, not support him. The book's own references impeach the book; the book's various chapters impeach each other; and overwhelmingly well-established facts, easily found in easily accessed sources in the scholarly literature further contradict Tierney's accounts on every point of substance.*

### Innocents suffer

Whatever the results of Tierney's book, a number of things have come out. As is usual, the people that Tierney claims to be protecting are the ones who suffer. The Yanomamo have been left with a great distrust and fear of both anthropologists and vaccine. Both the Venezuelans and the Brazilians have indefinitely banned all anthropologists from the area, but not missionaries or gold miners. Without foreign witnesses, I expect that the gold miners will murder and displace even more Yanomamo than they have in the past. The local governments claim to have the Yanomamo's best interests at heart, but it is their failure to protect the Yanomamo from disease and the illegal gold miners that does the real harm. As a strident critic of both the government and many (although not all) of the government-approved missionaries, Chagnon has been a thorn in their sides for years. Now they have been given the excuse they needed to ban not just Chagnon, but all foreign anthropologists.

The controversy all but guarantees that Tierney - and his publisher - will make a fortune. Tierney concedes that he may be in error on a minor point or two, but he has stressed that

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\* The social theory of disease epidemics says that the reason that isolated populations suffer so badly from Western infectious diseases is not because of any genetic susceptibility, but because of the breakdown of social services when the vast majority of the population become sick simultaneously. With all the members of the tribe or village ill, there is nobody well enough to minister to the sick, nurse children, find food, or collect water. It is this lack of basic care that causes the terrible death toll, more than the disease itself.

if any of his accusations should prove to have substance, then there should be real concern about the ethics and motives of Neel and Chagnon. But of course this cuts both ways: if any of Tierney's accusations are fabricated, then surely we are justified in questioning Tierney's motives? As his case falls apart, we are left with the suspicion that he has engineered a callous self-promotional scheme. As a result of the publicity generated, Tierney will have hypocritically generated a nice little earner for himself.

### Self-serving journalism

Traditional journalism yet again shows itself to be self-serving, sensationalist, and unqualified - and usually uninterested - in checking matters of fact. What was surprising to me was how well non-traditional Internet based journalists acquitted themselves. While the "reputable" BBC and *New Yorker* treated Tierney's book as self-evidently true, Internet-based journalists like *Salon's* Judith Greer spent a large amount of time and effort checking Tierney and looking for alternative viewpoints. Admittedly she ended up giving Tierney qualified support, but what is important was that she was one of the few journalists who was even remotely interested in treating Tierney's claims with scepticism. Greer ended up changing her viewpoint: she initially started looking for ways to debunk Tierney, then became convinced he was right, and finally suggested that a cover-up of accidental infection was more likely than deliberate genocide.

*The Slate's* Anastasia Salinger was even more scathing, especially about *The New Yorker's* handling of the affair<sup>8</sup>:

*The great thing about The New Yorker's self-defense is that the anonymous editors who understandably preferred not to have their names associated with the piece - wind up arguing in blustery, self-righteous tones that the Tierney article said nothing at all. The New Yorker, they assure us, devoted pages and pages to an article that said an anthropologist, decades*

*ago, didn't commit genocide, didn't use a dangerous vaccine, didn't believe in eugenics in any bad sense of the word (though I'm still not sure what the other sense is), and so on.*

*Of course, if the editors believed a single word of their defense, they would never have run Tierney's piece in the first place.*

Anthropology itself has had its dirty linen aired. The rampant Political Correctness within anthropological circles has been exposed. As Daniel Zalewski of *The New York Times* wrote on October 8:

*Disputes within anthropology have a way of becoming blood feuds. Virtually all of the field's leading figures have been struck by poison arrows. Margaret Mead? Dupe! Franz Boas? Spy! Colin Turnbull? Hoaxer! Marshall Sahlins? Imperialist! Indeed, the excessive ferocity of anthropological warfare has fractured the discipline and tarnished its public image. It's become the academic equivalent of The Jerry Springer Show.*

and later:

*To simply observe a threatened culture, as Mr Chagnon did, is now considered irresponsible; the anthropologist needs to be first and foremost an activist. Indeed, Ms Schepher-Hughes [University of California at Berkeley] says that anthropologists these days are more concerned with 'critiquing globalization' than studying local traditions. 'A graduate student here at Berkeley recently turned in a classic and beautiful ethnography about this village in Sierra Leone, about domestic rituals and notions of secrecy,' she says. 'But a lot of my colleagues found it wanting, because it wasn't going to help those people getting their arms chopped off! So she has to go back and rewrite it.'*

Glenn King wrote:

*Innuendo, personal attacks, distortions, ostracism, threats of official action based on flimsy evidence. The spirit of Joe McCarthy and Richard Nixon is alive and well in anthropology. I am deeply embarrassed by my discipline.*

Finally, with the vast amount of favourable, sensationalist publicity *Darkness in El Dorado* has generated, and the lack of concern the mainstream media has showed for the notion of truth, it seems to me that Tierney's story will enter the public consciousness as a factoid, and that genocidal anthropologists in the Amazon will become part of the lexicon of evil that "everybody knows".

### Notes

The above article is based on many individual emails posted to the *Evolutionary Psychology* mailing list. Many of these emails contain hyperlinks to websites which contain further information. A complete archive of all emails are available at:

<http://groups.yahoo.com/group/evolutionary-psychology/messages>

Alternatively, I have archived a selection of (at the time of writing) 320 emails directly related to the Chagnon-Neel controversy. I will make these emails available to anyone who wishes. Contact me by email at

[dippy@mikka.net.au](mailto:dippy@mikka.net.au)

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Stephen D'Aprano has a BSc and works as a computer consultant. He lives in Melbourne, is a long-time subscriber and occasional contributor to the *Skeptic*, and claims not to have a photograph worthy of publication.

# Annales Antiquitatis

***Chronological Tables of Ancient History. Synchronistically and Ethnographically arranged. Compiled from the Best Authorities.***

**Oxford: Printed and Published by D.A. Talboys. M DCCC XXXV.**

I am a sucker for Chronological Tables and Historical Atlases. Any publisher to venture to offer another *Timetable of World History* is guaranteed to sell at least one copy to me. Realising that by saying this, I am about to give away any pretensions to deep intellectual capacity: I like such documents. They give me an overall view of events and help me generate my own mental map of history. Better minds than mine can achieve this without visual aids, but to understand something well, I like to see it.

Of the Tables and Atlases in my possession, by far the most useful are those of Kinder and Hildgemann, and Colin McEvedy. These are both titled *Atlas of History* and both include the name of the publisher. So McEvedy's work is (here in Australia) called *The Penguin Atlas of Ancient History* (there are four volumes in the set – so substitute *Ancient* for *Medieval*, *Modern* and *Recent* for the titles of each volume). My copy of Kinder and Hilgemann was bought in the US and is called *The Anchor Atlas of World History* – but I suspect that this might also be a “Penguin” here.

I have some significantly less useful documents. A favourite, this time taking a tabular form, is by one John S. Fox and is titled *God's Great Week – The Story of the Ages from the creation of Adamic man until the rapidly approaching Millennial Reign of Our Lord Jesus Christ*. Mine is a recent facsimile edition of a document origi-

nally produced in 1947. It is published by Covenant Books, which, if you've not already guessed as much, is an arm of the British Israelites.

There is a two-fold purpose to *God's Great Week*. The first is to “prove”, by means of a fairly arcane analysis of historical events and supposed synchronicities with various astronomical cycles, that Christ is about to return and begin a 1000 year reign. The Creation of Adam is the starting date for this proof. If many of the insights of the science of his time had washed over Mr Fox, he did at least accept the evidence of Geology and Biology that the Earth, and most that is on it, is more than a few thousand years old. Presumably, in starting with Adam, he thought he was on safer ground.

The subtitle reveals more caution. Do not equate the creation of Adam with the creation of humanity. Note the reference to Adamic man. *Homo* may well have existed long beforehand - the product of an unspecified process, at an unspecified date - but God's special creation, “Adamic man”, appeared at a precise point.<sup>1 2</sup> This is placed on Sunday 20 September 3996 BC.<sup>3</sup> And as each day to God is as a thousand years, we are fast approaching the end of God's week, six thousand years after creation - the sixth day and the start of the seventh – his “Great day of Rest” – and a showdown for the rest of us!

The second objective is given away by the heading on the table – “The

Divine Plan of the Ages, Revealing the Birthright and Destiny of the Anglo-Saxon Race.” It's wonderful to know that God has a divine plan for my folk – but some of the developments of the last half century or so make me suspect that the divine plan might have come off the rails!

The time-line I most enjoy is the *Chronological Tables of Ancient History* and its companion volume *Chronological Tables of Modern History*. My copies of these volumes are bound as one. With this sturdy quarter leather bound folio in hand, the whole of world history, compiled (as the title declares) from the best authorities, is available at my very fingertips! Honesty calls for a few qualifications. The information and the authorities were the best available at the time of publication: in the case of the Ancient History – 1835; the Modern – 1840. So the material does suffer from some deficiencies. It's not of much use if you are interested in the Cold War (or the Crimean War for that matter). And it's a little shaky on the Egyptian Pre-dynastic period. In fact, by modern standards, it doesn't do too well up until about 1000 BC.

It is, of course, a product of its time, and really does reflect the best scholarship of the day. The problem is that the best scholarship of the day, in historical studies, depended upon literary sources. Scientific archaeology did not exist. Layard did not begin his excavations of Nineveh until 1845. Schliemann did not excavate at Troy until 1870. As such, the compilers of the *Tables*, were scarcely aware of many of their shortcomings. They knew that, in dealing with extant remains of written records, these records themselves presented problems:

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Grant Stevenson, President of the Victorian Skeptics, confesses to an interesting passion.

*Not only are (the) sources of information scanty and (the) data confused, but from the loss or mutilation of those ancient contemporary documents, which would have illustrated the earlier periods of history, (the historian) is compelled to have recourse to more questionable, because more recent records: and by comparing these together, and rejecting whatever seems to rest upon weak or uncertain testimony, ... at last obtain but a faint glimmering outline of the truth, or perhaps no more than the most probable among a number of conjectures. As we ascend the stream of time, and endeavour to penetrate the mists of fable and obscurity in which the history of the primitive ages is involved, our utmost research is repaid by nothing more real or substantial than shadowy legends, embellished by the poetic imagery and glowing descriptions of ancient bards*

(From 1835 Preface)

They were, nevertheless, certain that they were on the right track:

*But, notwithstanding the obstacles which beset this pursuit, much has been effected by the laborious researches of modern chronologers. Many difficulties have been removed which were once deemed insuperable; many obscurities have been cleared up which had long baffled the sagacity of older commentators; and it may perhaps reasonably be doubted, whether any addition of importance can be made to the store of materials already accumulated.*

(From 1835 Preface)

It should hardly surprise that this chronology, so carefully built up, should affirm the Mosaic account, "from which alone an authentic account of man's origins can possibly be deduced,"<sup>4</sup> and disprove "as far as possible, the fabulous pretensions to antiquity claimed by eastern nations."<sup>5</sup> Happily, the writer acknowledged that scientific chronology is not the main business of the Bible – something of which many a modern creationist should take note:

*It must however be recollected, that the Scriptures were written for nobler and more exalted purposes than the mere transmission of dates or the gratifica-*

*tion of antiquarian curiosity; and hence we must not be surprised if, on topics connected with chronology, we fail to meet with the information we desire, and find ourselves at a loss to ascertain the precise time at which some of the most important transactions took place.*

(From 1835 Preface)

Such (apparent) shortcomings aside (or because of them?), there is much fascinating material to be found. Of interest to the Skeptic will be the news that the great era of pyramid construction occurred as recently as 1000 BC., that Cheops' pyramid "appears to have been designed for a water temple" and that Chephren, as well as building the second of the Giza pyramids, in 972 BC, invaded Judaea and plundered Jerusalem.<sup>6</sup> For the bibliophile, there is the volume itself. It is a marvel of publishing and typesetting ingenuity.

The basic format of the work is such that at an opening one is presented with a double page spread, divided into a number of columns, each with a heading designating a region, nation or people. A single such spread may cover the events of a period of fifty or a hundred years. A scale of years runs down the side of each page. Events that relate to each place or nation are noted in the appropriate column adjacent the appropriate date. Where a single opening provides inadequate space for the typesetter to juggle all of the notes pertaining to that block of time, the spread may extend over a number of pages, supplemented in a number of instances by fold out pages and little skinny inserts.

Such niceties aside, the real (modern) value of the *Chronological Tables of Modern History* is as testimony to the progress and inherent self correction of modern scholarship, in this case, historical scholarship. In many areas there is little to separate views expressed in the *Chronological Tables* from those of John Fox in *God's Great Week*. Although we might chuckle at some of their conclusions, whilst the compilers of the *Chronological Tables* did the best they could

with the information available, they acknowledged that their conclusions might be wrong, and were prepared to change them. This is the key difference between the compilers of the *Chronological Tables* and John Fox and *God's Great Week* and its contemporary creationist look-a-likes.

I purchased my copy of the *Chronological Tables* in a Melbourne second hand bookshop. A search of Bookfinder.com shows that it is reasonably common. Good copies are available through sites such as Bookfinder for around A\$200-250.

### Notes

1. I am unsure whether such subtlety was in Fox's mind when composing the table in 1947, or is a result of subsequent embellishment. The actual fold-out table is mounted within a folding card cover. The table is a facsimile of (presumably) the originally drafted document and refers to Adam only. "Adamic man" appears on the cover. The inclusion of this reference to the view that *homo* was twice created – as Adam (and Eve) and in a pre-adamite form – may be a bit of post-Foxian theological sleight of hand intended by (some) of Fox's followers to lend his support to their particular doctrinal position and not believed by him at all.

