



the **Skeptic**

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views and reviews



Apocalypse When?
Acupuncture - The Facts
Cricket Superstition Bowled Out

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From the President

In 1985 some 200 people met in the Institution of Engineers, Sydney, for what was then a unique event. It was the first National Convention of the young Australian Skeptics movement and the media had a field day with the novel idea that a group such as the Skeptics could even exist, let alone that we could have a serious purpose.

Since then, we have grown into an organisation that is recognised as the voice of reason and as a body whose opinions and responses have to be taken into account by those who seek to promote irrational thought. Subsequently, we have had seven more successful National Conventions, held in Sydney, Melbourne, Canberra and last year, for the first time in a regional centre, Newcastle.

Those who have enjoyed and been enlightened by our conventions are probably not fully aware of just how much work goes into making them successful, nor are they aware of just how few people are actively involved

in organising these affairs. Now we are about to witness our ninth annual convention and, as usual, a handful of dedicated enthusiasts have put it all together.

At this convention, we will have the opportunity to meet one of the world's leading psychic investigators, James Randi, and to see and hear this remarkable man presenting the evidence that has exposed more than a few peddlers of paranormal flim flam. As well, we will hear papers on many of the issues that concern us as Skeptics, from the dangers of untested therapies, through the burgeoning New Age movement, to the threat posed by a popular media which uncritically promotes magical thinking.

Our hard working Victorian Committee deserves our support for putting this programme together and I urge all our readers to attend the Convention and to bring their friends along.

Barry Williams

the Skeptic

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Coming Events

Randi for Sydney

To ensure that our NSW readers do not miss out on an opportunity to see and hear one of the world's leading professional magicians and expositors of Flim-Flam, James "The Amazing" Randi, our special guest at the National Convention, will also be making a 'live' appearance in Sydney. As we go to press, the final details of Randi's presentation are not complete, but we can say that it will be a mixture of a magical performance and a lecture on exposing charlatans which should appeal to Skeptics and the public alike. A group of our local magicians will be providing support for James Randi and we confidently predict that this will be a great night of magic. Admission is \$10 for adults and \$5 for children and Concession holders.

The performance will take place at the Manly Warringah Rugby League Club auditorium, 563 Pittwater Rd, Brookvale on Friday, June 25 at 7.30 pm.

As we will also be advertising this to the public, we advise Skeptics to arrive early to ensure a good seat. There will be no need to book in advance. Write this date in your diary now!

Composite Issue

In the past two issues, we have promised readers that a composite edition of the first five years of *the Skeptic* will be published soon.

This has proved to be a much larger task than we anticipated, but we now have all the relevant articles in the computer, and all that remains for us to do is proof reading, layout and printing. We are confident that this can be done within the next two months and the full details will be contained in the next issue.

Meeting

Well known science broadcaster and winner of the 1989 Australian Skeptics' Journalist of the Year, Robyn Williams AM, has been awarded the 1993 Humanist of the Year. The presentation will be made by Dr John Hirshman at the Roof Terrace of the Australian Museum, College St, East Sydney at 1pm, on Wednesday, June 9. Robyn's talk will be "Keeping the Bastards Honest - the Humanist Approach". Skeptics are invited to attend this free public meeting. For further information, call Mollie Campbell on 389 4559.

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Australian Skeptics Ninth Annual National Convention

The ninth annual Australian Skeptics National Convention, organised by the Victorian Committee, will be staged at the Sunderland Theatre, Melbourne University, Royal Parade & Grattan Street, Carlton on June 19 and 20.

The programme arranged for the weekend is designed to be interesting and provocative, with something on offer to attract our many Victorian and interstate subscribers. The publicity planned for the convention will seek to attract the interest of members of the public and the media.

A rapid growth in the number of subscribers to *the Skeptic* indicates that many people are becoming concerned that the increasing tide of irrationalism poses a threat to the health of our society. And that irrational thought is on the increase is difficult to doubt.

The UFO phenomenon, which has in recent years been downplayed, appears to be due for a resurgence, particularly as the fantastic myth of abductions by extraterrestrial agents grows. A major Hollywood studio has just released in Australia a movie based on an 'abduction' which was exposed as a hoax by Philip Klass almost two decades ago. The crop circle phenomenon appears to be waning, but myths and fantastic explanations continue to circulate.

Last year's promised expose of rampant Satanism never eventuated but it continues to be promised. The end of the world is nowhere in sight but, as the turn of the millennium approaches, we can expect many, many more hysterical predictions of Armageddon and the proliferation of Apocalyptic cults. The events in Waco, Texas may just be the forerunner of worse outrages to come.

The creationists, the believers in a 6000 year old 'young Earth', continue their assault on the minds of our young people, with their insistence that their simple minded and intellectually unsustainable religious dogma is based on scientific fact and should be taught in public schools.

Our health continues to be threatened by untested remedies. As medical science does the hard work in endeavouring to find cures for AIDS and other serious

diseases, the proponents of 'alternative' remedies and therapies continue to promise 'no-pain' solutions.

Astrology, palmistry, tarot reading, numerology, channelling and other irrational paranormal 'New Age' philosophies continue to gain adherents, encouraged by an uncritical popular media.

Our program of speakers has been carefully selected to provide intelligent, thought-provoking, even controversial arguments about these and other topics. Among the speakers will be:

James Randi, our special overseas guest, professional illusionist, master magician and psychic investigator, who will instruct, entertain and amaze with his provocative presentations.

Dr Stephen Basser, convener of the Australian Council on Science and Health, who will question the benefits of the Therapeutic Goods Act. Why do pharmaceutical drugs have to undergo stringent testing, while 'alternative' therapies do not?

Tony and Joan McClelland, parents who rescued their child from a cult and who will pass on their experiences as a warning to others.

Professor Ian Plimer, who will cast his sceptical eye over the prophets of Armageddon and show how evidence can be doctored to fool even scientists.

Dr Bob Stevens, physicists and astronomer, who will ask why the skies are the focus of so much unreason. UFO's and astrology will be his themes.

Barry Williams, National President of Australian Skeptics, who will propose that ignorance kills and will support his argument with real life cases. He will question the role of the popular media in encouraging dangerously irrational thinking.

More details are contained in the Convention Programme in the centre pages of this issue.

Please book your tickets, using the enclosed slip, as soon as possible if you wish to attend what we believe will be one of the most exciting weekends of the year. It is essential that you pre-book for the annual Skeptics dinner.

And in particular, please invite your non-Skeptic friends along. Why should we have all the fun? ■

News and Views

The Natural Law Party, which claimed before the recent election to be the fourth largest party in Australia, stood candidates in more than 100 seats, but failed to take Australia into a new age with their 'scientifically proven' policies to solve all our ills. A quick glance at the list of seats in the papers on the Monday after the election showed that the NLP candidates ran last in most of the seats in which they stood, with between 0.3 and 0.5 percent of the vote. In some seats, where they received the advantage of the 'Donkey Vote', they achieved as high as 3 percent. In the Senate race they were outpolled by such parties as Australian Shooters Party, Australians Against Further Immigration, the Call to Australia, and the Abolish Self Government Coalition, among others. It appears that we are not yet a mature enough society to meditate and levitate ourselves out of recession.

* * *

Speaking of elections, I trust it has not escaped the notice of the readers that I made three accurate predictions out of four in the last issue (Vol 13, No 1, p 6). The election was won by the ALP, it was not won by the NLP and the campaign director of the successful party was Mr Bob Hogg, who has a four-letter family name, the second letter of which is 'o' and the third and fourth letters of which are identical. A 75% accuracy is much better than your average 'psychic' can achieve, certainly better than the record of Barry Eaton and Douglas Parker, whose predictions were reported in the same issue. If I cared to try the sort of excuse the average psychic uses, such as that my fourth prediction 'the

Coalition parties will win' was fairly close (they only lost by a few seats), then I could claim an 80-90% accuracy in political prediction. Political parties please note.

* * *

Still on the topic of elections, can anyone tell us whether *any* astrologer, psychic, clairvoyant or sooth sayer predicted the return of the government? We realise that most of the political pundits got it wrong, but they were relying on polls, gut reactions etc, while astrologers, for instance, are supposed to get this sort of information from planetary positions. Every psychic that we noticed made predictions that followed the general trends, but surely some of them must have got it right, if there is any validity in their claims of special knowledge. Failing that, can any of our astronomers advise us if perhaps Jupiter reversed its orbit in the last days of the campaign?

* * *

In a late breaking story on the election front, the *Sydney Morning Herald*, *Stay in Touch* column of April 29, featured an interview with ABC newsreader and astrologer Barry Eaton, quoting our item about his predictions in Vol 13, No 1.

Mr Eaton claimed a hit with his prediction of a 'political assassination' saying that the murder of Chris Hani in South Africa fitted that claim. He also claimed that his prediction of a coalition win in the election was a hit because "they won the election and blew it". Now that's what I call gall.

After describing the Skeptics as a "most boring society", Mr Eaton delivered himself of this gem, "As soon as Copernicus discovered the

earth revolved around the sun and not the other way around, they (presumably the Skeptics) branded him a heretic".

Now I don't want to be the one to teach Mr Eaton his trade, but the whole basis of astrology depends on a geocentric universe. Astrologers may pay lip service to the reality of celestial mechanics, which they clearly do not understand, but any horoscope chart will leave one in no doubt that they really do believe that the earth is at the centre of everything.

* * *

As I was crossing a Sydney street the other day, my eye was caught by a notice attached to the traffic light standard. Consisting of a drawing of one of the currently popular images of a UFO naut, the hand printed and photocopied notice read:

THEIR HERE
PLEIADEANS

and then went on to describe how one could determine if the Pleiadeans had kidnapped one.

The final warning advised that if one had had such an experience, one should "contact an independent agency, not the government who wants you to think you are crazy". There was no indication as to which independent agencies one should contact. The NRMA? the RSPCA? Alcoholics Anonymous? the NSW Rugby League?

Apart from the fact that these anonymous Pleiadean experts are clearly illiterate, I am forced to ask, as I have asked before, why the Pleiades? Can anyone pinpoint for me just when the Pleiades became part of the fantastic folklore of the dedicated UFOnut?

Philip Klass, the prominent

American *sceptical UFO investigator*, has pointed out in his Skeptical UFO Newsletter and in his book, "UFO Abductions: A Dangerous Game" (Prometheus Books, 1989), that in the USA kidnapping is a federal offence which is investigated by the FBI.

Despite the oft repeated claims by abduction 'guru' Budd Hopkins and others that there have been thousands, even millions, of Americans kidnapped by aliens, there is no evidence that the FBI has ever investigated this serious crime. Klass also claims that there is not even evidence that any 'victim' has ever reported the crime to the FBI, and he has had a standing offer since 1987 to pay \$10,000 to any victim whose claim is verified by the FBI.

Meanwhile, the number of Australians who have been 'abducted' remains inexplicably low, despite a recent visit by Hopkins and the strangely ubiquitous clues he proposes as evidence for abduction. Have you ever found a minor wound and don't know how you got it? Have you ever been unable to remember every minute that passes? If so, gentle reader, you have almost certainly been taken aboard a UFO and had your genitals and nose interfered with. It certainly makes you think, doesn't it?