2. I am unsure how these various "men" would be classified. I understand from some of those I have spoken to on the matter that Adam's descendants are God's chosen people – the Hebrews – but if you're a British Israelite – the Anglo-Saxons. The difference between the Adam's descendants and the rest of humanity is a "racial" one. I have, however, also heard that Adam was the first *Homo Sapiens*. *Australopithecus* and *Homo Neanderthalis* etc, are pre-adamites. If you subscribe to the pre-adamite line, the later explanation seems to fit better with the usual rendering of the divisions of mankind arising from Noah's three sons, but such is the subtlety of some theology, that almost any set of beliefs is possible!

3. This, of course, at variance with Archbishop Ussher's date of 4004 B.C., Made more specific by Lightfoot – 9.00am GMT, 23 October 4004 BC.

4. .1835 Preface.

5. .1835, Page 4/5 – Table header.

6. This is a confusion between the Fourth Dynasty Chephren and the Biblical Shishak.



# A tale of two Arthurs: history re-written again

Was the discoverer of Knossos  
a gay racist?  
Did King Arthur rule  
the Ukraine?  
Mark Newbrook looks at some  
non-standard ideas about  
history and finds them lacking  
in rigorous scholarship.



Dr Mark Newbrook acts as a consulting expert in linguistics to the Skeptic and works at Monash University.

Historical revisionism continues to loom large in the world of fringe scholarship. Indeed, 'postmodernists' and relativists might argue that this is entirely reasonable: there can be no absolute truth, even in empirical domains, and so we should instead pursue multiplicities of culture-specific or personal 'truths', with no hope or intention of any resolution. The revisionists themselves, of course, adopt such an approach where it suits them to, but elsewhere argue that bias is largely confined to mainstream opinion and that the current orthodoxy is simply wrong. Of course, **some** revisions – mainly but not exclusively developed within the mainstream – **are** justified. But very many are not; and most suitably informed skeptics will not feel able to agree with either of these two non-standard positions. Fortunately there are still plenty of 'modernist' scholars lurking to challenge the less well supported of the novel proposals, inviting them, in so many words, to put up or shut up.

One especially interesting form of revisionist history involves the claim that earlier scholars were heavily influenced in their interpretation of evidence by factors which a modernist, at least, would deem irrelevant: prejudices, assumptions uncritically adopted and adhered to whatever the facts suggested, even features of their own personalities. This is obviously possible, and indeed we should be alarmed if such effects have coloured our interpretation of events

(as, for instance, where the scholar so affected was particularly influential). A recent claim along these lines was made by J. Alexander MacGillivray in his book *Minotaur* (Jonathan Cape, London; 2000), about the excavation and interpretation of the Minoan site at Knossos, Crete, by the celebrated late-C19/early-C20 British archaeologist Arthur Evans.

## Closest homosexual and racist?

MacGillivray analyses Evans' life in detail (and arguably at excessive length, even given the book's topic), and concludes that he was a closet homosexual and (more significantly) a racist; these and other aspects of his personality helped to shape and perpetuate an essentially mythical view of Minoan Crete. The Minoans (the Bronze Age Cretans uncovered by Evans) are in MacGillivray's view largely the creation of Evans' own Victorian mind, imbued with the well-known classical Greek legends of Daedalus and Theseus which reflected a dim awareness of a much earlier civilisation in the Aegean. In Evans' hands, the myth began to take on the shape of historical reality. He openly went to Crete to find 'the truth behind the legend', believed that the mythical King Minos was a real historical figure, and propounded his theory of a peace-loving Minoan civilisation that dominated the region in the 2<sup>nd</sup> Millennium BC. These beliefs have helped to make Crete one of Europe's key archaeological destinations; the ruins at

## A tale of two Arthurs

Knossos attract many thousands of visitors – academics and tourists - per year.

In MacGillivray's view, the picture of Minoan civilisation which they receive represents only Evans's interpretation. Specifically, the labyrinth and palace are fanciful reconstructions based on Evans' predetermined ideas.

MacGillivray argues, against Evans, that the Minoans were a significant military force, at least in the Aegean. He believes that Evans downplayed the military side of Minoan life because he was determined to see Bronze Age Crete as a pacifist matriarchal society. Evans also regarded other contemporary cultures – mostly in Asia or Africa - as inferior to that of the Minoans, who for him were 'Indo-Europeans' (this term originally refers to the language family which includes Greek, Latin and English) and indeed the forerunners of European civilisation. This view was not unconnected with his emotional and at times active involvement in the Cretan struggle against Turkish imperialism. MacGillivray also links his ideas with the more extreme views that were to provide a pseudo-intellectual underpinning for Nazism.

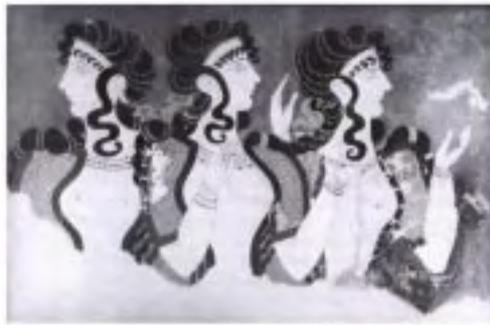
MacGillivray himself is far from a fringe figure; he is an experienced Canadian academic who is associated with the British School of Archaeology in Athens, and was for a time its Assistant Director. However, it is not clear that his view should be accepted as it stands. For a start, many of his key claims are merely asserted, rather than shown to be true or at least plausible. And his explanations of Evans' ideas seem often to involve a degree of over-interpretation - naturally in a direction which makes Evans appear more racist, Eurocentric, or whatever.

MacGillivray also adopts some rather dogmatic and sweeping positions on the general nature of archaeology. For instance, he is unreasonably opposed to the notion that some finds do really occur by chance; and he announces at an early stage that he regards all archaeological discoveries as 'creative in their origin', thus

appearing to exclude the possibility of discovering things which really are present. At points such as this he appears close to an unfortunate but trendy brand of relativism.

### Recent trends in archaeology

But MacGillivray also appears at times to be surprisingly unaware of the major recent trends in archaeology which relate closely to these ideas of his own. In his introduction, for instance, he writes as if his central notion (that Evans' views about Crete can be explained in large part in terms of his culture-specific and personal idea systems) is novel and iconoclastic. But 'postmodernist'/'deconstructionist' notions of this kind have been salient in academic archaeology for so long that there has



Fresco from the Palace at Knossos

been a 'modernist' backlash, and to a degree a further reaction against this backlash. (MacGillivray also appears unaware of the extent to which his own theories might be subjected to the same kind of deconstructionist analysis.)

Indeed, there has also been a great deal of criticism of some of the ideas which Evans himself helped to foster. Specifically: Evans did think, as MacGillivray indicates, that Minoan Crete was probably a matriarchy, and people like Robert Graves and later Marija Gimbutas followed this up with, eg, Graves' rather speculative interpretations of the Greek myths and his more theoretical treatment of the subject in *The White Goddess*. But all this has been seriously questioned, even by feminist archaeologists. The most obvious examples of this are the many hostile reviews of Graves and, in more re-

cent times, the spate of books and articles attacking Gimbutas' methods and conclusions. Admittedly, this set of ideas possibly represents the most dubious part of Evans' interpretation of Minoan Crete; but it is clear that his influence has never been as overwhelming as might be suggested.

It is true that Knossos was partly reconstructed, and that some assumptions were made in this process. And Evans' thinking clearly was at times characterised by enthusiastic speculation going beyond the evidence (and arguably ideologically informed). He also accepted too readily some rather exaggerated ideas about early cultural links between Minoan Crete and areas as remote as Ireland (he was also keenly interested in British 'megalithic' cultures). But the context was an encouraging one for such notions; over the previous few decades, ideas long held to be purely mythical had been (partly) confirmed by adventurous archaeologists such as Heinrich Schliemann working to some degree outside the traditional constraints of scholarship. And the evidence for the Minoan civilisation itself is not confined to Knossos. There are also Minoan sites at Phaistos, Mallia, etc - and Minoan remains on other islands, notably on what is left of Santorini (Thera). And Evans' ideas about the development of the Minoan civilisation have been modified rather than rejected by subsequent scholars. This includes even his 'Periods', which in his own work do perhaps betray an over-inclination to see history as cyclic or at least as highly systematic (he was especially inclined to see the later stages of civilisations as 'degenerate').

In fact, it does not appear that Evans really held that the Minoans were any more or less powerful than the evidence (as then available) suggested. They were clearly a force in the Aegean, but there were bigger powers on the neighbouring mainlands. Because the Minoans were a sea-faring nation (and Phoenicia was well short of its peak), they were probably also important in trade well beyond the limits of their actual po-

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litical control. The tablets deciphered suggest bureaucracies which were very concerned with quantities of goods (including military items but also goods dealt in by way of trade or taxation). But of course the decipherment came after Evans' time.

#### Links between Crete and Greece

Evans inevitably saw **links** between Minoan Crete and the later Greek civilisation. Indeed, he - and many of his contemporaries - took too literally some of the 'information' in classical and Homeric texts dealing with Crete, which are now regarded as containing fragments of truth about an already remote past mixed with speculation and misinterpretation. But despite all this he was never able to imagine that some of the Cretan tablets would actually be deciphered as Greek. The idea that Greek and Greeks were not factors in early Crete was so strong that (as MacGillivray himself recounts) Evans ignored CR Condor's early suggestions that they **might** have been; while the well-informed Cambridge archaeologist Alan Wace, who had similar ideas, was banned from university digs (a disgraceful action which one hopes never to see repeated). In what might be seen as a genuine display of Eurocentrism, Evans even drew closer links between the Minoan scripts and the later Phoenician alphabet than the evidence (as it stood then and indeed as it stands now) could possibly bear. He clearly believed that Greek had not been written at all until the Greeks in turn adopted the Phoenician alphabet at a much later date (perhaps a couple of centuries before the classical period, though a somewhat earlier date has now been proposed). Some of these views came to be very widely shared and did achieve something of a hold during Evans' lifetime. Michael Ventris' 1952 decipherment of Linear B as Greek was a major surprise, and some of those few who still reject it do so partly because they see such close Crete-Greece links at that time as historically implausible. (It is generally supposed that the still

undeciphered Linear A represents a pre-Greek language, but there is little agreement beyond this.)

In sum, Evans' view of Minoan Crete was complex, not one-eyed. For all his brilliance, in many respects he was, inevitably, a man of his day; and MacGillivray shows this in a myriad of examples. But even where we now think Evans mistaken, it is not necessarily because he was especially prejudiced against non-Europeans. Indeed, he has been accused of exaggerating the significance of some non-European cultures, notably Egypt. (He was not alone in this; at that time, the now discredited hyper-diffusionist 'Manchester School', which saw all human culture as spreading from Egypt, had considerable influence.) And of course there were many other equally highly-trained scholars around at the time of Evans' career, and some of them disagreed with at least some of his views - in complex ways and for a variety of reasons, good and bad. But unless the evidence in favour of MacGillivray's new and more extreme theory can be strengthened considerably, his claims should not be accepted, or at least should be seen as exaggerated. The archaeologist Peter Warren and local Greek commentators have already criticised MacGillivray for pressing his case beyond the bounds of the evidence. Their comments appear well chosen.

MacGillivray's account of Evans' biased 'reading' of Minoan Crete, even if much exaggerated, does raise some other more general issues. One of these involves the fact that much of the 'information' about ancient civilisations which is readily available to non-specialists involves re-tellings of legends/myths (eg, summaries of the works of 'Homer'), oversimplified accounts of warfare, potted (and often distorted) versions of the basic aspects of religious philosophies, etc. Tourists in the relevant countries are also confronted with 'heroic' claims made in inscriptions on monuments, which naturally involve self-promotion on the part of the monument builders. In many cases, of course, the non-specialist

requires a translation to follow even this material. In these circumstances, it is easy for the lay reader (etc) to develop rather simplistic interpretations of events; and those with cultural or political axes to grind can readily foster such interpretations.

In contrast, much of what we really know about the past comes from the 'boring' minutiae of official documents, bureaucratic records etc or the fine points of textual criticism for which a good knowledge of the relevant language(s) is nothing more than a starter. Faced with popularisations of high literature and tales of glorious deeds, one may be forgiven for thinking that the 'ancients' were all either noble warriors or deeply spiritual philosophers. In fact most of them were obviously just as pragmatic and just as involved in the workaday world as are modern people. In particular, notions of very spiritual, very philosophical cultures are always one-sided. Even the language can be misleading. New Testament Greek sounds very august in the King James translation (especially now, 390 years later when it is archaic as well!). But it would have read at the time like something written in an attempt at Standard English by a fairly (no more than fairly) well educated Singaporean with Mandarin or Malay as first language.

Most unfortunately, misperceptions of these kinds extend to many (not all) of the fringe commentators who tendentiously promote non-standard ideas about the remote past under the guise of scholarship. Only the **real** scholars read the 'boring' material; they do not achieve best-sellerdom by writing about tax records or commercial invoices, but they come to know a great deal more about the cultures in question than the vast majority of the fringe-dwellers.

#### Fantasies at the fringe

One way in which this emerges is in the undue excitement sometimes evinced by fringe thinkers when they 'discover' a relatively obscure and 'neglected' document (not usually

## A tale of two Arthurs

anything as obscure as an inventory!) – and proceed to interpret it in a strange or one-sided manner which fits in with their existing biases against the views of the ‘intellectual establishment’, or with whatever bee they may have in their bonnets. Of course, serious historians have always been interested in any documentation that was available; but, as noted, much of this material is not exciting enough for the public at large, even the vaguely interested public, and does not circulate outside specialist libraries. Some fringe-dwellers talk as if they have done brilliantly in finding and reading a few of the more obscure and unglamorous sources; but these are ‘bread and butter’ to the professionals.

It is also common for fringe writers on such matters to ignore what is already known or hypothesised about such sources. This may be because of limited perusal of the literature (which is often less than pardonable), or even because of the desire to make their own case appear stronger. In this latter case, they may hope that readers will think that they are the first to notice the source, or at least more alert to such sources than ‘hide-bound’ mainstream scholars. They also conceal from readers the different interpretations which mainstream scholars may have placed upon the source (and in some cases the arguments of mainstream scholars against older interpretations of the source which the fringe writers are – overtly or covertly – reviving).

### The other Arthur

One such case involves a medieval Welsh text called the *Brut Tysilio/Tysilio* (henceforth *BTys*), which discusses, among other things, the reign of the fabulous King Arthur. Adrian Gilbert is a non-mainstream historical writer who was a co-author of *The Orion Mystery*, one of the many recent fringe books on Egypt, and also wrote rather fancifully about the Maya and their beliefs. More recently, he teamed up with Alan Wilson and Baram Blackett to write *The Holy Kingdom* (Bantam

Press, London; 1998). This is one of the more superficially plausible/scholarly works claiming to have found the true identity of Arthur and/



*Who is this man?*

or those of the major sites associated with him. The *BTys* has come into prominence again recently because this book (like other writings of this triumvirate about Arthur) treats it as an important source. Gilbert *et al.* describe the work as ‘neglected’, but this is tendentious at best (see below).

Of course, there is a huge fringe literature about Arthur, including most notably the prolific Geoffrey Ashe with his continuing focus on Glastonbury (see below). Other such writers include:

- (a) Barber & Pykitt (Arthur was in South Wales; compare Gilbert *et al.* as discussed below)
- (b) Blake & Lloyd (apparent references in medieval sources to places in Britain are all to be relocated in Wales; Arthur was in North Wales, specifically);
- (c) Castleden (Arthur was associated with an earlier castle on the site of the medieval castle at Tintagel in Cornwall, as the stories say; but he is buried at Whithorn on the Solway Firth, much further north);
- (d) Cummins (Arthur lived thousands of years earlier than supposed and was associated with the building

of Stonehenge; compare Evans’ ideas on this area, also (i) below);

(e) Littleton & Malcor (Arthur was really in Scythia = the Ukraine!);

(f) Moffat (Arthur was in the Scottish Borders);

(g) Phillips & Keatman (Arthur was in the English Midlands, specifically at the Roman site of Viroconium/Wroxeter near Shrewsbury);

(h) Stoker (Arthur was in Cheshire and N Wales, specifically at Chester);

(i) Waddell (Arthur was the same person as Thor and Adam, and a mighty British king over large tracts of Europe around 3,700 BC; compare (d) above, also Geoffrey of Monmouth/Gilbert *et al.* as discussed below).

Etc, etc. Some of these writers were clearly motivated by the desire to locate Arthur as near as possible to their own home areas or other places dear to them.

In a rather different vein, Baillie and Keys (together and separately) link Arthur’s reign with the culmination of a series of catastrophes involving comets, minor planets or a major equatorial volcanic eruption (probably of Krakatoa) in the relevant period. This suggestion is echoed by Gilbert *et al.* in their own book; they consulted Clube (as in Clube & Napier) on minor-planet catastrophism.

### Enthusiastic speculation

There are some intriguing pieces of evidence here and there in this literature; and of course there are huge gaps in our knowledge of the period in question. But most of these works, to greater or lesser degrees, are marred by the excess of enthusiastic speculation over genuine learning and scholarship. Many of the writers are unable to read the relevant texts in the original and have little or no background in archaeology or history. None of them can be taken as providing a well-founded solution to the question of the identity, location and deeds of Arthur.

Other writers in this area specialise in the Holy Grail, which looms large in some versions of the medi-

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eval Arthurian Cycle. Phillips (see above, with Keatman) interpreted the stories as linking the Grail to Hawkstone Park in Shropshire (the park contains a medieval castle and an intriguing collection of Enlightenment-period follies) and claimed to have found a small cup in the area, tentatively identifying it as the very Grail. Bradley, Mann and others have developed fantasies (presented as plausible history) of the Grail crossing the Atlantic. And then there is the fact that several rose bushes in Geelong (Victoria) were grown from a cutting of one of the two rose bushes in Glastonbury which, it is claimed, sprang from the staff of Joseph of Arimathea, the bearer of the Grail. Mercifully, there is (so far) no cult surrounding these bushes, which all stand on private land.

Wilson and Blackett, for their part, have proposed in various places (in their book *Artorius Rex* and in the well-produced semi-fringe magazine *Quest*) that Arthur was in fact the fairly well documented South Wales ruler Athrwys ap Meurig (born around AD 503), and that his activities were centred in South Wales and the English Midlands (where they say he is buried; they claim to have found the site, in Warwickshire). Gilbert accepts this thesis; and the three writers collaborated to produce *The Holy Kingdom*.

### The History of the Kings Of Britain

One of the most important early sources on Arthur is *The History Of The Kings Of Britain* (henceforth called *HRB*, from its Latin title) by the C12 Welsh scholar Geoffrey of Monmouth. Geoffrey's account of the early history of Britain culminates with an account of Arthur as a powerful king who campaigns widely in continental Europe (compare Waddell's even more expansive ideas as mentioned above). It is largely fanciful, starting as it does with the settlement of southern England by Brutus of Troy, a close descendant of the Aeneas celebrated by Virgil as the ultimate founder of Rome. (This is the source of the story of Gog and Magog.) There is no evidence supporting this rather implausible idea that Britain was a

Trojan colony. However, the story has been accepted by fringe thinkers as diverse as the British Israelites (some of whom - typically for them - etymologised the word *British* as *Brut-ish* = 'follower of Brut(us)') and the contemporary chronological revisionist Fomenko, who finds the calculated dates of many of Geoffrey's imaginary reigns convenient for his purposes.

Geoffrey's later kings of Britain include Leir/Lear, immortalised by Shakespeare. But again there is no supporting evidence that these rulers ever existed, and indeed Britain (or even just SE England) appears never to have been politically unified during this period. The account is again fanciful. From 55 BC onward Geoffrey incorporates Roman history as it affects Britain, and his story becomes a little more plausible (because he is constrained to some degree by the accounts of Roman authorities); but it is still impossible to treat him as a reliable source, and after the Roman withdrawal around AD 400 his account again degenerates into legend and sheer fiction.

### Trojans and Stonehenge

It is rather interesting that Troy appears in this context; there is a link with the seemingly remote Aegean world within which the Cretan controversies outlined above are located. And indeed Butler, in connection with his theory of the Phaistos Disk as discussed by me in *the Skeptic* 20:3 pp 25-26, has suggested that the Minoans themselves were in regular contact with the builders of one phase of Stonehenge. Of course, Troy is a happy hunting ground for fringe thinkers. Zangger believes that the Atlantis story was based on dim memories of a powerful Troy (again destroyed by a cataclysm); Mertz and later Wilkens relocated the scenes of the Trojan War cycle to the Atlantic, and the latter author places Troy itself in southern England!

Sensibly, though, even Ashe (always determined to advance the case for a historical Arthur) treats Geoffrey of Monmouth as unreliable,

on Arthur as on other imaginary pre-Roman kings. And the vast majority of modern scholars take the same view. Most other 'Dark Age'/medieval sources on Arthur are just as suspect. And some leading 'Dark Age' texts on British history do not even mention him.

The mainstream view is that there are no reliable near-contemporary accounts of Arthur, but that the medieval stories may relate to an important leader of temporarily successful British resistance to the invading English after the withdrawal of Roman power (say around AD 500). The details could easily be so garbled that attempting to identify the sites named in the legends might be deemed futile - although Cadbury has been a favoured site for Arthur's capital of Camelot among the better-informed, and of course Glastonbury later came to be associated with Arthur after the supposed finding of his grave there.

Geoffrey of Monmouth claimed that his material was not of his own writing but had been translated into Latin by him from one very ancient British (Welsh?) chronicle. Most scholars doubt this, but in any case no such work appears to be extant. Gilbert *et al.* (and Blackett & Wilson writing separately in *Quest* and elsewhere) dispute this, identifying *BTys* as Geoffrey's source. They claim that this work dates from around AD 900 and can be treated as a reliable source on Arthur; and that therefore Geoffrey of Monmouth himself is reliable.

As noted above, a number of earlier non-mainstream thinkers and groups have taken Geoffrey of Monmouth seriously. This is not untypical of fringe thinking where ancient writers are concerned. For instance, Bernal and other Afrocentrists seem to regard the C5 BC Greek historian Herodotus (who was presumably at least trying to be truthful but who misunderstood much of the non-Greek material with which he came in contact) as much more reliable than the findings of archaeologists and the collective learning of modern historical scholar-

ship. Compare also Evans' rather naïve trust in the essential accuracy of Homer, as described above.

In this present context, however, it must first be pointed out that *BTys* is far from obscure, as Gilbert *et al* suggest: it is very well known to scholars of Geoffrey's works and of medieval Welsh literature. Gilbert *et al* are falling into the trap discussed above - of assuming that if a source appeared obscure to them as interested lay-persons, or was rather hard to find, it must have been neglected by mainstream scholars. And this is not the case at all. There is already a well-supported mainstream interpretation of the document which differs markedly from theirs (and has much less dramatic upshots for British history). Either Gilbert *et al* do not know this (which would betray very sloppy scholarship), or else they choose not to inform their readers of it (which would be intellectually dishonest). It is not the way of such writers to present mainstream views unless they think they can demolish these views.

In brief, the common view is that *BTys* is a translation into Welsh of (parts of) Geoffrey's book. Thus it is later than *HRB*, rather than being a source of *HRB*. If this is correct, one of the principal supports of the theory of Gilbert *et al*. is removed.

It is interesting that the claim that *BTys* is Geoffrey's source for *HRB* is an old one, long predating Gilbert *et al*. It is not the case that it has been invented recently by modern fringe-dwellers; this was being said by C16 antiquarians, if not indeed by still earlier writers. Some, at least, of the arguments for this view were circular, and the whole case is weak; but the idea has persisted. Other more recent writers have also upheld the greater antiquity of *BTys*. These include the well-known Egyptologist Flinders Petrie, who was not averse to making wild claims about matters outside his own area of expertise. They also include many non-mainstream writers, some of them even more 'fringe' in nature than Gilbert *et al*.

There is, however, a great deal of evidence supporting the mainstream view of the *BTys*. In places the Welsh text is clearly a mistranslation of Geoffrey's Latin. And there are a number of differences between the texts where scribal error appears to be involved; in each such case, the more plausible interpretation involves treating *HRB*, not *BTys*, as the source. There is also no unequivocal reference to *BTys* in any text predating *HRB*. The manuscript itself dates from C15 at the earliest.

In fact, it seems clear that we cannot accept Geoffrey's claim that his work had a single source, which he himself merely translated. Not surprisingly, he appears to have used a wide variety of sources. However, this claim itself helped to generate a textual industry. Many scholars searched for Geoffrey's original, and as early as 1150 Welsh translations of *HRB* (each with a name including *Brut*) were springing up. Some of the errors in the *BTys*, mentioned above, are shared by all of these versions, suggesting that none of them is a real candidate for the status of the source of *HRB*. And one of these involves the very claim about the source, which *HRB* describes as coming from Britain, not as being in British (= Welsh) or Breton as in all the Welsh versions. This includes the preface to *BTys* itself.

And in fact even this preface does not claim that *BTys* itself, as we have it, is the source of *HRB*. It actually identifies *BTys* as a retranslation into Welsh of *HRB*; the latter is described as a translation into Latin of the earlier work in Welsh, which itself may already have been considered lost (and which, of course, probably never existed). The reliance of Gilbert *et al* upon *BTys* is thus even more dubious. Even on its own account, the text is at the end of a manuscript tradition, not at the beginning.

The matter seems clear enough. Whatever other strengths the case of Gilbert *et al* may have, they cannot treat *BTys* as if it really were Geoffrey's source, or of 'Dark Age'

date. Once again, non-mainstream writers, not expert in the relevant field, have been found wanting. And, as noted above, their errors are scarcely venial. Anyone with an interest in the subject and access to a suitable library or to the Internet - could have discovered very quickly the mainstream view of *BTys*. It might still be possible to attack this view; but Gilbert *et al* do not even mention it, still less attack it. Either they know about the mainstream view but have decided to conceal it from their readers, or else they have simply been carried away by their illusory impression that they have stumbled on a great secret, wilfully kept hidden from the world by hide-bound academics. Armed with *BTys*, they think they can overthrow the conventional wisdom on *HRB* and thus champion their own version of Arthur as a real historical figure much closer to Geoffrey's glorious image of him than to the more mundane picture of a locally important Romanised British chieftain, as developed by contemporary scholarship.

In their different ways, MacGillivray and Gilbert *et al* exemplify the work of historical revisionists with their respective 'bees in their bonnets'. Some of these writers are inside and some (most) are outside the academic mainstream. But, if their views are ever to sway the learned world, they need to exercise more discretion and in many cases a higher level of scholarship. Although these historical issues are (happily) of interest to a wider and less demanding public readership, they are serious and complex. One cannot expect to resolve them in anything other than a thoroughly scholarly manner.

### Note

In writing this article I have drawn on the ideas of Adam Luck (who reviewed *Minotaur* in *The Sunday Times*, 23/7/00), Andrew Smith, Frances White and Barry Williams. I am grateful to all of these. References to scholarly sources will be given on request.



# Nuclear myths

## The dirty thirty (Pt I)

Following his presentation to the World Convention, Colin Keay targets 30 widely promulgated beliefs about nuclear energy. Part 2 of this paper will appear in the next issue.