* * *

Recently I received a call from a man in Brisbane who wanted the Skeptics to observe an ESP course that would finally convince us of the validity of this phenomenon. When I enquired as to the nature of the course and what was taught, he said that one of the topics was fire walking and proudly claimed that he had walked over hot coals unscathed. My response was to assure him that many sceptics had done the same thing, without the benefit of mind improving courses and that safe fire

walking had everything to do with the laws of physics and nothing to do with ESP or any other hypothetical mind powers. This seemed to nonplus him a little, especially when I suggested that he advise his teacher of the Skeptics' challenge to fire walkers to walk across a metal plate at a much lower temperature than that of glowing coals.

He then changed the subject and told me about the 'healing' that was part of the course. It seems that one can "merge your consciousness with another person's body, divine any illness and teach the other body how to heal itself". The 'theory' behind this remarkable claim is that, as the body's cells are regenerated over a period of years, any illness should disappear from any organ as the cells are replaced. If the disease remains, it is because we want it to. The merged consciousness teaches the other body how to do the trick at the cellular level.

Now a few objections to this theory spring readily to mind. My first question concerned how much he knew of anatomy. "Could you", I asked "point to your liver"? "No" was his response, but it did not matter, all you did was 'feel' that something was amiss and you could fix it up. I demurred from this simplistic claim, pointing out that, in one's ignorance, one could teach another person's pancreas to start converting itself into a second liver, which may just have drastic effects on their health. My second suggestion was that he try teaching any amputee he knew to regenerate a missing digit or limb. He allowed that he had not seen it happen, but believed that it was possible.

As a final request, he asked that a couple of 'open-minded Skeptics' might attend the course, a request that I said I would be happy to pass

along to the Queensland branch. He then exhibited final proof of his unworldliness by advising me that the Skeptics would be required to pay \$500 each for the privilege of attending. My response to that is not fit to print in a family magazine.

* * *

Thanks to Mark Dawson, a librarian from the ACT, for sending us an example of the letters libraries receive from creationists. A photocopy of an American form letter, it is written in pseudolegalese by someone for whom English does not appear to be among their first five languages. It demands that libraries carry more creation science books, particularly in the "560's to the 577's (Dewey Decimal) shelves". Rather than try to paraphrase this diatribe, I will let it speak for itself.

"The destructive evolution theory has resulted in a huge increase in crimes, gangs - murder, assault, suicide, burglary, theft, drug and alcohol addiction, rape and other crimes, in both adult and youth, including the class rooms where now only the theory of evolution is now taught, with immorality with a huge increase in teenage pregnancies..." This goes on for another five lines without a full stop.

"For a man to say that his wonderful and loving mother, who personally carried him for 9 months, then brought him into the world and cared for him and loved him as long as life lasted, evolved from an ape, shows a terrible disrespect for his mother, the Creator and all the creations, and the irrefutable and overwhelming scientific and historical proof of the falsities of all evolution theories of life and the universe..."

Perhaps those shelves dealing with literacy should be improved. **BW**

MEDIA

Pop Psychic Pabulum

Harry Edwards

At a recent meeting of the National Committee, President Barry Williams thrust a rolled up copy of *Woman's Day* into my hand saying, "Do something with this." Ignoring the rude connotation, I placed the magazine on the table before me and lo and behold it fell open like a well thumbed copy of Lady Chatterley's Lover at an 'exclusive' to reveal four pages of titillating poses by Rachel Hunter in skimpy swimware. Nodding my approval I asked what I was supposed to do with it. "Not that you bloody fool, read the articles and write something about them" came the admonishing response.

Curious to see what Superskep would find interesting enough to write about in a magazine already a past recipient of the Bent Spoon Award I thumbed through the mag.

'Exclusive' pics of Cher and her toy-boy; Denise Drysdale defends her lover, ('Exclusive'); an 'exclusive' on cricket hero Shane Warne; another 'exclusive' on an Aussie 'hunk' in Hollywood; four pages of pics of the interior of the White House; more pics of socialites, film and others personalities; and then...ah ha!

"CLOSE ENCOUNTERS" - three anecdotal accounts of Australians who claim to have been abducted (by you know who!) or have had a close encounter with a UFO. For good measure a story on those "mysterious" crop circles was thrown in under the heading "Aliens in Adelaide", accompanied by a pic of a not so circular circle and another of Colin Norris, director of Australian International UFO Research, poking around in the dirt. His expert opinion? "I can spot a fake a mile off. This is no hoax. There has been a visit from an extra-terrestrial craft here for sure." An accompanying scientist (discipline not stated) carried out soil and radiation tests and found the salt content in the circle to be 40 per cent higher than the rest of the paddock and radiation was up. As these characteristics are claimed to be peculiar to UFO circles (so the story tells us) what more proof could one ask for?! Prior to this 'landing', Norris had received a call from the Air Force because they were getting so many reports of lights moving and standing still in the Adelaide Hills. I see exactly the same sort of activity on the hills surrounding my residence...funny, I always thought they were car headlights not alien spacecraft,

just goes to show how wrong one can be!

The article starts with some comments from the 'experts', Roy Lake, chairman of UFO Studies, says, "You can't dispute the evidence that is materialising to the contrary", and Tony Dodd, director of research for *UFO Magazine*, who believes the aliens have been involved in genetic engineering for centuries concludes that "because the similarities of the stories related by the people under hypnosis are so strong, even skeptics would change their minds".

Well, here's one sceptic who won't change his mind for some very prosaic reasons. Firstly, anecdotal evidence, particularly under hypnosis, is not evidence at all. Secondly, despite tens of thousands of alleged sightings and landings of UFOs over the past half century, not one piece of tangible evidence in the form of hardware has ever been found, yet when the first Earthlings landed on the moon they left footprints, tyre tracks, electronic equipment, bits of space craft and a moon-buggy or two. Perhaps extra-terrestrials always "do the right thing"! Thirdly, one would have thought that if crop circles were depressions made by alien spacecraft there would be some consistency in their size and shape. To my knowledge no two have ever been shown to have had exactly the same dimensions. Fourthly, why would an alien civilization which, if it exists, would be far more technically advanced than our own, send spacecraft through distances measured in light years just to park on Earth for a few minutes and then whiz off into space? Fifthly I would suggest that the reason for the similarity of descriptions of aliens by alleged abductees is patently obvious from an accompanying photograph of one of them clutching a copy of Whitney Streiber's *Communion!* And finally, as man has made enormous progress in the field of genetic engineering in a matter of a few years it doesn't say much for the aliens' medical technology if they have been slugging away for centuries and are still experimenting on foetuses.

In a box labeled "UFO researchers believe" we are told that an alien spaceship is spotted every 15 seconds; women up to three months pregnant are being abducted and their unborn babies snatched; male abductees are

being used for bizarre experiments; 50,000 US security documents are being withheld from the public and governments are covering up sightings to prevent mass civilian panic.

Having spent many a balmy night on my patio relaxing with a coldie and a pipe gazing at the stars, I have never spotted one of the 2,102,400 spacecraft allegedly passing overhead each year and conclude that my suburb must be in a UFO free zone as well as a nuclear free zone. *Woman's Day* readers can take comfort from that and may like to note that I currently have a couple of vacant units for lease and give a written guarantee that female occupants will not be abducted - at least not by aliens!

The suggestion that governments are 'covering up to prevent mass civilian panic' is quite amusing when one considers the number of government 'secrets' periodically leaked, and surely if it were true, then that knowledge in itself would create more panic than suppressing it would.

Moving on through the mag we have Fiona McCullum, Australia's "best known and most accurate clairvoyant" (aren't they all?!) answering questions sent in by mail. There is no indication or confirmation that any of her answers to the questions were accurate or otherwise.

Then we have "The Lovers' Tarot", the brainchild of "sex, psychology and psychic expert" Jane Lyle, who has used the tarot to predict the course of love affairs over the past ten years.

Wait, there's more! An exciting numerology guide by Australian numerologist Christopher Mason, which predicts your good and bad days for work, love and play, and palmist Jan Sinden, who will read your palm from a photocopy.

Had enough? There is also Joan Hanger revealing the secret meanings hidden in your dreams, and Athena Starwoman dispensing knowledge gleaned from the heavens.

A total of thirteen pages of unsubstantiated occult pabulum resulting in record sales.

OK Harry, so what's the point of your article? Women are the first to complain that they are discriminated against, treated as second class citizens, considered intellectually inferior and incapable of rational thought; and yet the popular media, which sell in the millions of copies per week, on which many of them rely for information and advice encourage irrational thinking, superstition and the uncritical acceptance of unsubstantiated paranormal claims. It would seem that some women are their own worst enemies.

Stop Press

Since writing the above, a copy of *New Idea* (Dec 5, 1992) has come into my hands and guess who's making a comeback - Uri Geller, not as a psychic but as the star of a Dorothy Dix column!

The article commences by saying that after years of amazing the world with his psychic powers, Uri Geller has decided to channel his energies into helping people lead healthier lives.

One could be forgiven for suggesting that as he is no longer able to get away with fooling the public with his conjuring tricks this is simply another and less vulnerable business venture.

He already has a newspaper column in Britain and in an 'experiment', involving special 'energised' orange paint or ink, thousands of readers who took part reported dramatic changes to their lives. The unemployed found work, people trying to sell their homes were inundated with offers, and some sufferers of chronic aches and pains felt better. Of course the number of people who noted no change in their status or affairs was not reported. This particularly ludicrous load of rubbish is now being promoted in Australia.

Also in the article there were the usual misleading comments on *deja vu*, linking it with psychic powers, and a paragraph about how Uri overcame bulimia. In his column Uri investigates a range of fascinating subjects - UFOs and star signs - and offers advice on how to improve your sex life and how to communicate with animals, from household pets to dolphins.

In another column in *New Idea*, Geller tells how he contacted NASA about the jammed antenna on the Galileo spacecraft (*en route* to Jupiter), offering to use his 'powers' to free it. As NASA engineers are doubtless working hard to overcome the problem and as they may possibly have some success (just as they did with the jammed camera platform on one of the Voyagers) we can expect to see Geller claiming credit for any improvement. Meanwhile, he still has not explained why he did not use his powers to prevent Scud missiles landing in his homeland, Israel, during the Gulf War.

For Australia, he is preparing a special column on the telepathic abilities of Aborigines. Apparently he hasn't seen the Telecom ad in which an Aborigine is using a mobile telephone! ■

Don't Forget the Convention!

MEDIA

Mueder Case: Psychic no Help

Danny Varney

“Nauseating” and “disgusting” were the words being bandied about Perth’s media when a local television station brought in a ‘psychic’, Zara, to help solve the murder of a mother and her three children at Greenough, late in February 1993.

The basic story is that the mother had started living in a transportable house on an isolated block some 20 km from Geraldton. She was about 32 and had a son 16, who had lived with his grandmother in Queensland for 14 years. A month previously he had gone to live with his mother and returned to school. The two younger children, girls aged four and seven, had also just started at the local primary school. The killer slew them all using either a hatchet or a meat cleaver. The mother and elder girl had been sexually assaulted. Police confirmed the mother had an involvement with drugs and that it could have been a ritual Chinese Triad killing of an informant. Geraldton was mentioned as a drop-off point for drugs entering Australia and drugs are readily available in the area.