*Dr Colin Keay is a retired physicist and president of the Hunter Skeptics. He believes it is essential that nuclear myths should be challenged, if only to restore some measure of balance to the public debate.*

During my talk on scaremongers to the Third World Skeptics Convention in Sydney, on 11 November 2000, I listed twenty-one common anti-nuclear myths. It has not been difficult to extend the number to thirty. It is the anti-nuclear myth-makers and spin-doctors who spread these myths to brainwash the public against beneficial nuclear electricity. Some of the more absurd assertions, repeated *ad nauseam* in countless publications, demand closer scrutiny.

**Claim 1: A single nuclear particle may initiate a cancer or mutation.**

*Dr Helen Caldicott, founder of Physicians for Social Responsibility, states "... it takes only one radioactive atom, one cell, and one gene to initiate the cancer or mutation cycle." From Nuclear Madness Jacaranda Press, 1978, page 34.*

Usually the weasel word 'may' is included because the chances are so extremely small. Cancer induction is a complex process with, in general, at least three stages of initiation. So a single particle can only be responsible for a cancer if the predisposing events (not necessarily radiation related) have occurred at the same site. This is not surprising. The odds for exposure to a single extraneous nuclear particle causing a cancer have to be exceedingly low because every minute roughly one third of a million nuclear particles zap us internally from the decay of the radioac-

tive constituents (mainly potassium) of our bodies. Adding to that we must also contend with external exposure from cosmic rays, radon and other normal environmental sources. In fact we live out our lives in an ocean of nuclear radiation and would be blissfully unaware of it if it were not for nuclear science.

In primeval times living creatures evolved under conditions of higher nuclear radiation exposure than today and built up efficient defence mechanisms. Humans can readily deal with the effects of exposures twenty or more times greater than normal. *Micrococcus radiophilus* bacteria, discovered thriving in reactor cooling systems, survive nuclear radiation levels over a million times higher.

Natural radiation levels might cause two or three DNA lesions per body cell per year. Compare that rate with the spontaneous DNA lesions which occur at a rate of about 70 million per cell per year. If our immune systems could not handle and repair such damage the human race would have become extinct long ago. For that reason, if no other, low level radiation exposure is not a health problem.

**Claim 2: "There is no safe level of exposure to nuclear radiation."**

*Dr Rosalie Bertell, in evidence given under cross-examination, Court of Ontario, Canada, 18 April 1984 ,*

stated "... they've never found a threshold. So at every level that has been tested, there has been an effect." In the same year Dr Bertell gave similar evidence to the Sizewell B Inquiry in Great Britain.

This concept is refuted by considerable evidence that there is a threshold below which exposure to nuclear radiation is harmless and actually beneficial in moderation. But over the years radiation protection authorities have acted very conservatively by adopting the LNT (Linear, No Threshold) hypothesis that, in effect, postulates no safe exposure level. At least it sensibly ignores baseless claims that low radiation doses are more harmful than even the cautious LNT approach would indicate.

However in 1980 Professor T D Luckey published *Hormesis with Ionising Radiation* citing over 1,000 studies of plants and animals that demonstrated beneficial effects from low levels of radiation. An increasing number of experts in the field are accepting that moderate levels of nuclear radiation do more good than harm to human beings. Patrons of spa resorts (where radiation levels are well above normal) have believed this all along!

Over the past couple of decades research at many laboratories, especially in Japan, has confirmed the health-giving properties of low-level nuclear radiation which tones up the body's immune system. So much so that low dose irradiation treatment is becoming a preferable alternative to chemotherapy as a treatment for certain cancers.

### **Claim 3: "Plutonium is one of the most toxic substances known."**

*Statement on p224 of Cosmos by Carl Sagan. Paul Brown, writing in The Guardian Weekly (18 May 2000) goes further, describing plutonium as "the most toxic substance in the world".*

This claim is very weak. As far as dangerous radioactive elements go, plutonium-239 is not even in the top ten. In soluble form two of the isotopes of radium are 100 times more

toxic than soluble forms of plutonium.

By inhalation, naturally occurring actinium-227 is the most dangerous radionuclide, 16 times worse than plutonium-239. Thorium-232, in fourth place among the ten most toxic, is very common, especially in beach sand deposits. By ingestion, all compounds of radioactive lead-210 are more than twice as dangerous as the most toxic compound of plutonium.

When it comes to toxic or poisonous chemical elements, plutonium is scarcely in the running. In the *Handbook of Toxicology of Metals* it does not rate a mention except in passing in the entry for uranium. Where chemical compounds are considered, cyanides are far more to be feared. And as for 'natural' chemicals, curare and hemlock will dispatch you when plutonium won't. Ask Socrates.

### **Claim 4: Plutonium is the most carcinogenic substance in the world.**

*This and the previous claim are variants of plutonium being described as the "world's most dangerous substance" as in the 1979 book The Deadly Element - The Story of Uranium by Lennard Bickel, published by Macmillan, London.*

This is contradicted by the close medical observation for more than forty years of workers at American nuclear weapon facilities, hundreds of whom were in very close contact with plutonium. At the Rocky Flats plant it has been claimed that enough plutonium to make a bomb was retrieved from the air-conditioning ducts!

Specifically focused studies have shown that "as yet, no plutonium-induced tumour has been unequivocally identified in a human".

An American expert on risk analysis, Professor Bernard Cohen, has publicly challenged anti-nuclear activist Ralph Nader that he, Cohen, will eat as much plutonium as Nader will eat pure caffeine. The challenge has remained unaccepted for more than a decade.

### **Claim 5: Half a kilogram of plutonium, spread evenly around the world, is enough to induce lung cancer in every person on Earth.**

*A widely publicised version of Ralph Nader's 1975 claim, at a speech at LaFayette College, that a pound of plutonium is enough to kill 8 billion people.*

This claim is totally absurd. To share that amount of plutonium among the world's population would yield a dose of less than one tenth of a microgram of plutonium per person. Then it would have to be carefully delivered to every individual. That such an idea could have any currency at all rests on the discredited "hot-particle theory" where a single speck of plutonium lodged in the lung was supposed to eventually produce a cancerous lesion. Such a cancer, if initiated, would show up later in life in competition with those caused by smoking and air pollution.

A more damning rebuttal of this claim stems from the nuclear weapon tests conducted in the atmosphere prior to the Atmospheric Test Ban Treaty of 1963. Before that ban came into effect the explosions of atomic and hydrogen bombs released somewhere between three and eight tonnes of plutonium into the atmosphere in the finely divided form demanded by the hot-particle theory. Noting that life expectancies across most of the globe have not fallen dramatically since 1963 suggests that ten thousand times half a kilogram of plutonium is still not enough to produce the dire effect predicted.

### **Claim 6: "Plutonium was named after Pluto, god of the underworld."**

*Statement from the book Nuclear Madness by Dr Helen Caldicott, Jacaranda Press, 1978, page 63.*

This statement in a book by a leading anti-nuclear activist demonstrates the extent to which historical facts are falsified to make a point. The naming of the newly discovered transuranic elements neptunium and plutonium was made independently

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by American and British nuclear scientists. Both groups decided to follow the order of planets in the solar system. Back in 1789 Martin Klaproth named his discovery of Uranium after the newly discovered planet Uranus. After Uranus comes Neptune, then Pluto. It seemed natural to follow the precedent of naming the new transuranic elements after the transuranic planets, where the name Pluto was chosen over those of other candidate gods because its first two letters, PL, are the initials of Percival Lowell who spent much of his life searching for it.

**Claim 7: Tens, if not hundreds of thousands have died as a result of the Chernobyl disaster.**

A typical claim is "250,000 people have so far died as a result of the Chernobyl tragedy" by the Australian Conservation Foundation on page 3 of a colour supplement "Australia at the Nuclear Crossroads" in Habitat Australia, February 1999 issue.

Sometimes these claims run to seven or eight-figures and include the escape clause 'may die'. "Fifteen million may die over the next ten years" a gullible national newspaper (*The Australian*) claimed in 1994. Such predictions are quite ridiculous, and groundless. The latest and most credible estimate comes from the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). It reported in June 2000 that apart from about 1,800 cases of thyroid cancer in children exposed at the time of the accident, there is no evidence of increased overall cancer incidence or mortality fourteen years later. Over 93 percent of the thyroid cancers are completely curable, and few are fatal, but scarcely any would have occurred had the authorities dispensed protective iodine tablets to the children of the region as they should have done immediately following the accident.

In its review *Chernobyl - 10 Years On*, the Paris-based Institute for Nuclear Protection and Safety reported that "The main effect observed was an increase in voluntary

abortions in several countries just after the accident." Bertram Wolf, an American nuclear expert, claims that in Europe 50,000 needless abortions resulted from fears induced by alarmist pronouncements and news reports about Chernobyl. Doing the sums reveals that his claim represents about one percent of women in the fallout zones deliberately aborting during the first two trimesters. This estimate is really shocking, but it is hardly surprising in the light of totally unjustified fears whipped up by anti-nuclear scare campaigns.

**Claim 8: "Those participating in the Chernobyl clean-up slowly but surely killed themselves."**

Statement in article "Chemical food for thought" by Phillip Adams in *The Australian*, 15 April 2000 .

This well-known national columnist claimed that "Almost 15,000 people involved in the Chernobyl clean-up have died from exposure to radiation." and added "As they tackled the shutdown and the clean-up they were slowly but surely killing themselves."

It must be said that this was true for the workers who gave their lives in the early hours of the disaster. Those heroes were included among the initial toll of 31 fatalities. However the figure of almost 15,000 works out at close to 1,000 deaths per year for the middle-age 'rectifiers' (those conscripted into clean-up tasks). This is simply the expected natural death rate for a similar cohort of males from regions of the old Soviet Union well away from Chernobyl and the fallout zone.

Here is what the June 2000 UNSCEAR Report has to say: "There is no scientific evidence of increases in overall cancer incidence or mortality or in nonmalignant disorders that could be related to radiation exposure. The risk of leukaemia, one of the main concerns owing to its short latency time, does not appear to be elevated, not even among the recovery operation workers."

These results are in line with the long-term studies of Japanese

A-bomb survivors who have been found to suffer far fewer long-term problems from radiation exposure than the pessimists expected.

**Claim 9: "...on April 26, 1986, the (Chernobyl) atomic explosion and the reactor melt-down..."**

From the article "Pulling the plug at Chernobyl" by Ian Traynor, *Sydney Morning Herald*, 14 December 2000 .

It is often asserted that the Chernobyl power reactor number 4 suffered an atomic (or nuclear) explosion. In a sense it was, insofar as an uncontrollable surge of reactor power supplied the energy. But it was a violent *steam* explosion that blew the cap off the reactor, thus exposing its core, which continued to react for some time, spewing much of the resident radioactivity into the air. That such a disaster could happen was due to two serious design flaws in Soviet-designed RBMK reactors, plus a series of violations of safe operating procedures.

The design flaw that allowed such a massive release of radioactive material was lack of a containment structure. All Western power reactors are operated within containment vessels. That is why only a wisp of radioactive gas escaped from the Three Mile Island unit 2 reactor when it suffered a core melt-down.

The other flaw is known as a 'positive void coefficient', which can arise in some water-cooled reactors. A power reactor with this design flaw would not be licensed to operate in the West. It only can happen when a RBMK reactor is operated under unusual conditions, known to the designers in Moscow but not to their operators, whose operating manuals were updated in this regard a month after the disaster.

Briefly, what happens is the sudden formation of steam bubbles ('voids') which absorb fewer neutrons than liquid water, thereby causing a sudden increase in reactivity that causes further voids and the runaway condition creates a steam explosion in a matter of seconds. It was not a nuclear explosion (on a time-

## Nuclear myths

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scale of microseconds) otherwise the whole station would have been totally destroyed. As it was the adjacent reactor number three was fairly soon returned to operation. However all four reactors have, as of December 2000, been shut down.

**Claim 10: "Chernobyl released as much long-lasting radioactive poison into the Earth's environment as all the nuclear bombs ever exploded"**

*Statement by Norman Rubin in Energy Probe. Toronto, Canada 1986.*

The release of radioactive isotopes by the Chernobyl disaster was a fraction of the amounts produced by atmospheric bomb tests. Of the highly active isotope cesium-137, Chernobyl released about one megacurie, while UNSCEAR reported that the tests produced 35 megacuries. Chernobyl released 700 curies of plutonium-239, while atmospheric bomb tests produced 200,000 curies.

**Claim 11: "Nuclear power is the world's most dangerous business."**

*Quote from an article "The nuclear winter draws near. The radiation industry is being exposed. And about time, too." by George Monbiot in The Guardian, 30 March 2000.*

On the contrary, there is scarcely an industry with a better, more thoroughly documented, record of safety than the nuclear electricity industry. It is subject to the most stringent scrutiny. Even when the loss of life due to the Chernobyl disaster is included in the statistics, the nuclear industry ranks among the safest industries on this planet, according to professional risk analysts (see, for example, Professor B L Cohen's "Catalog of risks extended and updated" in *Health Physics*, September 1991).

Even the military nuclear facilities (which I do not condone) provide working environments that are much safer than average. Health surveys at facilities like Rocky Flats, where bombs are fabricated from plutonium, show excellent results with no

elevation of cancers. A current class action against a nuclear facility refers to exposure to beryllium, a non-radioactive element much more toxic than plutonium.

**Claim 12: "The uncontrolled release of even 5 or 10 percent of (its radioactivity) could bring instantaneous death to persons up to 60-100 miles from a large fission-power reactor"**

*From Unacceptable Risk: the Nuclear Power Controversy by M C Olson, Bantam Books, 1976, page 19.*

The answers to the two previous claims indicate that this statement has no credibility whatever.

**Claim 13: "Nuclear power plants may present as great a threat to the survival of life on earth as does nuclear war."**

*Statement in the book Nuclear Madness by Dr Helen Caldicott, Jacaranda Press, 1978, page 106.*

This is pure hyperbole. How this could possibly be so has never been explained anywhere.

**Claim 14: The China Syndrome. A reactor melt-down could burn right through the Earth.**

*The 1979 Hollywood movie having that name publicised this previously unheard unrealistic notion.*

In the movie *The China Syndrome* a power reactor core melt-down was depicted as releasing enough heat to melt its way unstoppably through the Earth and tunnel all the way to China. This infantile scenario, designed mainly for its scare value, is absolutely impossible. Even if the core could reach the Earth's molten mantle, kept molten by natural radioactivity, it would be but a tiny droplet in the enormous volume of magma there.

The syndrome was thoroughly disproved within days when there was a core melt-down at Three Mile Island. The molten core penetrated only a fraction of an inch into the

base of the reactor containment vessel, completely failing to breach its several feet of thickness. It is not the first time a movie has been based on make-believe.

**Claim 15: The Lucas Heights reactor is another potential Chernobyl disaster waiting to happen.**

*This has frequently been asserted publicly by Genevieve Rankin, former Mayor of Sutherland Shire wherein the reactor is sited.*

The implication is that the chances of disaster are high. They are not. Unlike the HIFAR reactor at Lucas Heights, the Chernobyl reactor was uncontained and its design was inherently unsafe. Reactors very similar to HIFAR operate without worries near the heart of large cities like Boston and Munich. Their containment provisions and safety features make the chances of disaster exceedingly remote.

Rather than Chernobyl, a better comparison would be with the Three Mile Island reactor meltdown that posed insignificant danger beyond the station boundary. Similarly, in the highly unlikely event of a core meltdown at Lucas Heights, the damage and virtually all of the radioactive contamination would be confined to within the containment structure. More harm would be done by strident news bulletins making a meal of the problem. As the Three Mile Island incident made clear, increased psychosomatic trauma such as heart attacks and strokes among the local population resulted from unjustified doomsday pronouncements by irresponsible commentators. Certainly not from the very minor release of radioactive gas dispersed by air currents to the point of harmlessness.

To be continued in the next issue



# Your very good health - through prayer, herbs and weird tea?

Kathy Butler reviews the latest edition of the CSICOP journal *Scientific Review of Alternative Medicine* and finds it gives important and welcome insights into the claims of popular, though unproven, therapies.



Kathy Butler is a geneticist and a former president of the Victorian Skeptics. She is seen holding a cheque she earned as a "telephone psychic", after infiltrating one of those networks.

CSICOP has recently begun publishing the *Scientific Review of Alternative Medicine*, a peer review journal which fills a gap in scientific publications, bringing alternative therapies under proper scientific evaluation. It is early days yet for this publication, but it is sorely needed and can only become more important as unproven therapies drift into mainstream medicine. It is more readable than many scientific journals, although some specialist knowledge is helpful. Here's a roundup of some of what is in the latest edition.

## Medical claims for intercessory prayer

This topic has been widely discussed amongst US Skeptical groups. It seems to me that there are more dangerous alternative therapies to expend our energies on, but I guess Australia has always been more relaxed about religion than the Americans. This is a review by Kevin Courcay of a randomised trial by Harris *et al* where coronary care patients were prayed for (or not) and their outcome compared. Courcay points out a number of troubling aspects of the study, including that only Christian prayer was used, and, one I found intriguing, that there was no informed consent of the subjects. Christians in the local community

were given the first name of their subject and prayed for them regularly at home. So if I was a study subject, would it concern me that I was prayed for? Probably not ... but maybe it would. That's the trouble with studies where the placebo effect is significant. If you know, it makes a difference.

## Herbal medicine

This is a special section with a number of reports, all very interesting reading. Varro Tyler writes of how difficult evaluating herbal medicines is when the product is not clearly defined. My favourite example is that of Siberian Ginseng (*Eleutherococcus senticosus*) which is not the same as the herb we commonly know as ginseng (*Panax species*). In China Siberian ginseng is known as *wujia*, a name also applied to a completely different plant, Chinese silk vine. I know you can see the problems already. Siberian ginseng is often touted as a product to enhance athletic performance and so is subject to adulteration with things like testosterone (which actually does have that effect). In 1990 a case was published of a woman whose newborn suffered neonatal androgenisation (it was, well, hairy). The authors attributed this to her

ingestion of “pure ginseng” and discussed the hormonal effects of the plant. In fact the product was labelled Siberian ginseng, and the authors failed to recognise the difference. Tests on the same batch from the supplier turned out to be Chinese silk vine. Neither of the species has androgenic properties, leading the authors to state that it was undoubtedly adulterated with an androgen like testosterone.

Willem Betz writes from Belgium about extremely rapid deterioration of the kidneys of two women attending a slimming clinic. It seems that a cocktail of medications (prepared by a pharmacist) was administered to the clinic patients and although of dubious use, were not known to produce this kind of problem. The mixture had been used by the clinic for 10 years with no problems. Recently, however, Chinese herbs were added to make it more fashionable. The herbs were not known to cause the kidney disease. An analysis showed traces of aristolochic acid (from another herb not included in the prescription), and this was the toxic culprit. It is hypothesised that the herb *Fangit* was adulterated with the similarly named *Fangchi*.

Bill Burley writes a short article on a few points to remember when using Chinese herbs; for example, they aren't always herbs. A preparation can include cockroach, bat faeces, bear gallbladder, human hair... need I go on? Also, it is standard practice to substitute another herb which is presumed to have the same physiological effect, and the substitute generally not made clear in the labelling. Burley notes that most of the points he makes are true for other cultural herbal medicine.

Susan Murch et al write about the difficulties with plant-based medicines, including identifying the active ingredient, consumer fraud, contamination of the preparations, and variability in individual plants or harvests. As an example they note that the active alkaloid in *Atropa belladonna* is 1.3% when grown in the Crimean peninsula but only 0.3% when grown in St Petersburg. An-

other article by Murch and her group suggest detailed methods of in-vitro culture of plant cells to produce consistent and well identified plant medicines.

### Kombucha herbal tea

This article is original research by Susan DiGeorgio and Jerry McLaughlin. I was quite interested in this article from personal experience. About 5 years ago kombucha tea was all the rage with those who

thin layer chromatography and nuclear magnetic resonance in search of anticancer substances. This showed precisely no cytotoxic (anticancer) substances in the tea. Even caffeine from the tea was absent, being taken up and concentrated in the bacterial mat (which is not consumed). The authors note various outbreaks of illness due to contamination of the mat with other organisms (in one case anthrax. Our lab sample grew a fine bloom of penicillium mould at its



*Kombucha tea in the making.*

leap to natural therapies which promise more than could realistically be achieved. A couple of those people work in my lab (yes, even scientists aren't immune) and a plastic bag of the stuff spent a day or two in the lab fridge. Kombucha tea is produced by growing a mat of various bacteria and yeasts (which forms a cellulose-containing membrane around itself) over a medium of cold tea. The tea is then drunk, purportedly preventing the imbiber from getting cancer, curing herpes, insomnia, diabetes, asthma and increasing longevity, etc, etc. The research group took to this substance with all manner of modern tools including the brine shrimp lethality test, high performance liquid chromatography,

new owner's home.) Their conclusion, based on its lack of anticancer properties and potential toxicity is that kombucha tea should not be used to treat cancer, or taken by people with immune compromise.

Finally, there are three book reviews. My favourite one is a book about the once-popular alternative therapy of “gland grafting”, whereby a slice of chimpanzee testicle was grafted (like a skin-graft) to a human's testicle, thereby rejuvenating the aforementioned male. ‘Nuff said, perhaps, don't you think?

To save space, references have not been included. Please contact me ([contact@skeptics.com.au](mailto:contact@skeptics.com.au) or 1800 666 996) if you would like them.



# If it *sounds* like a Duck...

Rob Hardy looks at a new book about a museum dedicated to very old (and unhealthy) practices while musing about the state of our health along the way.



Dr Rob Hardy is a psychiatrist with a practice in Mississippi (USA). Formerly with the US Air Force, Rob spent many years at Wright Paterson AFB, without one seeing the body of an alien. He is a regular reviewer for the Skeptic.

It is an astonishing fact, one that we (especially those of us in the healing professions) should take out for examination every day in order to renew our astonishment: we are in good health.

Think about it; you, and your family, and those about you are generally doing just fine. Consider the complexity of the body's machinery, and realise in awe that we big bags of chemicals and intricate parts *function*. Of course, there are counterexamples. No one has perfect health, some have chronic ill health, and all of us will go down eventually to some malady or other. But we usually get a good span of decades, and generally health rather than illness is the rule.

The ability of the body to keep in balance, to heal itself when it is ill, is astonishing, and, as I say, we don't appreciate it often enough. No silver lining comes without its cloud, however. There is a big problem with our bodies that take such good care of themselves. When they do fail in some way, it is very difficult to determine what sort of procedure or medicine will make them better, because they generally do get better anyhow.

## Placebo

It would be far easier for the drug companies if the only way people could get well was to take a certain medicine for a certain illness. Not only would this make drug company stock more valuable, but it would mean that there wouldn't be those messy drug evaluations; if a drug worked, it would work, and no one

could get well without it. There would be no need to compare new drugs with placebo; but as it is, everyone knows that at least some people taking placebo get better. This is because generally people do get better, but it makes drug trials complicated.

If you have a troubling illness, and you try a remedy after which you get better, you are going to feel strongly that the remedy worked. It doesn't matter that this is the logical fallacy of *post hoc, ergo propter hoc*: because one event follows another, the former event must have caused the latter. And feeling strongly, you might write a testimonial like, "What a pity the government did not supply our men with Wonderworkers during the South African campaign! What a relief it would have been!"

Well, you might not write that; James Joyce wrote that in *Ulysses*, making fun of the panacea advertisements at the turn of the 20th century. No one knows if Wonderworker ("It heals and soothes while you sleep, in case of trouble in breaking wind, assists nature in the most formidable way...") ever really existed, but countless gadgets have been invented and sold for all sorts of ailments.

Now, some medical gadgets work beyond the placebo effect, to be sure; we can be thankful that we have PET scans and thyroid function tests. But even the ones that don't work *do* work when the placebo effect works, and they do get testimonials, and they do make their inventors rich.

Museum of quackery

These are the rightful prey of Bob McCoy, who a decade or so ago established the Museum of Questionable Medical Devices in Minneapolis. He started with just a Psychograph, a machine patented in 1905 to take the guesswork out of phrenology, the measurement of head lumps as a way of determining character.

Phrenology had been wildly popular and widely practised, but science had debunked it long before the Psychograph was patented. The Psychograph, a machine that looks like a professional's hair dryer all wired up to a recording machine, got wide usage, and was even recruited, for example, by the Evansville, Indiana, Police Department to check up on its members in 1933. In fact, the Psychograph is still being used. In *Quack! Tales of Medical Fraud from the Museum of Questionable Medical Devices* (Santa Monica Press), McCoy shows it in action. There is a picture of McCoy (who looks quite a bit like that old fraud W. C. Fields) adjusting the Psychograph on the head of a young woman, and the caption says, "Bob McCoy interviews a potential museum staff member." From his one Psychograph, McCoy has built this museum from donations and gadgets on loan from the American Medical Association, the Food and Drug Administration, and individuals who find them in their attics. If ever I get to Minneapolis, McCoy's museum will be my first stop; until then his book will have to do, and his book is a treat.

Quackery has a long, if not illustrious, history. The *Oxford English Dictionary* lists the first use of the word "quack" in 1659, an abbreviation for the word "quacksalver," or "one who boasts (quacks) about the power of his salves." The advertisements for salves, oils, and capsules from the 19th century are among the earliest quackery on display in the book ("Zoagraiane: The Asthma Conqueror and Catarrh Cure. Purely Vegetable. A powerful Blood Tonic..." all in the exuberant typefaces of the time.) Louisenbad Reduction Salts, Everywoman's Flesh Reducer, and

Fatoff, were soaps that (you already guessed it) brought weight loss: "Reduce Your Weight While Bathing." Fat-O-No was "a little tablet pleasant to take in the privacy of your own home." Nuxated Iron was recommended "If you lack BODILY or MENTAL VIGOR," etc, and was good in boosting a man's romantic energy; it also bore an endorsement in its ads from Pope "Benedictine" XV.



This is all good silly fun, but then there is a chapter on radium. Radium was unregulated in the first part of the 20th century, despite the 1906 Pure Food and Drug Act; it was classed as an element, not a drug. Bailey Radium Laboratories was founded in 1925, and produced Radithor, radium dissolved in water, which could cure 160 diseases (with sexual rejuvenation especially touted). Eben Byers, a steel tycoon, knew it worked, and drank about 1,400 bottles in the three years before he became quite ill in 1930, dying in 1931. The investigation and denunciation of Radithor simply shifted its inventor to gadgets called the Bio-Ray and the Adrenoray. It was fortunate for the general public in the instance of Radium that the quacks had no sense of ethics: most of the cures that touted their power of radium had no radioactive ingredients.

In the book, though, the gadgets are the show. The first medical device patented in the US was the Perkins Metallic Tractors, brass and iron rods that could be pressed against the skin to discharge harmful electricity.

George Washington himself signed the patent. The Anita Nose Adjuster would "Reshape your Nose to beautiful proportions while you sleep!" Optometrist John D. Miller of Arkansas in the 1980s sold dual-tinted glasses that caused a "very low-level confusion in the subconscious," resulting in subsequent weight loss. There was a splint that went on the organ afflicted by impotence; it was called (quite seriously) The Wimpus.