The *West Australian* (the morning daily) ran the story and pointed out that neighbours had heard a dog barking and also that the mother had been warned by “a Geraldton spiritualist that the tarot cards indicated her life was in danger”.

A few days later, the media were allowed into the farm house and most television stations, including the ABC, had graphic footage of the interior of the house. All cameramen seized on three photos of the children, one each of the two girls and one of the boy in a *rabbit suit*, with a clear view of his face framed by the ears.

The newspaper story gave details of Christmas cards, messages to Santa, school reports, essays, letters and the hundred and one details of family life. Later, home videos of the mother and two girls playing were released, showing the interior of the house.

One TV station brought the grandmother and another daughter to WA and set them up in a studio. They then did a cross to ‘Madam’ Zara in an outside broadcast. The medium had her head covered in an Arab-style headdress and completed the ensemble with a huge pair of ‘punk’ style sunglasses, so that only her lips could be seen. Zara went into her spell and, lo and behold, she

said she could see “rabbits” (remember, most TV news programmes had shown the boy in the rabbit suit while the grandmother was en route to WA). This produced a natural and immediate reaction from the two women in the studio. Both burst into tears and, in near hysteria, cried:

“Oh! How could she have known that...?”

Cut to a smirking Zara:

“I don’t know how it came to me...I saw rabbits coming up here...”

Cut back to the studio where the two women have become even more stressed.

“Oh that’s Danny ... how could she know ... he put that suit on to earn money giving lollies away at schools, she couldn’t have known...”

A few days later Zara and the two women were taken to the farm house. Zara poses in her mystic costume outside. Then, with crystal ball in one hand and making passes, enters the death house to make contact with the spirits of the murdered mother and children.

A zoom shot through the window, all that was allowed, showed Zara with the women. They came out and, complete with crystal ball and mystic costume, Zara poses for the camera, lifts her arm, wriggles fingers and, pointing to the far distance, converses with a ‘spirit’:

“I hear a dog barking” (presumably the dog mentioned in press reports). Then she claims she knew “Who dunnit”, but cannot reveal it. Turning away, she states from behind her glasses:

“The police are on the right track.”

The grandmother and sister are now absolutely convinced they are dealing with a ‘genuine’ psychic because she had never been in the farmhouse before, or knew anything about the family. Whereas every Western Australian could have told them the same things from daily front-page stories, plus page two and three, plus movies and videos released by the police and shown by the TV stations.

The TV station milked the story for all it could, after all it had paid for the two women to come to WA. It kept it going with promos, night after night. It did street interviews on the merits and demerits of mediums (media?) and spiritualists. Most people were either

sceptical or unconvinced and there were only one or two believers.

After a few days the WA Skeptics were asked to give their views on mediums, and in particular Zara. It was a Monday public holiday in WA and I had a full half hour's notice of an interview. Hastily grabbing what I could from past issues of *the Skeptic*, on police work with psychics, Tarot and ESP cards, a standard cold reading, a clean blue shirt, a quick shave and shower and a cab and off to the TV studio.

On the way, I tried the standard cold reading on the taxi driver, to get warmed up for the interview. While waiting for the receptionist to fill in the cab voucher, I asked the driver what he thought about the reading.

"Ninety nine percent accurate" he said.

I tried it out on the receptionist and make-up lady. Result? "It's us". Then into the studio for some preliminaries:

"Do you want me with glasses on or off? ... Oh, only got two minutes..no time for that literature ... raise the seat ...hands on the table... Hello, you're the interviewer"... then, quite cold, shown the tape of Zara and the two women.

Then into the questions, which went along the lines of:

"How do psychics relate to police work?"

"Absolutely useless, everywhere it has been tried it failed. There are reports in police journals showing that ...and in Tasmania, the police had to back-down when they brought in a psychic."

"How do you account for the revelation about the bunny suit?"

"Easy, she threw out a lot of things like shotgun pellets..OK..she got a strike with the rabbit suit..I have seen that clip only once but look at the way she reacted when she saw she had made a strike...she could have said a bluebird or a bent blade of grass. I don't know how long a sequence you took but you certainly did some editing to get the shot." (I didn't know about the boy's photo in the bunny suit then.)

"You must admit that people in situations like that do need some counselling and help."

"Yes, but not from mediums. There are trained clinical psychologists to do this. They are professionals, and would charge no more than mediums."

Then I got a chance for a final shot at mediums. I pointed out that before the previous state government changed the laws last year, mediums were often being arrested after foretelling the future for police officers. With all their alleged powers, they could not detect a police officer out of uniform. The interview closed with

pleasantries and thanks. I was asked would I debate the issues with Zara.

"Too right, anywhere, anytime, but give me paper and pen. I will make a prediction." I wrote out a prediction and folded it up. "Don't open it until you have asked Zara." (Can fellow Skeptics guess what my prediction was?) Alas, to date the TV station has not got back to me.

Overnight, I found the newspaper photo of the bunny suit. At 9.10 next day, I rang the TV station, suggesting that we could 'nail' 'Madam' Zara. "Thank you, we'll get back to you." They never did, but they kept the promo going for several days.

But that is not the end of the story. Two nights later I was practising sports medicine at my football club. Many of the players had seen the interview and had also seen me doing magic at Players' Reviews. They reckoned the medium was a fake and one of the player's little daughter was there. She came up to me and said "Saw you on TV the other night..."

"You did, that's good. Did you understand it?"

"Yes".

"Well, who do you think was telling the truth, me or her?"

"Oh, you of course."

So fellow Skeptics, it does look as if we are wearing them down. It's very interesting to note that none of Perth's media were at all interested when I phoned them to say I had solved the bunny suit claim. None wanted any further part of the "nauseating" story, but all were aligned our way. Neither have the police availed themselves of the services of the mystics, psychics or 'hypnotism' of those who might be able to help.

And, as usual, we can expect murders to be solved by painstaking police work, an odd lucky break or to go on file as unsolved.

Those who are interested in the topic of police and psychics can find the results of a survey of US Police Departments and their response to psychic offers of help in the Winter 1992 issue of *The Skeptical Inquirer* (available from Australian Skeptics \$10). The report is very unfavourable to the myth of psychic crime busters, with the majority of respondents stating that while information from alleged psychics, as with any other information received, must be investigated, it is invariably a waste of police time and resources.

We would be very interested in publishing a report if any of our readers chose to investigate the claimed use of psychics by any of Australia's police forces. **Ed**

PROFILE

The Plimer Principles

Seeking the truth between rocks and hard places

Adam Joseph

Robin Williams on the ABC *Quantum* program obviously knew that someone was going to corner Ian Plimer. What he didn't know was who or when, so he got in first with a series of finely crafted interviews with some of Australia's finest people of science. Putting together such a list is no easy task, but in that list you would have to include Professor Ian Plimer, holder of the Chair of Earth Sciences at Melbourne University. Distinguished in his field, he is also highly controversial for his public attacks against 'creation science'.

As the 1993 Australian Skeptics National Convention draws near, I thought I might try to look a little closer at this Skeptic for the benefit of the many who have only read of his exploits, seen him on television, heard him on radio, or caught him on the lecture circuit. At the convention this year, Plimer will be discussing "Armageddon - An Everypersons' guide to Finding Geological Evidence for the End of the World". No doubt it will be just as confronting and controversial as his previous talks. Maybe even more so this time as it will be coinciding with the release of his new book "Telling Lies for God".

So what makes this Sydney born educator, who fell in love with rocks at the age of three and always knew he was going to be a geologist, tick. I have always believed that if you ask direct questions, the answers will give an insight into the persona of a person. Ian Plimer's honesty is such that he deals in facts, sometimes gets emotional over facts, and it's very hard to believe that everything he says is not based on those hard and honest facts.

Adam Joseph. Publicly you are becoming better known as a fighter against creationists, does it ever concern you that some might construe your motivations and see you as an advocate against all established religions?

Ian Plimer.

In my own field I guess I'm better known internationally than I am in this country. In this country I'm as well known for my public stands on various issues,

as for my science. And in the community at large I'm probably only known for my anti-creationist activities, and not for my science. But if you were to interview someone in Denmark, or the UK or the US, I wouldn't be known at all for any of my anti-creationist activities. The second thing is, creationism is anti-religious, it's anti-theology and it's only the wacky cults and the fringe fundamentalist religions that would want to view me as being as anti-religious; the rest of them are very strongly supportive. So it's not anti-religious; my stand supports religion, as a cultural fact; supporting culture against these wacky cults. Religion is a necessary part of civilised culture, it helps give a social structure.

Given the financial base of many of these fundamentalist groups, are you concerned that this power may be used to discredit you publicly, given your profile against creationism?

I have absolutely no doubt that they will be doing everything possible to discredit me in public. We've given a lot of thought to that, on how to handle it, and we've prepared for it. We've done all the homework and there have been certain documents lodged in certain places and with certain people in the media just in case this happens. We know fully well what's likely to happen because our fundamentalist friends have a fairly well-known pattern of doing things.

What kind of message would you like to send to two well known creationists, Drs Carl Wieland and Andrew Snelling ?

If they want to take me on in public? They can go for it. We've done an enormous amount of home-work on them, we have reams of information, we would love it to appear in the public arena.

Many academics cruise through life quietly. The public perception is generally of studious, hard-working, hard-thinking, self-opinionated, but nevertheless introverted personalities. Your persona contradicts this image. There's a brashness or forthrightness in not only presenting things the way you see them, but in strongly presenting your evidence as well. As opposed to the public perception ... what is it that makes Plimer run?

I'm a perfectly refined gentleman. For example, the last Sabbath I spent in the Captains Flat Hotel, which is a pub in a mining town, drinking with two aboriginal football teams playing two-up. I'm very much in my element when I'm in all different quarters. I quite often speak at international functions, to boards of major companies, I work within the university structure, and I spend a lot of time in the bush. So I'm very comfortable in all sorts of areas. Brashness is one part of that. What makes me run? I guess its energy. I have an enormous amount of energy.

What are your thoughts on how educators educate?

I reckon a lot of the kids haven't got the basics. When they come out of school they can't communicate as well as they should, they can't do simple tasks that they should be able to do, and the greatest skill they miss out on is being critical. They can't actually think. No one gets taught how to think and that's a real tragedy. These kids come out understanding that research is just digging up information from the library rather than finding out new information for themselves. They come out really in an iron lung in many ways and it's a bit of a worry. I think creationism is very much related to that; that these kids haven't got the ability to critically think.

So what do you think is wrong with the educators and how they educate?

I think a lot of people are just cranking the handle, just handing out the same crap they were handed out, rather than forcing people to actually learn. The way that I like to teach is the Socratean approach, have a sequence of ordered questions to throw at them. ... so it's question, question, question, question, all the time.

Many people would regard holding the Chair of Earth Sciences at Melbourne University as the ultimate prize at the prime of life. You appear to be just gathering steam, or is this just my perception? What's the pot of gold at the end of your rainbow, bearing in mind that we Skeptics don't necessarily believe in the Wizard of Oz?