There are abundant quotations from advertisements and pamphlets for different products. The funniest, to me, was the Venus Carnis Bust Developer, about which the inventor, Magarette Merlain, writes,

*I obtained the superb bust development I now have in less than one month by following the same simple treatment I now recommend to you... One day I happened to mention it to an eminent chemist, who was a friend of mine, and who had supplied to me the rare herb which I had been taking. He asked me about the effect produced on my bust, and after I finished he turned to me with the remark, 'Madam, you have indeed made a most wonderful discovery, which is likely to prove a blessing to every woman lacking in bust development...'*

The book is profusely illustrated, and its layout and typography imitate the age of some of the quackery. It does not leave the impression that such things are of the past, however. Many of the old nostrums are the same today (for instance, magnetic insoles), and it wasn't long ago that Evel Knievel (for a fee) was hawking a sparking gas grill igniter which was supposed, when discharged near a site of pain, to prove analgesic. It is estimated that Americans spend a hundred million dollars a year on quack pills and gadgets that do nothing and may be harmful. It may be no comfort that we are still producing suckers, and still producing quacks to make a buck off them, but let us not despair. If people will read *Quack!* they will learn, and more importantly, they will laugh; and a hearty horse laugh at human foolishness has got to be good for what ails you.



# Knowing it all: seeking unity in diversity

In this book, an eminent biologist seeks to find unity in all forms of knowledge. James Gerrand finds that he has put a persuasive case.



James Gerrand has long been a prominent figure in both the Skeptics and Humanist movements. A retired engineer, he is a regular reviewer for the Skeptic.

*Consilience: The Unity of Knowledge:* Edward O. Wilson. Alfred A. Knoff, Inc. 1998. 332pp. hbk. \$27.40.

Don't be put off by the title. I had to consult the full edition of the *OED* for the meaning: *Consilience - said of the accordance of two or more inductions drawn from different groups of phenomena.*

Famed American biologist Edward O Wilson argues for the unity of all knowledge and the need to search for such accordance in the various branches of learning: physical sciences, biology, anthropology, psychology, religion, philosophy, the arts. Wilson brings a wealth of knowledge about these diverse areas in his search for accordances. His search was started when he was enthralled to find the theory of evolution opened a new understanding of the world. The animals and plants he had studied as a young biologist "re-entered the stage as lead players in a grand drama." He had experienced the Ionian Enchantment: a belief in the unity of the sciences, a conviction that the world is orderly and can be explained by a small number of natural laws.

This Enchantment has become to dominate much scientific thought. In modern physics its focus has been the unification of all forces of nature. In the minds of a few, outstandingly by Wilson, it reaches into the social sciences and still further, to touch the humanities. In particular the unifying concept of evolution was the final concept that caused Wilson to jettison his Christian beliefs, the cargo taken aboard during his Baptist up-

bringing. His feelings for a larger purpose in life was transferred from religion to a search for objective reality.

Wilson considers the Enlightenment thinkers of the 17th and 18th centuries were mostly right with their concepts of the intrinsic unity of knowledge and the potential of indefinite human progress. He attributes the current fragmentation of knowledge and chaos in philosophy to the artificialities of scholarship. For instance he points out the four disciplines of environmental policy, ethics, social science and biology should have close connections when looked at rationally, but each stands apart in the contemporary academic mind. The result is confusion and Wilson quotes Francis Bacon - "the most fatal of errors which occurs wherever argument or inference passes from one world of experience to another". He instances an example of this confusion: the problem of determining the best policy for regulating the dwindling forest reserves which requires each of these four disciplines to work together.

Most of our global issues: ethnic conflict, arms escalation, overpopulation, abortion, environment, endemic poverty, cannot be solved without integrating knowledge from the natural sciences with that of the social sciences and the humanities.

In my review I can only touch on a few of the many revelations contained in Wilson's chapters.

## The Enlightenment

In "The Enlightenment" chapter he cites the life of Condorcet

(1743-94) as representing its peak vision of secular knowledge in the service of human rights and progress, to its nadir at his death in prison during the French Revolution for not conforming to the popular will.

Condorcet expressed consilience when writing that the general laws directing the phenomena of nature are no less true for the intellectual and moral faculties of man as for other operations of nature.

Wilson pays tribute to Francis Bacon as the grand architect of the Enlightenment, whose message was that we must understand nature, both around us and within ourselves, to set humanity on its course of self-improvement. Bacon concluded that the best method of investigation was from induction - the gathering of large numbers of facts, the detection of patterns and the testing of conclusions arising from patterns by experimentation. This is a primary basis of the scientific method.

The Enlightenment also produced deism, based on a Creator obedient to His own natural laws as opposed to the Judaeo-Christian Creator able to interfere supernaturally in human affairs. Wilson claims the failure of deism to become a popular belief was twofold. It did not satisfy the emotional needs for ceremony and tribal loyalty and it raised a fear of godless creations of science and technology; Frankenstein monsters such as the microchip guided Terminator. However I consider Wilson ignores the fact that our community is 94% scientifically *illiterate*. If this was reversed by proper education to 94% scientifically *literate*, then I believe the modern form of deism, Humanism, would be widely acceptable as would be the search for consilience, the unity of all knowledge.

### The natural sciences

In the chapter "The Natural Sciences" Wilson points out the greatest divide within humanity is the "chasm that separates scientific from prescientific cultures". Without the accumulated knowledge of physics, chemistry and biology, humans:

...are like intelligent fish born in a deep, shadowed pool. ...they think about the world outside. They invent ingenious speculations ... But they are wrong ... because the world is too remote from ordinary experience ...

He describes the depth and breadth of knowledge gained, from the immensity of the universe, the billions of galaxies, down to the most minute particles, the electrons and protons, neutrons, that are its basis; the study of animals, plants down to microbes, bacteria, viruses, DNA.

Recent knowledge gained by the brain sciences has established that the mind is the brain at work, another "nail in the coffin" of religious belief of the mind existing apart from the body and so capable of existence after death of the body.

The search for knowledge becomes increasingly difficult as we move from the natural sciences to the social sciences and even more so to the arts. One current difficulty is the separation of the scientific and literary cultures as condemned by C P Snow in 1959 for its "practical and intellectual and creative loss". Wilson considers this separation can be dissolved by studying the relationship between our genetic evolution and our cultural evolution. He suggests, as a starting point, the unit of culture, the "meme", as proposed by English scientist Richard Dawkins.

### The social sciences

The social sciences are far more difficult than the natural sciences, although seemingly more readily understandable. One reason for their difficulty, which Wilson strangely does not advance, is that their theories are rarely able to be scientifically tested.

The arts were invented by early humans, eg, through their cave drawings, as an attempt to express and control the abundance of the environment and the forces that mattered most to survival and reproduction. Wilson concludes that no barrier stands between the material world of science and the sensibilities of the hunter and the poet.

### Ethics and religion

"Ethics and Religion" discusses whether ethics are independent such as coming from God or as coming from human values. Wilson can't accept the claimed independent, transcendental origin. This approach, whilst having noble successes such as being invoked by Thomas Jefferson in the USA Declaration of Independence -

*We hold these truths to be self-evident, that all Men are created equal, ...*

has also had appalling failures - support for colonial conquest, slavery and genocide.

Wilson points out that moral behaviour, the basis of ethics, is more credibly explained from knowledge of the brain activity and evolution than from any outside source; not bestowed on a stone tablet. This human origin is the basis of the Relative Ethics, established by Humanist writer Joseph Fletcher, that humans establish ethics to suit the time and place of their culture.

### To what end?

The final chapter, "To What End", begins with Wilson's listing of major unknowns waiting to be explored by an interdisciplinary approach - the final unification of physics; the reconstruction of living cells; the assembly of ecosystems; the coevolution of genes and culture; the physical basis of mind and the deep origins of ethics and religion. Above all we have to decide where to go? In a few decades we will be told,

You may alter by genetic engineering the biological nature of the human species in any direction you wish - to enhance mathematical and verbal ability? Athletic talent? Heterosexuality? Adaptability to cyberspace?

Or you may leave it alone.

A successful answer will require a concerted approach from both the sciences and the humanities.



# Crime and punishment

*Getting Justice Wrong: myths, the media and crime*; Nicholas Cowdery, Allen & Unwin, Sydney pbk \$19.95

As Skeptics, we frequently bemoan the general level of scientific illiteracy in the community that allows proponents of new age or religious fundamentalist idiocy to get away with their specious claims, and it is right that we should be concerned. There are, however, other areas of life of which the public understanding is equally vague, and where the results of ignorance can be more immediate, and more deleterious to our well being. One the most important of these is the subject of this book.

A foundation stone of the liberal democracy in which we live is the "rule of law", which, reduced to simplicity, means that we are governed under a formalised body of laws and not by the arbitrary whims of a government. Of course, the fact that our system operates under the rule of law is no guarantee, of itself, that the laws themselves will be fair, just, or even sane. Other institutions in a liberal democracy, with its separation of powers into a legislature, an executive and a judiciary, do, (or should) ensure that the laws are fair and just, and most of the time they do so adequately, but this is not guaranteed.

Nicholas Cowdery QC is a barrister who had a distinguished career in the law before becoming the Director of Public Prosecutions for NSW in 1994. His job is to prosecute all serious (indictable) crimes in the state. The DPP is one of those independent statutory offices (similarly the Auditor General) which are usually approved of by politicians when they

are in opposition, but which they grow to distrust when in government, largely because such offices do not easily fall prey to the "Yes Minister" syndrome. They are among our safeguards, as individuals, against the power of the state and their independence should be defended by all who value their freedom. They are also, because of their nature, often chronically under-funded by governments who are not fond of independence in the real world.

Cowdery's book begins with a brief description of how the criminal justice system works, listing its in-built safeguards against abuse of state power and charting how it has evolved from earlier, less savoury, methods of punishing those who have offended against the laws of society. He quotes the words of the English Chief Justice in sentencing those involved in the execution of Charles I. It was a gruesome sentence entailing hanging, castrating, disembowelling, decapitating, and other grotesqueries, and ends with the usual "... and may the Lord have mercy on your soul." In a wry aside, the author notes "Some person actually did this to them! It is not known how the Lord reacted..." We should all be very pleased that we have come a long way since those long ago bloodthirsty days - or have we?

In his Preface, the author quotes from one of the earliest Skeptical books, *Extraordinary Popular Delusions and the Madness of Crowds*, written in the middle of the 19<sup>th</sup> century by Charles Mackay (incidentally a barrister): "Men think in herds: it will be seen that they go mad in herds, while they only recover their senses slowly, and one by one." This

leads to one of the major themes of the book - the interaction between politics and the media that results in bad laws.

The first part of the problem is seen in the way in which the rational processes of the legal system are too often hijacked by politicians seeking to gain quick public approval (and votes) by engaging in "law and order auctions" leading up to elections. The second part of this problem is the role played by some media commentators in fomenting a public perception of an uncontrollably rising crime rate and the claimed inability, or unwillingness, of the judicial system to do anything about it. This perception of a crime wave is not supported by statistical studies, which show that while there are increases and decreases in particular types of crime over time, the overall rate is not increasing. Further, they show that the measures taken as the result of media/political interaction, the "tough on crime" measures, are, more often than not, counter-productive.

There is no doubt that independent news media play an important role in the maintenance of a strong democracy, but the media also has a responsibility to treat complex matters with some knowledge and seriousness.

Just as we are outraged by the "tabloid" approach adopted by too many in the media to issues of a scientific nature, so too should we be concerned by a similarly trivial approach being taken to the law. A very recent example might be illustrative. The day after I received this book from the publisher, news came of the

Continued p66 ...

# Controversy: Derek Freeman replies to Paul Shankman

Although this is not divulged, the piece by Paul Shankman on p.58 of the Summer, 2000 issue of *the Skeptic*, was previously published in the USA on p. 59 of the November-December, 2000 issue of *Skeptical Inquirer*. It is a last-ditch attempt by Shankman, a dyed-in-the-wool Meadophile, to invalidate my report in the *Skeptical Inquirer* of the "discovery of fundamentally important new historical evidence about the anthropological fieldwork that Margaret Mead carried out in American Samoa in 1926," evidence which, in my judgement, decisively brings to closure the controversy over this fieldwork. It is thus Shankman who is continuing the controversy, and it is with his richly deceptive arguments that I now, perforce, must deal.

## An important anthropological issue

First, however, let me explain why the history of Mead's Samoan researches is such an important anthropological issue. In 1925, Franz Boas, "the father of American anthropology", faced by what he called "the difficulty of telling what part of our behavior is socially determined and what is generally human", arranged for his 23 year old student Margaret Mead to go to Samoa in Western Polynesia. Her task was to obtain, under his direction, an answer to "the problem of which phenomena of adolescence are culturally and which physiologically determined". In 1928, in *Coming of Age in*

*Samoa*, after a woefully inadequate period of fieldwork, Mead concluded, unreservedly, that the phenomena of adolescence are due not to physiology but to "the social environment."

Mead's extreme, not to say preposterous, conclusion was very much to Boas's liking, and early in the 1930s he asserted, in the *Encyclopedia of the Social Sciences*, that "the genetic elements which may determine personality" are "**altogether irrelevant** as compared with the powerful influence of the cultural environment" (emphasis added). This is a succinct statement of the Boasian culturalism that "from the late 1920s" became, in the words of George Stocking, the leading historian of American anthropology, "fundamental to all of American social science". In Samoa Mead had acted as Boas's agent, and having been given Boas's enthusiastic commendation, *Coming of Age in Samoa* became one of the most influential texts of the 20th century. It is this situation that makes the historical study of what happened to the young Margaret Mead on the island of Ofu in March of 1926 so important. We are dealing, I would emphasise, with a strictly historical problem.