I don't see it as a prize of life, and I wouldn't also concede that I'm gathering steam. What's happening is

I'm just refocussing various things. I've always been flat out and I'm just putting energies into different things now, whereas in the past I didn't put the energy into that area. What do I want to do at the end of it? I'd absolutely love to have a television series on the evolution of the planet. It would be fantastic. In fact I've dug up a lot of information on that already.

There have been some close calls in your past where your life almost came to a very quick end. You were in a jet that went down and two helicopter crashes. Did you at any stage during these events have your whole life flash before you? Were you inclined to pray? Make hasty promises to change your ways? And did they change your life in any way?

Not at all. There was no repenting. I'm a great admirer of Don Giovanni—he went without repenting. No prayers. No life flashing before me. Just sheer anger that some bastard had put me into this situation and it was out of my control. Someone who was criminally responsible had put me into this situation. So it was more anger that I was exposed to going out quicker than I thought I should. And it didn't change my life in any



fundamental way at all.

Let me put a question to you similar to one you put recently to Professor Paul Davies. How different is your idea of a creator of the universe from that of the creationists?

I don't really have an idea of a creator. The creationists have this creator who is evil, who is small-minded, who is malevolent, and who is not very bright and can't even get his science right. Creationists have made their creator in their own image in my view, whereas my concept of a possible creator is certainly not that. There are some marvellous things that have occurred in nature, and natural science shows us some phenomenal processes which we don't understand. Just because we don't understand it doesn't mean we have to make a creator to explain it. I'm quite happy to have no explanation. It's the insecurity of no explanation that creates dogma.

In your scientific endeavours over the years, has there been anything that you believed in absolutely, with all the evidence staring you right in the face, that was later proved to be incorrect via new evidence coming along to change your view?

I've never been in that situation, at that extreme. I've been in the situation where I've had my work quite severely criticised, and as a result of the criticism I have either changed my views or collected more information. The first time it happened was a very close friend of mine who actually wrote in scientific journals criticising my work, but of course he was doing it scientifically and not personally. My biggest critics now are my research students and the research team around me, they really hop into me. I've never had the situation where I've absolutely believed and got all the T's crossed and have then had to diametrically change my position. But I'm always changing my position, with new evidence. That's quite normal, if you don't then you are not evolving.

What got you involved with Australian Skeptics?

I was at a meeting at Macquarie University on evolution and creationism in 1987. I gave a talk there and this rather portly gentleman with a grey beard and the lower two buttons of his shirt straining over the belt came up to me and said "You should be one of us". I took a look at him and thought "Bloody hell no". He gave me some of his propaganda, which I was going to throw in the bin, and I read it and thought "No, I will be one of them, they sound a pretty good group". So it was after that memorable meeting with Sir James Wallaby that I joined the Skeptics.

Australian Skeptics has an image problem in some quarters, probably because we only seem to pop out of the woodwork when we are asked to debunk or refute a claim being made. In that process, we sometimes step hard on years of cultural belief. Maybe the name Skeptics is a bad one. What do you think can be done by Australian Skeptics to get the public to think more critically?

For a body with a thousand subscribers it is an incredibly effective organisation; it has an enormously high press profile and I think Australian Skeptics is going from strength to strength. The name is established so, whether you like it or not, I don't think we can change it, although I do think the Skeptics have got an image problem, and the image problem is that they are 'knockers'. So I think that each and every one of us, who ever have to look into a camera or have the microphone in front of us, must portray the positive view

that we're a community watchdog group, and we're concerned about the paranormal and the pseudoscience in the community. It's a lot of fun, but behind the fun there's a seriousness.

Legal reasons do not permit you to talk about the incident last year with 'Dr' Allen Roberts and his 'Noah's Ark' but what can you tell us about the experience? Did it distress you? Will we hear the full story at the end of the day?

Can't tell much because it's before the courts, however we have half a dozen reasons to suggest why we are going to win it. He has sued me for defamation, and of course with defamation he can pull out at any time by just paying the costs. My view is that we shouldn't allow people of his ilk to go around doing that and then to escape unscathed. So I've initiated action against him for Breach of Copyright, Trades Practices Act and Fair Trading Act in the Federal court, so that even if he withdraws the defamation against me, I've still got him with his back to the wall in the Federal court. Both those actions are going on concurrently, both of them are using the same sorts of evidence, and we will be attempting to prove in court that he hasn't been defamed because he hasn't got a reputation to defame. In terms of the Copyright, Trade Practices Act, that's still proceeding. We think we're in an exceptionally strong position. As far as being distressed, I was concerned that there were little old ladies opening their purses and a large number of people going to his meetings knowing the answers before they went there, and I was concerned that there was a total uncritical acceptance of what he said. We certainly will hear the whole story. Sitting right on my desk is a book in progress called 'The Sinking of the Ark'. Each day we add a little bit more when there's a new legal twist. We will certainly see something come out of this and the whole story will be told, which is why I will not settle for an undisclosed settlement. I want the result of any case to be made public.

You have a new book "Telling Lies For God" due for release shortly by Random House. Having read a pre-release copy, might I say that it's the most confrontational book I have ever read in respect to tackling the followers of creationism. You name names, dates, places and events. You accuse people of scientific fraud, deceit, and even madness. My view is that the book has clearly been influenced by the facts of nature. Having said that, it also throws down the gauntlet so hard, especially to the Creation Science Foundation, that this may end up in the courts as well. Firstly, if some parties are game enough, is that where you want creationism finally

contested? And secondly, what kind of confidence do you have in the publishers to stand by you?

I take issue with you, I think I have been very temperate in this book. Okay I'm only joking. Yes I have been very blunt, I have thrown down the gauntlet, and I have let the facts speak for themselves, and I am praying to my God that they take me to court. We have a huge amount of information on the leaders of the creationist movement and on the nature of creationism. The correct place to deal with this social issue is in public where they have to make an affirmation, because they won't swear on the Bible, that what they say is true, and then be exposed to cross examination. We are just champing at the bit to cross examine the leaders of the creationist movement in public so that it can be reported each day in the press. I want to have creationism contested in the courts, that is where we win. If we win the case, we win the cause. And if we lose the case, that's fine because I'm a man of straw. We have been well prepared for this for quite some time and that (court) is the place to deal with it. As for the publisher standing by me, well, there is a contract and money has changed hands, so I think they are committed to standing by me.

You have given many public presentations on science vs creationism, you will also be giving one at the Skeptics National Convention in June. The ones that I have seen have been confronting, but nowhere near as confronting as in your book "Telling Lies For God". Your presentation, 'Armageddon - An Everyperson's Guide to Finding Geological Evidence for the End of the World'. How confrontational will you be? What can the audience expect?

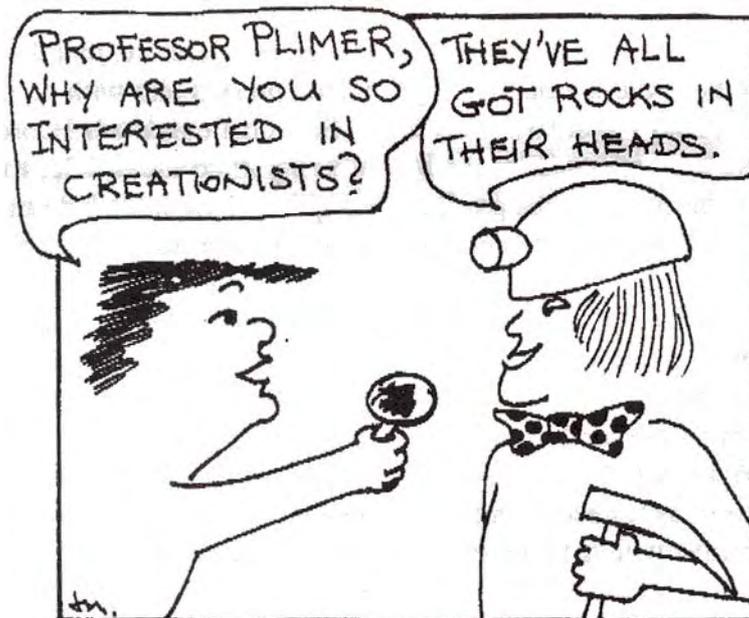
It won't be confrontational. I will be showing how you can 'cook' evidence, so that the lay person or the person who is out of their scientific field doesn't know. I'll be using a technique to show the evidence and the logical conclusion you can draw from it and what is the real conclusion you make from it. I'll be showing how, even if you get the correct evidence, you can con an audience, and how easy it is to 'prove' that the world is coming to an end. And we can put the date and time on it. There are not many in the community who know much

about geology, so if I use my field I can show you can con people very easily. The audience can expect me to show, firstly a number of myths which we can destroy, things like Atlantis, the frequency of increase in earthquakes and things like that. Secondly on how easy it is to con people. That's why we have organisations like the Creation Science Foundation that are thriving.

Finally, just on a slightly more philosophical bent, the world today has more knowledge than ever before, yet there seems to be a number of backward steps being taken. Religious cults are growing in number, communism has fallen, but even that seems to be opening up a new avenue for paranormal purveyors rather than everybody taking advantage of intellectual freedom to become more rational. Violence and hunger still dominate many places. There seems to be no 'New

World Order' in sight, and the more we know, the more problems we collect. How positive are you about the future?

Firstly in regard to a New World Order. I would hate to have a New World Order. I think that's been tried many times in the past and to have an American-driven New World Order, the thought is just frightening. We now have a planet of five and a half billion people, we're approaching the limits of growth, and part of the political



competition we have leads to violence and hunger. The planet is now full, there are too many people here. Technological advances are so rapid that people can't keep up with them and so they retreat into the simple, into the dogmatic. Combine this with enormous insecurity: financial, political, emotional, religious, and you get some of the ridiculous ideas that people are having about the end of the world. In the next ten years we are going to see a lot of problems arising because of insecurity and population and food problems. It's hard to see a solution. However, I am very positive. The only way we solve these problems is through the young people and arming them with knowledge and critical ability. You can't solve problems with dogma. This is why I'm so concerned about the educational threat of creationism, and I love education because I'm dealing with young people, and they are the future and they want to solve problems.

DIVINING

Mahogany Ship Still Missing

Steve Haynes

The Victorian city of Warrnambool lies at one end of a stretch of notoriously dangerous coastline. Early mariners dreaded the waters between Warrnambool and Cape Otway, with something like 600 vessels having been lost on its cliffs and reefs.

Today the coastal towns capitalise on its heavy maritime toll, promoting it as the Shipwreck Coast. One author of a book of shipwreck stories coined the name 'Bass Strait Triangle' for the waters bounded by Warrnambool, Cape Otway and King Island. It was a no nonsense book of true stories, carrying no implication of supernatural intervention in the many mishaps. But recent events cause me to conclude that this author was really on to something.

For the past year Warrnambool has been invaded by a series of diviners with an extraordinary range of powers. So great has been this concentration of paranormal power that I believe Warrnambool does in fact lie at the apex of a mysterious disturbance of energy lines. Here, where the force lines intersect, must be some sort of energy vortex into which these gifted individuals are able to tap.

My attention was first drawn to this paranormal parade by an article in the local newspaper, the *Warrnambool Standard*, about a chap named Richard Foord from nearby Port Fairy who claimed he could dowse practically any substance or object without leaving his own home. All he needed was a pendulum and a map. His technique was to hold the pendulum above the map and watch its behaviour as he moved it around. The way it moved - the angle of the dangle if you like - told him everything. He had, for instance, located various oil fields in the area and was able to specify the depths and sizes of these deposits. He could find other things too, including missing people. He had also located water at Tennant Creek, 3000 kilometres away, without leaving his home.

Within a week of the newspaper article, a small book appeared in local shops called 'Teach Yourself Divining', written by the same Mr Foord. I bought a copy and discovered far more about this man's remarkable powers. In his opening paragraphs Mr Foord pointed out that his powers were nothing special. Everyone has them if only they take the trouble to tap into them, he said. The book went on to instruct novices in the art of divining. Step number one was to learn to find water in a garden hose. Simply lay the hose out, turn it on and then let the rod react as the user walks over it. Mr Foord recommended

this as the very first step in learning to dowse, so I assumed he would have little trouble doing so himself. It seemed, therefore, that the Skeptics' buried pipes test would present him with no problems.

So I challenged Mr Foord, via a letter to the paper which carried the article, to undertake a test with the Skeptics. I explained about the prize and outlined the nature of the tests which have so far been miserably failed by others.

All was silent for a several weeks until my work took me away for a few days. When I returned there was a message from the newspaper seeking my response to a statement by Mr Foord that he would submit to a test, providing the Skeptics had nothing to do with it. The newspaper had published his statement with a note that I had been unavailable for reply. The essence of his statement was that he would predict the locality and extent of oil deposits in the region and submit his predictions to BHP, which is currently carrying out oil exploration in the region. Validation of his claims would come when BHP eventually drilled the sites, he claimed.

I rang Mr Foord to explain that the nature of his test was unacceptable. Although BHP is carrying out exploration in this region, the likelihood of the company drilling specific locations on the say-so of Mr Foord's wobbling pendulum seemed extremely remote. So his claims would go untested. I also pointed out that such predictions, even if correct, were statistically meaningless. There is oil in this region in a number of places. His prediction, I explained, was rather like sticking a needle into a fruitcake and claiming supernatural intervention when you skewered a raisin.

I asked why he would not agree to the much more quantitative test with buried pipes. His reply was that it was not possible to detect such small quantities of water. One needed large amounts of water such as underground rivers or aquifers. I pointed out that this didn't tally with the instructions to novices in his booklet, recommending a garden hose as an ideal first target. He was unable to resolve this inconsistency.

In his book Mr Foord claims he can locate objects made of almost any substance except gold. Gold is the one substance with which he has had little success. This, he says, is because where gold lode occurs there is usually a surrounding area in which some gold has been carried away in suspension by water, leaving a broad area laced with specks of the metal. To quote from his text: "As one atom of gold gives off the same radiation as a nugget

it is impossible for the diviner to identify any particular piece.”

I put it to Mr Foord that many molecules of water are present in the soil between a diviner and any underground stream. Would not the same principle prevent the diviner differentiating between soil moisture and aquifers? He was again unable to resolve the paradox.

But Mr Foord does not stop at buried minerals and objects. He claims to have successfully located ships at sea and missing people using his remote divining technique. It just happened that at this time the Victorian Government offered a prize of \$250,000 to any person or team that could find the legendary Mahogany Ship, supposedly buried in sandhills near Warrnambool.

The vessel was sighted many times between 1850 and 1890, after which it was buried under drifting sand. Some historians believe it to be a Portuguese caravel, wrecked during an exploration of the coastline in the late 1500s. There seems little doubt that some sort of wreck did exist, and the theory linking it to the Portuguese is at least credible. The full theory is outlined in Kenneth McIntyre's 'The Secret Discovery of Australia'. If the vessel can be found it has the potential to rewrite the history of Australia's discovery - hence the interest in recent years.

I asked Mr Foord if he would be able to locate the vessel using his pendulum. To my surprise he said he already knew where it was. Yes, he was aware of the prize being offered, but his state of fitness didn't allow traipsing about the sandhills. No, he wasn't interested in guiding anyone else to the site. Neither was he interested in supplying a set of coordinates to the search committee for excavation by their team. A strange reaction indeed!

We had to part without Mr Foord agreeing to a test. His coup de grace was that the presence of sceptical minds was sufficient to interfere with the divining process.

He did phone me the next day promising to set up a test independent of the Skeptics and overseen by scientists from the Warrnambool Campus of Deakin University. He would allow me to be an observer. He also invited me to put my viewpoint at a talk he would be giving to a local Rotary Club. I waited. And I waited. After several weeks curiosity got the better of me, so I made a few inquiries. I could find no-one at the university who had heard of him, and the Rotary club told me Mr Foord had got cold feet and pulled out of giving his talk.

My letter to the newspaper also attracted the attention of a Geelong diviner, Alan Fulton. Mr Fulton was on the money trail. He rang me wanting to know where to contact the Skeptics in order to set up a test. He was also about to stake his claim on a patch of sandhills where he had dowsed the Mahogany Ship some years ago. At the

time he had been refused a permit to excavate, but now he was to finally get his chance. I had been aware of Mr Fulton's escapades for some years, particularly in relation to several fruitless and costly searches for Benito's treasure, a supposed stash of pirate booty hidden on the shores of Port Phillip Bay.

Mr Fulton did contact the Skeptics and passed on to me a letter from Victorian Branch secretary Chris Jones, informing him that a test was being arranged for a number of interested diviners.

Mr Fulton's methods were more conventional than Mr Foord's, but he nevertheless made some extraordinary claims. He said that when driving to Warrnambool to dowse for the Mahogany Ship he got a strong reading at Terang, 60 kilometres from the site. As he drove along the highway his wire swung gradually seaward until, at Gorman's Lane, it pointed directly into the sand dunes. It just happens that Gorman's Lane is the one common reference in many of the documented sightings.

Mr Fulton was unfazed by the suggestion that this prior knowledge had any influence on the antics of his wire. He offered to take me out to the site to watch him in action and I happily accepted. I waited at home on the arranged day but he never turned up. The thought went through my mind that maybe he couldn't find my house, but I quickly dismissed the idea. After all, this man had located a buried ship from 60 kilometres away!

I rang his home the next day and his wife told me he had been taken seriously ill and had been unable to make the trip. Mr Fulton died a couple of days later. His brother went ahead with drill testing at the site but found nothing.

But the story doesn't end there. Next on the list of searchers was a Bob Sheen from Queensland. This fellow was a no nonsense sort of diviner, the sort who walks around with a bit of bent wire. Mr Sheen soon found his target and it was not in some inaccessible part of the dunes. The ship, he claimed, was beneath a carpark used for beach access. He said it was 52 feet below the surface, which, strangely, placed it about 45 feet below sea level. The fact that all recorded sightings placed it well above high water didn't seem to worry him. Mr Sheen was able to tell the length and breadth of the vessel as well as pinpoint a large metal object, the location of which indicated that it was probably the galley stove. The wires also told him there was gold on board. Obviously those who observed the wreck last century hadn't examined it very thoroughly!

Conditions of the search restrict exploratory drilling to hand augers, due to the sensitive nature of the sand dune environment. Searchers are required to submit their findings or test data to the search committee, which will undertake full scale excavation of the most likely sites after a twelve month search period.

Because Mr Sheen's site was not in the sensitive sand

dunes, he was given special permission to carry out full scale drilling. He hired a drilling rig for several days and finally came up with some fragments of wood which he sent off for testing. It turned out to be 70 to 80-year-old eucalypt. The drills never encountered the large metal object or any gold.

Undaunted, Mr Sheen returned a couple of months later for another try. His wires were soon wobbling once again, and this time he was sure it was the Mahogany Ship. This confidence came from the fact that he had held a piece of mahogany while divining to help him identify his target more accurately. By the most astonishing coincidence this site was also in the middle of a carpark, some six or seven kilometres from his first site. So again he was able to carry out full scale drilling.

After several days his drill had brought up a few scraps of wood which he sent off for identification. The laboratory was unable to do anything with the tiny sample and asked for a bigger piece. A larger drill was brought into action and a more substantial sample was unearthed. It was identified as indigenous wood, definitely not mahogany.

It has to be said that Mr Sheen is a trier. After an absence of a few weeks he was back at the same site conducting his third search, undaunted by the fact that he had already spent \$20,000 on the project.

Once again he drilled, and once again he brought up pieces of wood - hardly surprising considering the thick coastal vegetation in the vicinity.

Eventually, after several weeks of drilling, the search committee told Mr Sheen to go home. His search permit was revoked on the basis that: "Bob Sheen has not provided us with suitable information and proof that would warrant an excavation. He has provided us with lots of samples but none have looked anything like a shipwreck."

Mr Sheen was down, but not out. Departing he was, but he was going in style. During his last days at the site he released details of a finding that will soon have the mining companies falling over each other in the rush to south-west Victoria. The district, he claims, is sitting on top of a vast gold field of inestimable value. He has marked out three areas, all of which are volcanic and covered by deep basalt flows. The gold, he says, is under the basalt, 240 metres below the surface.

"It goes for 100 miles," he told the local newspaper shortly before his enforced departure. "I would not be tying up my time in it if I was not confident of what was there," he said.

As "evidence" for his claim, Mr Sheen said tests on basalt samples from the three areas had shown traces of gold, copper, aluminium and diamonds. Just how the surface rocks of geologically young basalt deposits could contain traces of gold from a reef deep in the bedrock

was a technicality he apparently regarded as irrelevant.

He has applied for an exploration licence and hopes to finalise "a deal with several companies to start drilling for the gold". He estimates the project will cost \$3 million to get started.

Despite getting the bum's rush, Mr Sheen talked the search committee into giving him another go on the basis of some wood samples which had been identified as coming from a coniferous tree. This, he said, proved that the wood came from another country, conveniently ignoring the many species of native pine that could have grown in the area.

He was given permission to drill a hole of four feet diameter in the hope of bringing up something more substantial. But Mr Sheen seemed to have finally run out of steam. He came back for a few more days drilling but produced nothing more than excuses.

The time between Mr Sheen's first two visits was kept lively by the arrival of another Queenslander, Ray Soutter. He, too, employed an unusual method. Instead of tramping the dunes, Mr Soutter used a helicopter. During a day's aerial divining he claimed to have located five wrecks. His findings have been forwarded to the search committee, which will decide if any are worth excavating, based on the evidence submitted. Bob Sheen faded from the limelight just as Victorian diviner Peter D'Aloisio stepped into it. Mr D'Aloisio hit town with the claim that he had won the world divining championships in Adelaide and would soon have the Mahogany Ship mystery solved.

He wasted no time in coming up with yet another location, having identified a "large vee-shaped metal object, possibly an anchor". Days of drilling went by, each ending with an excuse but no evidence.

At the time of writing Mr D'Aloisio is still scratching around in the sandhills and two others diviners, Alan Dennis from South Australia and Joe Doppler from Queensland have been given permission to search.

But time is running out as the twelve months search period is almost over.