## A refutation

In my book of 1983: *Margaret Mead and Samoa: The Making and Unmaking of an Anthropological Myth*, I presented a conclusive refutation of

Mead's general conclusion of 1928. At that time, however, there was no evidence to account for the fact that she had so misconstrued the realities of Samoan existence. Then, in 1987, while visiting American Samoa I was introduced to Fa'apua'a Fa'amu, who in 1926 had been Mead's closest Samoan friend. She had just returned to her natal island of Ta'u after having lived since the early 1960s in Hawaii. According to Fa'apua'a's sworn testimony (Cf. Freeman, 1999, p.3 seq.) in March, 1926 on the island of Ofu, she and her friend Fofoa had comprehensively hoaxed Margaret Mead about the sexual mores of the Samoans.

This was evidence that demanded detailed historical examination, and in 1988 and again in 1993 Fa'apua'a's testimony was investigated in great detail by my Samoan research associate, Unasa, Dr L. F. Va'a, a PhD in anthropology of the Australian National University. In 1992 I was able to research thoroughly all of the Samoan papers of Margaret Mead in the Manuscript Division of the Library of Congress in Washington, DC. The history that was established by all of this research is recounted in my book of 1999: *The Fateful Hoaxing of Margaret Mead: a Historical Analysis of Her Samoan Research*.<sup>1</sup>

Also in 1999 I discovered, in a rare book published in New York in 1931, Mead's own account of what had gone on between herself and Fa'apua'a and

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Fofoa on the island of Ofu in March of 1926. It is this crucially significant historical evidence as reported by me in the November-December, 2000 issue of the *Skeptical Inquirer* that has so agitated Paul Shankman.

#### Gravely defective fieldwork

It is now known from Mead's own papers that her fieldwork in Samoa was gravely defective. Boas had instructed her to do no ethnological research while in Samoa. Mead, however, without informing her supervisor, entered into a secret agreement to complete (for publication by the Bishop Museum) an ethnology of the islands where she was working. From January 1, 1926 her fieldwork was disrupted for about a month in the aftermath of a devastating hurricane. But then, from February 20, 1926 onwards, in direct defiance of the instructions she had been given by Franz Boas, she gave virtually all of her time to ethnological research. It was during this period that Mead ("lured," she says, "by thoughts of ethnological gain") visited the off-lying islands of Ofu and Olosega, taking with her as travelling companions, Fa'apua'a and Fofoa, who like herself were 24 years of age. By this time her fieldwork on the adolescent girls of Ta'u was, through neglect, in a state of considerable crisis.

#### Sworn testimony

From the sworn testimony of Fa'apua'a and from Mead's own account, it is evident that her hoaxing by Fa'apua'a and Fofoa took place on March 13, 1926, when the three of them were travelling together on the island of Ofu. The very next day in a letter dated Ofu, March 14, 1926, Mead informed Boas that she had found "the sort of thing" he "wanted." The sexual life of the adolescent girl, she stated as she had been misinformed the previous day by Fa'apua'a and Fofoa, "begins with puberty in most cases, " and, as no attempt is made to curb this sexual promiscuity, there is an absence of stress. With this gimcrack solution to Boas's problem achieved, Mead did no further fieldwork on the behaviour of adolescent girls, abandoning a detailed investigation that she had

planned to undertake during April, 1926. Instead she cut short the time available to her and left Samoa a month early to head, via Australia, for a holiday in the south of France. Her general conclusion in *Coming of Age in Samoa* is thus based on fieldwork of the most ramshackle kind.

Margaret Mead's own account of what went on between herself and Fa'apua'a and Fofoa on the island of Ofu on March 13, 1926 is contained in a little known book entitled: *All True! The Record of Actual Adventures That Have Happened to Ten Women of Today* that was published in New York in 1931. Mead's account begins with a reference to "the group of reverend scientists" who had sent her to study the adolescent girls of Samoa with "no very clear idea" of how she was "to do this." It ends with a description of how, by associating with Fa'apua'a and Fofoa, she was able to receive "their whispered confidences and learn **at the same time** the answer to the scientists' questions." (emphasis added). Here Mead is quite specifically linking the "whispered confidences" of Fa'apua'a and Fofoa with the mistaken answer that she gave to Boas (in her letter of March 14, 1926). We know from the entirely independent sworn evidence of Fa'apua'a that these "whispered confidences" were about sexual behaviour. For Shankman to claim that they were about "Samoan chiefly etiquette" is an entirely preposterous claim based on **no evidence whatsoever**. Further, it is definitively known from Mead's own papers that the only young women with whom she had dealings on Ofu and Olosega were Fa'apua'a and Fofoa. This is made explicit in Mead's letter of March 24, 1926 (Mead, 1977, pp 55-57) and in the sworn testimony of Fa'apua'a. For Shankman to suggest that Mead while on Ofu had dealings with girls other than Fa'apua'a and Fofoa is thus wildly unhistorical.

Shankman, in this instance, is engaging for polemical purposes in the outright fabrication of "facts". It is a perturbing example of how far a zealot will go when confronted by historical evidence with which he cannot otherwise cope. We are here dealing, in my

judgement, with a clear instance of intellectual dishonesty. What can be said for certain is that Paul Shankman is a grand master of obfuscation.

The point that Shankman lifts from Orans is also in outright error. It was Mead's view (Mead, 1962, orig. 1950, p.120), as both Orans and Shankman well know, that "the blood of virginity," including that of a *taupou*, "could always be counterfeited". The argument that Shankman here advances is thus unfactual and, in my judgement, intellectually dishonest.

#### Scientifically unacceptable evidence

In the November-December, 2000 issue of the *Skeptical Inquirer* I record that "we now know from detailed historical research that the extreme environmentalist conclusion to which Dr Mead came in *Coming of Age in Samoa* is based on evidence that is quite unacceptable scientifically" and, "furthermore in the light of present day knowledge (Ridley, 1999) this also applies to Boasian culturalism, which at the beginning of the 21st century has become a scientifically unacceptable belief system.

I then conclude with a paragraph in which I note that "this liberating change in the *Zeitgeist* of the late twentieth and early twenty first centuries is evident in the fact that the Intercollegiate Studies Institute of Wilmington, Delaware, in listing the fifty worst and best books of the century, has judged Margaret Mead's *Coming of Age in Samoa*, with its approving forward by Franz Boas, to be the "very worst book of the 20th century."

Shankman's way of dealing with this, for him, ruinous situation is to assert that in making use of "Freeman's deeply flawed argument about hoaxing," the Intercollegiate Studies Institute does not add to its "credibility." Once again Shankman is fabricating "facts" for eristic purposes. In the Fall, 1999 issue of *The Intercollegiate Review of the Intercollegiate Studies Institute*, its editors explain that in compiling their lists they "relied on the advice of a group of exceptional academics from a variety of disciplines," for whom they defined "worst" as re-

ferring to "books which were widely celebrated in their day but which upon reflection can be seen as foolish, wrong-headed, or even pernicious." Of *Coming of Age in Samoa* they say, in quite general terms, "Mead misled a generation into believing that the fantasies of sexual progressives were an historical reality on an island far, far away." The "exceptional academics" who advised the editors of *The Intercollegiate Review* did not then, as Shankman states, depend entirely on my "historical analysis of Mead's Samoan researches."

### Unprecedented breakthroughs

During the last half of the 20th century there were, in the words of Ernst Mayr, "unprecedented breakthroughs in genetics, cellular biology and neuroscience." Never before has there been such fundamental advances in our understanding of the mechanisms of life. Then, on June 26, 2000 came the announcement of the virtual completion of the Genome Project." It can thus be said, in the light of present day knowledge, that Boas's declaration of the early 1930s (derived from Mead's general conclusion in *Coming of Age in Samoa*) that "the genetic elements which may determine personality" are "altogether irrelevant as compared with the powerful influence of the cultural environment" is one of the most egregious anthropological errors of all time.<sup>2</sup>

Consider then the sad predicament of the 57 year old Paul Shankman, who, having based his anthropological career on Boasian culturalism and Margaret Mead, finds his world falling apart, and so much so that in a state of intellectual panic he resorts to outright obfuscation in a vain attempt to prop up what is beyond question an entirely antiquated belief system. He is, it seems to me, deserving of our sympathy.

In 1984, George Milner, who, when compiling his scholarly *Samoan Dictionary*, worked in all parts of the Samoan archipelago, judged that "Mead's Samoan fieldwork was a disaster, and its data unreliable in the extreme." Since that time, protracted and de-

tailed historical research has fully vindicated Milner's judgement. Indeed, the historical evidence on Mead's Samoan fieldwork is now of a kind sufficient to convince any rational man or woman. There will, I have no doubt, always be a lunatic fringe of true believers, who will, while clinging to the wreckage of Boasian culturalism, persist in their efforts to reinstate Margaret Mead's aberrant conclusion of 1928. They are genuine zealots who can be expected to take their mistaken beliefs to the grave. For my part, however, I am satisfied with the very detailed historical research that I have been able to conduct (Cf. my contribution to the "CA Forum on Theory in Anthropology" in *Current Anthropology*, Volume 41. Number 4, August-October, 2000). For me then the controversy over Margaret Mead's Samoan fieldwork is now quite definitely at an end, and I am ready to find what solace I can in the tag "*finis coronat opus*".

### Notes

1. The full record of the sworn testimony of Fa'apua'a Fa'amua together with all of my Samoan papers, including my field notes of the 1940s and the 1960s, have been lodged in the Special Collections Department of the Geisel Library of the University of California, San Diego.

2. For a history of the science of genetics during the 20th century, see Colin Tudge, 2000, *In Mendel's Footnotes* (London, Jonathan Cape).

### References

Freeman, Derek, 1999, *The Fateful Hoaxing of Margaret Mead: A Historical Analysis of Her Samoan Research*, Boulder, Colorado, Westview Press.

Mead, Margaret, 1962, orig. 1950, *Male and Female*, Harmondsworth, Penguin Books.

Mead, Margaret, 1977, *Letters from the Field, 1925-1975*, New York, Harper and Row.

Ridley, Matt, 1999, *Genome: Fourth Estate*.

Derek Freeman,  
*Anthropology and Archaeology*  
*The Australian National University*



### ...Crime from p 63

abandonment of a murder trial being heard in Sydney. It was a high-profile case which had been under way for three weeks and was due to conclude within a day or two. Then a Sunday newspaper published an article about the crime that left the judge with no recourse but to abandon the case and reschedule it for a later date. The cost of this, both financially for the state, and emotionally for the witnesses involved, cannot be overestimated.

Nicholas Cowdery makes a strong case for a more intelligent and rational approach to prevention of crime, and for policing and dealing with the results of crime once it has been committed. This is not a legal text book, nor is it a political polemic; it most certainly is not politically partisan, as all sides of politics come in for some well warranted criticism. It is a reasoned argument from someone who is at the sharp end and one who is concerned that we are not as far from our brutal and barbaric ancestors as we might care to believe. Further, and uniquely in my experience, he has directed that any royalties from this book go to the office of the DPP - as he points out, they need the money.

This book may well make readers feel uncomfortable, but it deserves the widest readership, especially among those who do not believe the complex problems of the world can be solved by glib solutions and ten second sound-bites. This, I suspect, would include most Skeptics.

Finally I must confess an interest. I have known Nick Cowdery, a long-time subscriber to *the Skeptic* and speaker at Skeptics conventions, for many years. He is someone I admire for his highest standards of integrity and common sense and I like him a lot.



Barry Williams is Editor of *the Skeptic* and Executive Officer of Australian Skeptics. He is not a lawyer, nor does he play one on TV.

# Vale Charles Coin

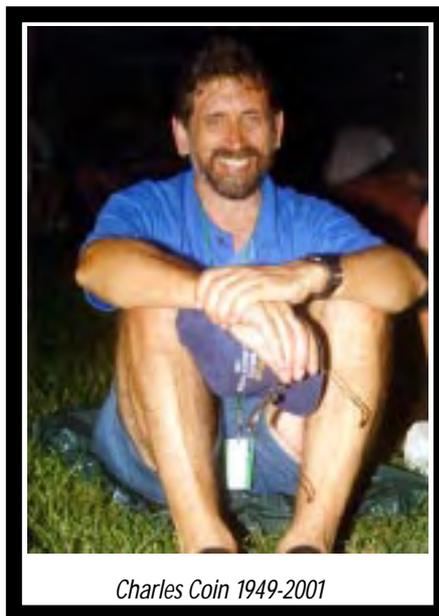
Barely a week after attending the Skeptics World Convention in Sydney last November, Charles Coin suffered a severe recurrence of a pain previously attributed to a dog bite. Fearing tetanus his wife Sue took him to hospital for a more thorough appraisal, with devastating results. He was diagnosed with a widespread inoperable melanoma and had only a few weeks of life left.

A tragic end for a great human being and dedicated Skeptic.

Charles David Alan Coin was born in Adelaide on the 31 March 1949. He attended Adelaide University where he majored in geology. In statistics lectures he met up with Sue Murray and married her in 1971. The pair studied together and Charles graduated with a well-earned doctorate on rock petrology in 1975. He and Sue moved to Newcastle in 1977 to join the scientific staff of the BHP Central Research Laboratory and there made a name for himself in coal-coking technology. His increasingly high international standing saw him travel as a trouble-shooter to Germany, Rumania, Brazil (learning Portuguese!), India and China. He published more than eighty research papers.

Charles had for many years been a keen cyclist - an Iron Man in fact - and at the CRL found himself in the company of several like-minded staff who banded together for rides. Soon they felt the need to develop a formal cycling body in the region and in 1977 they founded the Newcastle Cycleways Lobby. It was not long before it was renamed the Newcastle Cycleways Movement, attracting hundreds of members and rapidly become a nationally respected organization. Besides community rides the NCM conducted bicycle clinics under the expert guidance of

Charles, who knew more about bicycles, in theory and practice, than anyone else in the country. At a glance, Charles' eagle eye could spot an incipient fault in a bicycle and with his hands demonstrate the prob-



Charles Coin 1949-2001

lem. Charles was a pioneering advocate of bicycle safety through the use of hard-shell helmets and conspicuous clothing. Dissatisfied with the unavailability of helmets in Australia he set up BikeTech, a modest operation importing American MSR helmets and other accessories of the highest quality for bicycles.