Not all those attracted by the \$250,000 prize were perpetrators of paranormal piffle. A team from New England University carried out a search using magnetometers and located what they believed to be the site. It tallies closely with the historical record.

The CSIRO followed up with a search using ground penetrating radar. They found something promising in the same spot as the New England team. Their evidence, along with that from the various diviners, will be assessed when the search period expires, and the search committee will then decide which are worth excavating.

It will be interesting to see which sites the committee considers worth excavating. I have a feeling that, for once, scepticism may rule. ■

PREDICTING THE FUTURE (I)

Prophets of Doom

Harry Edwards

It is said that there are only two things certain in this world - death and taxes. I would suggest that there are three - the third being certain failure for those trying to predict the future. The second coming predicted by the Mission for the Coming Days for 1 am October 29, 1992, was the latest in a long long list of let downs for those inclined to believe in man's ability to make prophecy. It wasn't the first and it won't be the last, particularly as this century comes to a close. Let's take a brief look down through the centuries at some of the unfulfilled prophecies.

The prophets of doom

"...the Lord of Hosts will appear in his glory on the Mount of Olives, the mountain that rises high above Jerusalem, to war against the nations and to mete out retribution to them. At this awe-inspiring theophany, the whole mountain will shake and be cloven asunder, as the earth was convulsed in the great earthquake that occurred in the reign of Uzziak."

Book of John

Apocalyptic forecasts span written history from pre-biblical times to the present day, and as I chronologued the dismal litany, I found it difficult to comprehend what motivates people to make them, particularly as there would be no one left thereafter to give an accolade for the successful prophet.

The oldest apocalyptic ideas date back to Babylonian times; in the Bible alone theologians have found more than 300 references to the coming of the Messiah, the anti-Christ and the end of the world.

About 90 CE, St John the Divine wrote explicitly about a book closed with seven seals, the breaking of each revealing certain aspects of the apocalypse. The first four being the horsemen of the apocalypse representing the evils of war, conquest, famine and death. The fifth, the slaughtered Martyrs; violent earthquakes on the breaking of the sixth; the seventh heralding the appearance of seven angels with trumpets, the sounding of each trumpet bringing forth more disasters; hail, fire, blood, pestilence

and pollution, during which one third of the world's population will perish. With the exception of trumpet blowing angels (unless we include an all-girls band), all these disasters have in one form or another beset the world since the New Testament was codified, but like Ole Man River, the world keeps rolling along.

In seeking why there is a conviction that the world will come to a sticky end one needs look no further than the Kingdom of Judea 600 years before the birth of Christ, when the Jews believed God to be the divine judge, rewarding and punishing as deserved.

After the crushing of Judea by the Chaldeans, the exiled Jews in Babylonia idealised the return of the kingdom and a king as the rewards of virtue in the future, referring to the coming of the Messiah, or anointed one. A description of the coming of God's retribution and reward is given in the *Book of Isaiah* in which the oft quoted messianic prophecies are to be found.

The Jewish prophets became more graphic on their return from exile, and the notion of Judgment Day became more and more extreme in the second century BCE.

Under the Romans during the occupation of Judea, there were a number of claimants to being the Messiah, among them Jesus of Nazareth, their followers being called Messianics. The promise of a kingdom of heaven was preached by John the Baptist, and as more and more Gentiles were converted the Greek word for Messiah (*Christos*) was substituted and the followers became known as Christians.

With the preachings of the Apostle Paul came the rapid conversion of Rome, Europe, and finally much of the world to Christianity, and the accompanying persecution by the Roman Emperors Nero and Domitian, fuelling the apocalyptic promises (in particular the punishment of enemies) of the Old Testament Book of Daniel then revived in the *Book of Revelation*.

The urge to believe in something or someone, encourages re-interpretation of the vague predictions leading to further speculations of the Day of Judgment and the Second Coming. One very popular formula involves the figure of one thousand years. In the *Book of*

Revelation we read:

“And I saw an angel come down from heaven, having the key of the bottomless pit and a great chain in his hand. And he laid hold of the dragon, that old serpent, which is the Devil, and Satan, and bound him a thousand years. And cast him into the bottomless pit, and shut him up, and set a seal upon him, that he should deceive the nations no more, till a thousand years should be fulfilled: and after that he must be loosed a little season.”

Rev. 20: 1-3

Given that the ancients used arbitrary figures for dating, ages and time spans generally, the only significance I can see in the figure is its four figure simplicity. However, others spend years trying to calculate and read into it the date of the Armageddon. Many religious movements the followers of which are known as “millennialists” later known as Second Adventists and Jehovah’s Witnesses are examples.

Astrologers and Pyramidologists

John of Toledo, a 12th century astrologer, correctly forecast the conjunction of all the planets under the sign of Libra for September 1186. Interpreting this to mean terrible storms and earthquakes, panic spread throughout Europe and the Middle East, but the catastrophe failed to materialise.

The end of the world beginning with a deluge on London on February 1, 1524 was the consensus of a group of astrologers in 1523. Twenty thousand inhabitants deserted the city and ... nothing happened. The astrologers had miscalculated, the end of the world was not due until 1624!

Johannes Stoffler, a German astrologer and mathematician made two attempts, one for February 20, 1524, preceded by a giant flood, and when that failed to materialise, again for 1528. Coincidentally, there was heavy rain on February 20, and in the ensuing panic hundreds of people lost their lives fleeing for higher ground. Stoffler’s second forecast was ignored by those who had learned their lesson.

Using the measurements of the Great Pyramid of Cheops, pyramidologists have forecast the second coming for 1881, 1936, and 1953, but not the end of the world, for in 2001 a new age will dawn better than anything we have known. John Stone, a Melbourne businessman predicted in his book, “The Doomsday City” (1973) a Russian nuclear attack on that city. Together with 70 followers they constructed a “doomsday city” to wait out the holocaust. The date of

the forthcoming disaster was based on parts of the Bible and his own calculations of the size of the pyramids and was set for October 2, 15, or 31, 1978. Then just in case, September 23, 1979.

Layland Jensen and Charles Gaines stocked their fall-out shelters in the Rocky Mountains in preparation for World War III scheduled for 5.55 pm on April 29, 1980. When it failed to materialise their revised calculations postponed it to May 7. Oh well, back to the computer.

Another who foresaw a nuclear explosion disintegrating the world at 12.15 pm 1962 was Wilma Bianco. To escape the coming catastrophe her brother and 40 followers started to build an ark 7000' up Mont Blanc. It is not stated whether the ark was supposed to float in space following the disappearance of planet Earth, however, the non-event was shrugged off with the remark, “anyone can make a mistake!”

Nostradamus, in one of his quatrains, agrees with the pyramidologists, forecasting the long awaited Armageddon - plague, fire, famine and death by the military hand for July 1999 in *Century X. , Quatrain 72:*

“In the year 1999, and seven months, from the sky will come the great King of Terror. He will bring back to life the great king of the Mongols, before and after the war reigns happily.”

However, this chronological preciseness is contradicted in *Century VI, Quatrain 24 :*

“Mars and the sceptre will be in conjunction, a calamitous war under Cancer. A short time afterwards a new king will be anointed who will bring peace to the earth for a long time.”

The only time such a conjunction will occur is on June 21, 2002. Nostradamus believed in hedging his bets - he also prophesied the end of the world when Easter falls on April 25. This has already occurred in 1666, 1734, 1886, 1943 and will again in 2038.

Divine revelation

The English Divine, William Whiston announced the beginning of the end for October 13, 1736, but most of the population was still around 25 years later, when immediately following an earthquake, a William Bell predicted the end of the world for April 5. Mass hysteria followed and when nothing happened Bell was incarcerated in Bethlehem Hospital (Bedlam), London’s infamous mental asylum.

There is no doubt in my mind that to have faith one must also have infinite patience. William Miller, the palsied and stammering leader of the Second Adventists (now the Seventh Day Adventists) heard the voice of

God urging him to tell the world of the second coming and the end of the world to occur between March 21, 1843 and March 21, 1844. (Seems rather odd to me that God could not be a little more specific, ah well, “mysterious ways” you know!). Thousands believed Miller particularly when a magnificent meteor shower reminded them of the prophecy in *Revelation*, that after “the stars fell unto earth” the heaven would open up. The prophecy was given wide publicity and impetus in the newspapers *Signs of the Times* and *The Midnight Cry*. As the last day approached thousands gathered on the hilltops only to go home next morning disappointed. Undeterred, Miller postponed the coming to October 22, 1844. Hysteria grew, murder, suicide and panic prevailed, but once again the Messiah had a prior engagement. Evidently tired of waiting, Miller made his own way heavenward to meet his maker in 1849. Succeeded by Charles Russell who founded the Jehovahs Witnesses, further predictions were made with equal success. The movement flourished however under Joseph Rutherford, best known for his slogan “Millions now living shall never die.” A statement I’m sure millions long gone would hotly dispute if they could and one worthy to be alongside “no child will live in poverty by 1990”.

If by now you are wearing a wry smile and thinking how gullible they were in the old days to be taken in by such nonsense, I assure you nothing has changed. In 1925 the Archangel Gabriel whispered in the ear of one Margaret Brown of Los Angeles that the world would end at midnight on Friday the 13th. A frustratingly vague prediction I might add, as Friday the 13th fell in the months of February, March and November that year. This didn’t deter Robert Reidt of Long Island however and he advertised for people to join him on high ground to await the sound of heavenly trumpets. When the bugles failed to sound, he blamed the newspaper reporters for scaring off the archangel with their flashbulbs. He tried again in 1932 after studying the *Book of Revelation* but after the second non-event went back to house painting.

House painting somehow seems synonymous with psychics. Gerard Croiset the psychic detective was a house painter, and it was a house painter by the name of John Nash who predicted a tidal wave which would destroy the city of Adelaide on January 19, 1976. A carnival atmosphere prevailed when Don Dunstan the then Premier of South Australia joined with three thousand sightseers at the Glenelg jetty for the predicted event. Hotels did a roaring trade from those who would slake their thirst before the worst, and a couple of spoilsports called on Mr Dunstan to repent. Many who took

the prediction seriously sold up their homes, and threats were made on the life of the prophet regardless of whether he proved to be right or wrong. After the non-event Mr Nash discreetly moved to Melbourne where, in an interview, he stood by his prediction saying that he would not return to Adelaide because there would be no Adelaide to return to. Obviously a man of conviction!

As floods and earthquakes figure monotonously in doomsday forecasts it is refreshing to hear something different. The Reverend Charles Long of Pasadena predicted a graphic end for us all at 5.33 pm on September 21, 1945. He said the world would be vaporised and its inhabitants turned into ectoplasm. The revelation came to him in 1938 when a ghostly hand wrote on a blackboard at the foot of his bed and a voice whispered in his ear. During the years which ensued he wrote a 70,000 word tract on the coming destruction (based I assume solely on a time and a date) which he posted to the world’s leaders. While vaporisation was not to be civilisation’s lot, an awful lot of converts were baptised by the Reverend and his son in their rented auditorium in Pasadena. I’ve yet to figure out what a blackboard was doing at the foot of the Reverend’s bed!