Charles joined the Australian Skeptics not long after it was formed and in 1987 became a foundation member of the Hunter Skeptics. Soon afterwards he was one of the three members of a Skeptics team debating creationists. Charles' contribution was typical: witty and original in contrast to the waffle of the opposition who played all the set pieces they could muster.

Charles had no patience with humbug and brought an incisive

mind to Hunter Skeptics meetings. Upon his departure for Brisbane in 1990 he was sorely missed by his many friends in the Hunter region.

Charles' move to Brisbane with his family was partly a result of the attitudes of corporate management. As a key scientist he was remunerated a disgracefully low fraction of the wealth he was bringing to BHP. He once told me his salary had been half that of the laboratory accountant, who was classed as management and paid handsomely. So Charles accepted a position with the Australian Coal Industry Research Laboratory as head of its new Coking Research Centre in Brisbane, earning him a much fairer reward for his talents.

Charles passed away on the 16 January, 2001. Such was the respect and esteem with which he was held that the large Crematorium Chapel at Mount Gravatt was filled to overflowing. The tributes flowing into the family home at Graceville were almost innumerable. He was a firm friend to a great many people.

Charles is survived by his wife Sue and sons Adam and Lachlan. His deep wisdom is encapsulated in his advice to Adam not long before his death:

*Question your findings, bear in mind you may be wrong, be prepared to take on new thoughts and not stay in one place, be prepared to look outside for tools when you don't have them. It isn't good enough to just have a concern and not act upon it. It is very important to stand up there and be counted, and not wave like the grass blowing in the wind, to stand like a tall tree. In the end you have to live with yourself."*

A worthy Skeptic indeed.

Colin Keay, January 2001.



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# Letters

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## □ Nuclear Balance

Jeffrey Tapping  
Mayland SA

For some decades I have read Colin Keay's advocacy of nuclear energy, originally in the journal of the Australian Institute of Physics, and recently in *the Skeptic*. I have always been a little disturbed by the stridency of his comments. They are an example of the problem which so often occurs when opinion is polarised, where each side presents evidence only in a way which favours their slant on the issue.

In his article Keay has a number of glaring examples of slanting the evidence. He down-plays the incidence of thyroid cancer in children near Chernobyl by saying "Few of the 1,800 cases of thyroid cancer found in children were fatal, since this is one of the most readily treated and cured". I find it quite disturbing that he seems to think the cancer rate is acceptable because most of the victims will not die. And his picnic in the fallout zone reminds me of Mr Bjelke-Peterson offering to drink insecticide to show that aerial spraying was safe. In his list of "Mischievous Anti-Nuclear Myths" item 11 is "No nuclear reactors have been safely decommissioned, and who pays the bill?" The second part is of course a question not a statement, and the meaning of the first will depend on how you define "safely" and "decommissioned".

If by decommissioned you mean something analogous to the naval ship process of shutting it down, securing it to a wharf and taking away its accreditation, then the answer is one thing, if you mean that the site is totally restored to its original condition and all of the debris safely disposed of

it will be another. A clue to Keay's idea of "safely" may be in item 21 of his list of myths "Not one scientist is prepared to state categorically that there is no risk of a nuclear accident". Perhaps he is the one scientist who proves the statement is a myth because there would be very few others who would be so rash as to say the risk is zero.

About thirty years ago I attended a talk in which I was assured that the Australian invention Synrock was the perfect solution to the nuclear waste disposal problem, which, even at that stage, was seen as the most serious objection to nuclear power. Since then I have read of immense effort expended on a series of proposals without success, which I confess has made me sceptical of the claims that nuclear energy has a nett benefit.

Keay implies in his Myth 13 that there is a safe disposal method for high level waste, but this must be another case of convenient definition because I have not read of one. Radioactive leftovers are still being put in temporary storage in holes in the ground until a satisfactory disposal method is devised.

By labelling the list of myths as "mischievous" Keay implies that they are deliberate mis-statements. I suggest that any exaggeration is the product of fear sincerely felt: people once believed that tigers had magical powers, but the tiger's teeth were still sharp. And much of the fear is brought about by distrust fuelled by approaches taken by officials and others who put themselves forward as experts. To me a claim that a reactor melt-down will burn right through the earth is no more irresponsible than a claim that nuclear reactors are perfectly safe – both statements are clearly false. In fact I think there is a case for claiming that the

nuclear industry is to blame for extreme statements by opponents, because they have not come up with an honest, balanced and detailed analysis of the cost and benefits in the short and long-term, and both social and financial. Suspicion will reign until they do.

I could raise an objection to every one of Keay's Myths, (who cares whether plutonium was named after the god of war, does it matter whether plutonium is the most toxic or the 43<sup>rd</sup> most toxic substance?), but I will not because I am not writing as an opponent of nuclear energy, I am just pleading for a more reasoned discussion. My brand of scepticism follows the definition in my *Macquarie Dictionary*, "one who questions the validity or authenticity of that which purports to be knowledge". And that applies to both sides of this and other controversial topics. I am not going to be persuaded by anyone who is clearly presenting a totally one-sided case. Too often I read in *the Skeptic* articles by writers who sound just as blinkered in their views as those they criticise, and I see Keay's article as one written by a proponent not a sceptic. Could we have more balanced discussion and less dogma, on all topics please?

## Editor replies

Colin Keay can, of course, speak for himself, as he does elsewhere in this issue. As for balance in articles, we expect our authors to support their opinions with evidence and if others disagree, then we offer them a forum in which they can air their differences. Balance is very often in the eye of the beholder; accuracy is of far more value to a *Skeptic* in determining the validity of any claim.

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In this case, however, as well as in many other issues in which scientific principles become the subject of widely disseminated public debate, then Skeptics should be very concerned that the claims made are supported by the science. We should also be concerned about the tendency of our news media, when covering public issues such as this, to give free platforms to articulate activists who are skilled in manipulating people's emotions and who very often win by default. Not infrequently these are people whose understanding of the science is no better than that of Chicken Little of the science of meteorology, or a creationist's of biology.

If, as a physicist, Dr Keay takes issue with many of the widely promulgated claims about nuclear energy that he argues, and supports with evidence, are far from the truth, then he is acting as a Skeptic should. The final decisions about the use of nuclear energy, nuclear medicine, or any other new technology, are more likely to be decided for political and economic reasons, rather than they are for scientific ones, but the least a Skeptic should require is that the scientific evidence used to support such decisions is accurate.

#### ☐ Not so simple

Mark Newbrook  
Monash University VIC

I applaud and indeed share Roland Seidel's enthusiasm for science (20:4, pp 30-34). However, I cannot accept his dichotomy between science and 'everything else' (p 34).

Logic, for instance, is NOT about 'right and wrong', or about human feelings. Neither is analytical philosophy more generally. Even the philosophical study of ethics is not mainly directed at finding out which particular ethical statements are 'true'.

But neither logic nor analytical philosophy are parts of science. Indeed, Roland includes 'philosophy' in his list of non-scientific domains. He makes a lot of sense elsewhere; but this oversimplified dichotomy simply will not

hold up. Indeed, it arguably counts as scientism (in the negative sense of that term).

#### ☐ Talent not a gift

Stephen Green  
Leongatha VIC

Recently I saw on television an item about so-called "gifted" children. While it is clearly demonstrable that some people exhibit extraordinary talent in some areas, I become very frustrated at the term "gifted" and its accompanying implication that a talent was specifically provided to that individual by some entity (God?) as opposed to the possibility that environmental influences, a chance distribution of brain cell types, a randomly triggered self interest in some topic or whatever has resulted in a particular talent.

Please do some work to bury this ridiculous term and replace it with something a little more logical like "specifically talented".

Thanks and keep up the excellent work.

#### ☐ Quacksalver

Scott King  
Hornsby NSW

I strongly support your Qakatak program exposing the various "quacks" out there. Thought you might be interested in this extract from a *A Superior Person's Little Book of Words*, a delightful composition of the most obscure words uncovered by lexicographer Peter Bowler (Methuen Australia 1982).

"Quacksalver, noun. Much preferred to the more usual abbreviated form quack: an ignorant pretender to medical skills. A quacksalver was one who quacked, or chattered boastfully, about his salves, or healing ointments.

The abbreviated form is fairly commonly used nowadays by the disrespectful as a synonym for doctor, for reasons unknown to the author. The use in such instances of the full form of the word would, it is suggested, help

to avoid embarrassment in the event of its inadvertent use in the presence of one of the medical fraternity; in deed, a casual reference to one's quacksalver may well pass unchallenged in a roomful of doctors, who will probably assume that you are speaking about an item of domestic silver."

#### ☐ Iridology in the pharmacy

Ross Hall  
Riddells Creek VIC

I recently wandered past a pharmacist in South Melbourne which had advertisements in the window and on a sandwich board referring to an impending visit from an iridologist for a couple of hours.

I know chemist shops have embraced the natural/herbal medicine marketing push, but I have never seen such a blatant promotion of non-medical charlatanism before. Do you know if there is a professional association to whom I could complain?

It seems strange that the community's standard resource for expert pharmaceutical advice has become outlet for the looney brigade.

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### Contributions

We welcome letters and other contributions to *the Skeptic*. For preference they should be sent by email, computer disc or as a printed original, though short items may be hand written.

We also plan to use more photographs in future issues, particularly those of the authors of feature articles. Please do not send any that you would like returned.

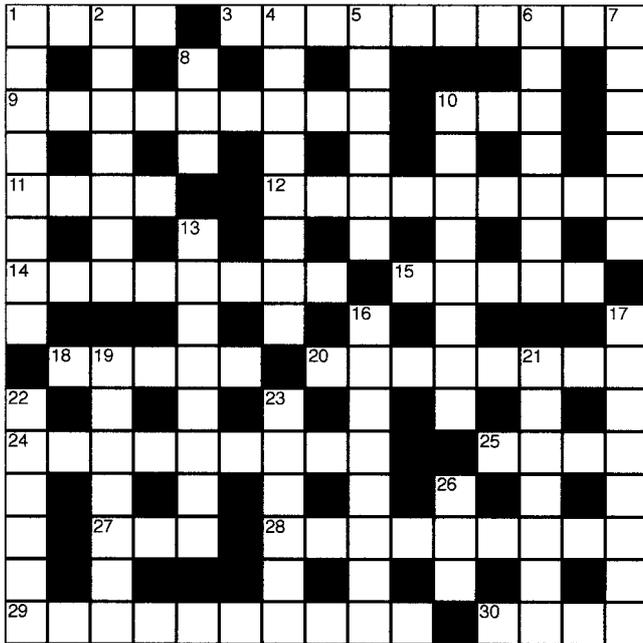
### Deadlines

For inclusion in *the Skeptic*, contributions should be received by:

Autumn issue	Feb 1
Winter issue	May 1
Spring issue	Aug 1
Summer issue	Nov 1



## The Skeptic Crossword No 10



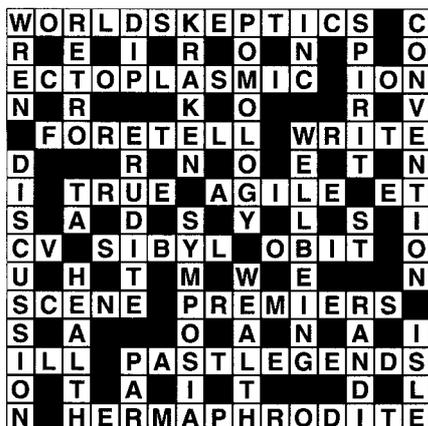
Return to: Skeptic Xword  
PO Box 268, Roseville 2069

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Entries will not be opened until May 1 and the first correct entry opened will be the winner. The prize will be a book by Richard Dawkins.

## Solution to Crossword No 9



The winner of Skeptic Crossword No 9, and a copy of Richard Dawkins' *Climbing Mount Improbable* plus a package of spices from Michele's Pantry, is Mrs A F Hartley of Thirroul NSW.

We must apologise for the errors in the grid for No 9, from which four black squares were omitted. The perpetrator was counselled before being garrotted.

## Across

1. It precedes Believer in Skeptic-speak, and that's no lie. (4)
3. The Air Force, for instance, used to drop boats. Upon their oaths. (10)
9. Unite ears around the mouth. (9)
10. Owe it all to morning moisture? (3)
11. Tour upset in a disorderly retreat. (4)
12. Parrot drawing tells no lies? Or, rather, it only tells lies. (9)
14. East is the genuine intangible. (8)
15. The truth found in loud doings. (5)
18. Wander like Saint Raymond. (5)
20. "That is BS, 99 99" shot back the Italian gigolos. . (8)
24. These tissues makes me pine, Uriah. (9)
25. Solomon makes brief personal declaration when isolated. (4)
27. Conditionally associated with the butless. (3)
28. Good time girl. (9)
29. They're not real crooks, just whoppers. (10)
30. Deceit that is in the Law Society. (4)

## Down

1. Little Theodore gets up badly, or so the suggestions go. (8)
2. Nut hurt badly by a fib. (7)
4. Umpire's responsibility for drama in the middle. (4,4)
5. Impressions about 50 principles. (5)
6. Inaccurately found in a former capital. (7)
7. Chesty cut down by a haymaker. (6)
8. A degree for 500 is not a good thing. (3)
13. Dame errs badly in discounting these idealists. (8)
16. Wangled a flange I'd twisted. (8)
17. Le Sadism takes you down the wrong path. (8)
19. For unimportance, little can rival it. (7)
21. Silent dog, as in Benji. (7)
22. Polish it one more time, or I'll ignore you. (6)
23. Too much French Italian flower sends you crazy. (6)
26. I don't say yes. (3)

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