Back on the farm

Meanwhile back on the farm in Australia, the Theosophists were hard at work at Balmoral Beach, a harbourside suburb of Sydney, preparing for yet another second coming. Land had been purchased on which to build an amphitheatre, the purpose of which was subject to rumour and speculation. Fuel was added to the flames with the arrival of Miss Enid Lorimer, a London actress who said that the building would be utilised for a new type of outdoor pageant until needed for its “great purpose”. On July 24, 1924, an exotic ceremony was performed on the site by Charles Leadbeater, a prominent Anglo-Australian Theosophist, and prime mover in the enterprise. One year later the vision was manifest, an extensive three storied building structure towered over the beach, its 70 foot open stage above. By October 1924 the building was operational, Miss Lorimer’s Amphitheatre players performing, appropriately, Henry van Dyke’s “The Other Wise Man”.

The auditorium could accommodate 3000 people and seats could be purchased for one hundred pounds in the front row, ten pounds in the back five, or could be leased for twenty-five years. For one pound, one could have the names of those “passed on” placed on a wall a Roll of Honour.

The purpose of the amphitheatre was no longer hidden,

the Order of the Star had as its sole purpose the preparation of the way for the expected world teacher (Messiah). The principal declaration being, “we believe that a Great Teacher will soon appear in the world, and we wish so to live that we may be worthy to know him when he comes”. No enterprise expressed so well the apocalyptic zeal of those who attempted to seize the hour and the failure of the coming was a severe blow to them all, including Walter Marks, a politician who astonished parliament in the early twenties when he prophesied the Second Coming through Sydney Heads in 1934!

The amphitheatre was sold in 1931, the last vestige of the structure disappearing under the demolisher’s hammer in 1951.

Psychics and clairvoyants

Occult visions and voices seemingly know no frontiers or language barriers and the track record for those allegedly possessing extraordinary faculties is no better than the millennialists. Edgar Cayce, seer and faith healer, goes for the end of civilisation in 2000 AD, but expects to be re-incarnated in Nebraska a century later. Among his failed predictions are the re-emergence of the mythical continent of Atlantis in 1968-69, and large parts of California, Florida, Japan and Europe disappearing into the ocean following gigantic earthquakes. Jeane Dixon, the American seeress whose prolific output is unequalled anywhere in the world, even allowing her vague and all encompassing predictions, has a success rate of one per cent, and that usually post-event.

The chaos and mayhem following apocalyptic predictions has in some cases already been enumerated, to them we can add, Munoy Ferradas, a Chilean astronomer who panicked thousands into selling their homes, turning to drink, committing murder and suicide when he predicted the end of all life on earth following a collision with a comet in August 1944. Seventeen members of the True Light Church of Christ resigned their jobs which they thought they would no longer need after 1970, when, so the Church said, the world would end. Despite their premature retirement, the members still cling to the other doctrines of that church.

Readers may be tempted to say that the law of probability will ensure that eventually one of the prophets will get it right, but not through the medium of a vision, alien voices, astrology or pyramidology; the end of the world can be predicted (give or take a few million years) by practical and reliable scientific methods.

Part II of this article will appear in the next issue.

REVIEW

Anti-Evolution

Barry Williams

Anti-Evolution: A Reader’s Guide to Writings before and after Darwin

Tom McIver, Johns Hopkins University Press.

This is an annotated bibliography of the writings of the many groups and individuals who, for various reasons, oppose the idea that life as we know it is the result of evolution. It covers 1852 books, tracts and pamphlets on the subject, with an objective commentary by the author on each of them. Occasionally, McIver, an anthropologist and research fellow at the (US) National Endowment for the Humanities, cannot restrain himself and some of his comments show a sardonic sense of humour, no doubt as a reaction to having to wade through the turgid depths of so much of the writing.

In not confining himself to the peculiarities of the ‘new-earth, Noah’s flood’ creationist stream of anti-evolutionary propaganda familiar to most Skeptics, McIver shows just how widespread and disparate, though essentially anti-intellectual, is opposition to Darwin’s theory. Christian ‘Old-Earth’ and ‘Gap Theory’ creationist ideas are covered, as are writings from totally different religious perspectives, together with various occult and ‘ancient astronaut’ propositions.

Nor are the subjects confined to those of American origin, with Australia being represented by Setterfield, Snelling, Ham and MacKay, among others. “Mein Kampf” rates a mention for its pseudo-historical Aryan mythology, as do the Theosophist writings of Blavatsky and others.

Some of the books covered are from the early to mid 19th century, when the theory of evolution was not generally accepted and was still the subject of serious intellectual debate, but by far the bulk are more recent works published since the 1950s, which presumably shows that an increase in wisdom does not necessarily follow from an increase in knowledge.

Because of its breadth and scope, Anti-Evolution is an invaluable resource for anyone, particularly educators, who have to confront the insidious spread of the anti-intellectual dogma of the creationist movement. It is highly recommended. ■

CRICKET

Superstition Hit for Six

Barry Williams

Cricket, as generations of commentators from the SCG to Sabina Park, from Lords to Lahore, have never tired of iterating, is a funny game. And I have no doubt that even in Holland, the only country to have a 100% success rate against Australia, some Netherlandish Bjil Lawrij has more than once delivered himself of the observation, “Crijkit is a fjuni gejm”. Our many readers who have nominated the game of the flannelled fools as one of their interests, will probably agree.

Cricket is a game that has inspired more prose and poetry than any mere sport; cricket doesn't have rules, it has Laws; cricket offers more statistics than a politician at election time. And it is in cricket's statistics and folklore that the dedicated devotee can find hours of innocent enjoyment.

For instance, in what other field of esoteric knowledge could one glean the intelligence that a team of English professional cricketers who visited the United States in 1857, under the managership of a certain Fred Lillywhite, contained one Julius Caesar of Surrey. *Julius Caesar*? He must have been getting on a bit - or was this proof of reincarnation? And what of CB Fry, who, around the turn of the century, held the world long jump record, played soccer for England, played in 26 test matches for England and is alleged to have been offered the throne of Albania. How many tennis players could match that?

Delving further, one comes across the remarkable record of one JEBBPQC Dwyer, who played 60 matches for Sussex in the years 1906-9 and who twice took 9 wickets in an innings. An extreme example of the English parental eccentricity of giving more than two initials to future cricketers (PHB May, JWHT Douglas, DCS Compton et al) perhaps? Well, not really. John Elicius Benedict Bernard Placid Quirk Carrington Dwyer, the grandson of an Irish convict, was born in *Sydney* in 1876. Placid? Wow!

Cricket consists of a series of ‘Golden Ages’, which have nothing to do with the ‘New Age’, but refer to the cricket played when the cricketophile was 10. Who could forget the unbeaten ‘Immortal’ Australian 1948 touring side? Where others tried to remember the Seven Dwarfs to win a bar-room bet, the pre-war baby could rattle off Bradman, Hassett, Barnes, Morris, Harvey, Brown,

Miller, Lindwall, Tallon, Johnson, Johnston, Loxton, Toshack, McCool, Saggars, Ring and Hammence, without looking at a book (and still can!).

Bradman! Every devout cricket lover knows Sir Donald Bradman's test batting record as well as the Christian knows the Apostle's Creed. (52 tests; 80 innings; 10 not outs; 334 highest score; 6,996 runs; 99.94 average; 29 centuries.) And the lore. Needing only 4 in his last test to finish with an average of 100, he was bowled second ball by a googly from Eric Hollies for 0. His average is more than 50% higher than the next best. He scored a century or better every third innings. He still shares several test wicket partnership records, including the highest of all, 451 with Bill Ponsford for the second wicket, against England in 1934 (59 years ago). But only the truly devout could tell you The Don's test *bowling* record (160 balls; 3 maidens; 72 runs; 2 wickets; 36.00 average.) And who were these two victims (a guaranteed free beer in any bar for knowing this)? George Nathaniel Francis (West Indies) lbw Bradman 27, 1st Test, Adelaide, 1930 and the great Walter Hammond (England) bowled Bradman 85, 3rd Test, Adelaide, 1933 during the infamous ‘Bodyline’ series. There must have been something in the Adelaide wicket that suited The Don's bowling.

Now hang on a bit, I hear the gentle reader cry, just because he is the editor, how can he justify inflicting this harangue about cricket on us? After all, this is a journal dedicated to exploring the mysteries of the paranormal and pseudoscience, not the arcane lore of leather and willow. There is nothing paranormal about cricket unless, as an American is once alleged to have said while watching a test match, it is proof of eternity.

Well, let me tell you, there is a relevant point to all this and I have just been setting the scene. And, as everybody knows, if there is anything you can accuse a cricket buff of, it certainly isn't reticence.

What brought me to this happy state was hearing, during the recent West Indies series, one of the ABC cricket commentators discussing the notoriously ‘unlucky’ score for Australian test batsmen of 87. Some 20 years ago, pre-Skeptics and pre-computers, I had sought to discover the truth of this superstition, whether

in fact Australian batsmen had a tendency to be dismissed more frequently on 87 than on other scores in the 80s. Since then, I have lost my data, but I can vaguely remember that there was no particular concentration of dismissals on that score.

Readers will appreciate that it was no simple matter to research every score made by every Australian batsman in the 520 test matches they have played in, from the first in 1877 until the lamented last test of the recent West Indies series. First to my local library to search Wisden's Book of Test Cricket, which lists all test matches between all countries. But where to begin? Clearly it would take at least as long as the famous 'Timeless Test', (England v South Africa, Durban, 1939. This match was abandoned, and declared a draw, on the *tenth* day of play because the England team had to board their ship home.), to list every score, so I decided to concentrate only on those between 70-100. Additionally, I sought the times when a wicket fell when the team score stood at 87.

This research enlivened my lunch hours for more than a week, but was inconclusive because the Wisden in my library listed tests up to 1985 only. Where next? A call to the NSW Cricket Association to seek access to more current books, elicited the information that the Association's librarian, Ross Dundas, should be able to help with my quest. Mr Dundas' name was not unfamiliar, as I had seen his imprint on a number of books of cricket statistics, so I called him. Not only did he have statistics on all the tests up to and including the latest, but he actually had a computer listing of the number of batsmen who had made every score that had been made from 0 to 334 (Don Bradman, A v E, Leeds, 1930). Would he make his list available to me? Of course he would; when cricket nut talks to cricket nut, nothing is too much trouble.

What was the result, I hear you cry? Patience, dear reader, patience - triple centuries are not made in a day (well, not often at any rate - Don Bradman at Leeds, 1930, made 309 in one day, the only time this has been done in test cricket). While searching the figures for my primary objective, I came across some other intriguing statistics, which I am sure will interest my fellow cricketophiles among the readership. Some of these should certainly be useful for baffling the fellow next to you in the pub. The lowest score at which *no* Australian has ever been dismissed is 139, although one batsman has been left on 139 not out. The lowest score that has *never* appeared in the scorebook beside a batsman's name is 148, while no batsman has ever been out for 150,

though three have been left not out on that score. Between this score and 200, eight scores have never been made, 174, 175, 180, 186, 194, 195, 197 and 199. I could have gone on for ever, teasing Mr Dundas' figures for the odd result, but still no nearer discovering why 87 had attracted all the attention.

I had some figures to work with, but I had not come any closer to finding why Australian commentators (and presumably players) thought this particular score was unlucky. Some suggested that it was because the score was 13 short of a century, but then 13 should be a particularly unlucky score and, thanks to Ross Dundas' figures, I could see that 151 batsmen had been dismissed for 13, while 159 had made 12 and 158 had reached 14. The most unlucky score of all, of course, is 0, the dreaded 'duck' - 947 players have scored this non-score, 11.75% of all Australian test innings.

It was at about this time that there occurred one of those coincidences that makes even the most hardened sceptic think that there must be some underlying purpose to the universe after all. In the February 6 issue of the *Sydney Morning Herald*, *Good Weekend* magazine, well known sporting journalist and author, Philip Derriman, had written an article about Harry "Bull" Alexander, a Victorian fast bowler and now Australia's oldest surviving test cricketer*. Alexander played in only one test match, the last of the 1932-33 Bodyline Series, and is remembered for hitting England captain Douglas Jardine (as popular in Australia then as Saddam Hussein is in the USA now) several times during the match. In the course of the article, Mr Derriman referred to Alexander's career as a Victorian Sheffield Shield bowler and how he dismissed the then young Don Bradman in a match in Melbourne in 1929. Watching the match was a ten year-old boy called Keith Miller and, according to the article, this dismissal was the genesis of the superstition about 87. As Miller grew up and began to play cricket, the Bradman 87 stayed in his mind and he noticed how many other club or state players with whom he played seemed to go out at the same score.

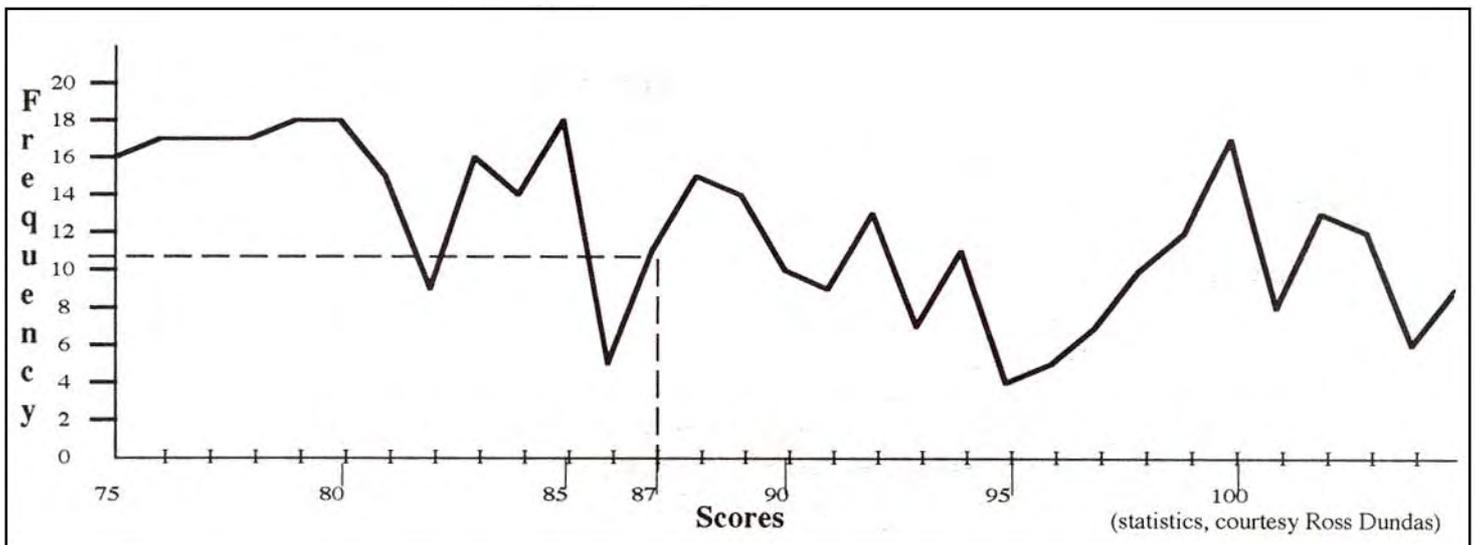
Intrigued, I contacted Philip Derriman and mentioned my interest in this superstition. He suggested that I call Keith Miller and ask him about it. Now if Don Bradman is a deified figure to cricketophiles of a certain age, then Keith Miller is at least a demi-god. A natural cricketer, outstanding with both bat and ball, Keith Miller is probably the greatest all rounder in Australia's cricket history. Faced with the choice of two cricketers to play for my life, I would unhesitatingly select Keith Miller and Sir Garfield Sobers of the West Indies. When I was

ten years-old, I didn't want to grow up to be like Keith Miller, I wanted to grow up to *be* Keith Miller (regrettably my talent did not match my enthusiasm - my batting was in the Bruce Reid mould and my bowling resembled David Boon's). Now, more than 40 years later, I was about to speak to the man himself.

It was obvious that the decades since Keith had played test cricket had not diminished his interest in the Great Game. He was very willing to discuss his career and answered a couple of questions I have wanted to ask him for many years. Yes it was true, as I had read in some book, that he had whiled away his time in the field whistling Beethoven symphonies and yes, he had, as a WWII RAF Mosquito pilot, diverted one of his return

when Keith was discussing his part in the history of the superstition with Philip Derriman. He referred to his 1929 watching of the dismissal of Don Bradman by Bull Alexander and, trying to ensure he had all the facts right, he looked up the scores for the match. There it was, in black and white. Bradman, bowled Alexander **89**. Keith believes that Bradman had been on 87 when he last looked at the scoreboard and this number had stayed in his mind throughout the intervening time.

For those who are interested in such matters, I have included a box which shows the numbers of batsmen who have been dismissed on all the scores between 71 and 100. This shows that only 10 Australian test batsmen have achieved this score (yes, I know the box shows 11,



flights via the German city of Bonn, so he could see where Beethoven was born.

Having cleared up those vital cricketing points, I asked Keith about his role in the 87 affair. Yes he had watched Don Bradman bowled for 87 in a Sheffield Shield match and he had retained that memory when he later began to play club, state and test cricket and he had noticed that this number seemed to occur more often than chance would dictate. He also said that he attributed this to nothing more than an interesting quirk and was surprised to hear, sometime during the 1970s, ABC commentator and former Australian batsman Paul Sheahan, discussing why the score of 87 was considered to be the Devil's Number. He attributed to Sheahan the suggestion that it was because it was 13 short of a hundred. However, as the figures below will show, Keith Miller was suffering from a delusion that is very familiar to all Skeptics. If you expect to see some pattern in anything, then you will see it and will ignore those events that don't conform. But an even more astonishing fact arose in recent years

but someone did it twice). Much more common scores in the vicinity are 85 (18), 83 (16), 88 (15), 89 (14), 92 (13), and 100 (17). Curiously, 17 players have also scored 112, when most of the scores around that figure have been achieved by only 6 or 7 players. Incidentally, I also checked on how many wickets had fallen in an Australian innings when the team score stood at 87. The total was 18, the lowest number for any score between 80-100. The highest number, 34, was when the score stood at 97.

Thanking Keith for his time and information, I asked for his address so I could send him a copy of the article and was astonished by yet another amazing coincidence. He lives but a few doors away from Australian Skeptics secretary, Harry Edwards (it would be nice to be able to report that he lives 87 doors away, but it isn't true).

But a good cricket story is not put to rest until we have milked every fact from it. So let me tell you who were the Australian batsmen who fell at the Devil's Number.

The very first was George Bonnor who was dismissed for 87 in the Sydney test against England in 1883. It was Bonnor's second highest score in 17 tests, so could hardly be considered unlucky. Australia won the test by 4 wickets.

The second was Sammy Jones in the Manchester test against England in 1886. Jones, who lived to be 90, was the last survivor of the "Ashes" test of 1882. In 12 tests, 87 was Jones' highest test score. In this innings he was bowled by none other than Dr WG Grace. England won by 4 wickets.

In 1902, Clem Hill achieved the score against England in the Melbourne test, which Australia won by 32 runs and he did it again in the Sydney test of 1907, which Australia won by 2 wickets. Clem Hill played 49 tests for Australia, including 10 as captain. In the 1902 series, he achieved scores of 99, 98 and 97 in successive innings. While captain, he indulged in a bout of fisticuffs with a fellow selector and retired from test cricket shortly thereafter.

The immortal Victor Trumper, was next to achieve the score, in the 1910 Melbourne test against South Africa. Australia won the match by 86 runs. Trumper, probably Australia's second most revered cricketer, played in 48 tests and died of Bright's Disease at the tragically young age of 37.

Next in line was Jack Ryder who made 87 against England in Adelaide in 1929. He played 20 tests for Australia, five as captain and was a long serving selector in the post WWII years. England won this test by 12 runs.

Twenty years were to pass before the score was achieved again, by Jack Moroney in a test against South Africa in Capetown, which Australia won by 8 wickets. Moroney made a century in each innings of the Johannesburg test in this series and made a duck in each innings of the first test of the next season against England in Brisbane. This may be the only time a batsman has achieved this double double distinction. He played in seven tests for Australia.

Brian Booth was the next to make 87, in the drawn Sydney test against South Africa in 1963. Booth, a classy batsman, also played hockey for Australia in the Melbourne Olympics. He played 29 tests, two as captain.

The next to achieve the score, and perhaps part of the continuing mythology, was ABC commentator Keith Stackpole, against England in the drawn Adelaide test of 1972. An aggressive right handed opening bat, Keith Stackpole played in 43 tests.

John Dyson made his 87 against Pakistan at Karachi

in 1982, a match Pakistan won by 9 wickets. Dyson played 29 tests for Australia and took one of the finest catches I have ever seen on an Australian ground, which various commentators ascribed to the fact that he was also a soccer goal keeper.

Recently retired spinner Peter Taylor was the last player to date to make 87, in the 1990 Wellington test against New Zealand. It was Taylor's highest test score in test cricket.

But we could not allow this to conclude without reference to the only Australian player to have achieved 87 not out. This was none other than that renowned pigeon fancier and Channel 9 commentator, William Morris Lawry, in the 1963 drawn Brisbane test against South Africa. Bill Lawry played 68 tests for Australia, 27 as captain.

It is interesting to note that current Australian captain and world record test run scorer, Alan Border, has never, in 139 test matches and 10,000 plus runs, been dismissed for 87 in a test match. No one has ever scored 87 against the West Indies, India or Sri Lanka. In fact, 87 appears to be score achieved by fewer batsmen than would be expected by chance and, as shown above, with three of the 11 scores either the highest or second highest score made by the player concerned, not a particularly unlucky one.

If one had to select an 'unlucky' score for Australian test players while within sight of a century, then 85, 88 or 99 would appear to fit the bill better. And what about the 'ton' itself. No less than 17 players have been dismissed on the score.

I may have taken a long and circuitous route to reach this conclusion, but that is the way we cricket cranks are. As a result, perhaps I have helped lay to rest one of the more curious and lasting superstitions that infects cricket and showed it to have little more substance than most other irrational beliefs. But I would not bet the mortgage on it, for, as that commentator nonpareil Ritchie Benaud has been heard to observe on more than one occasion, "cricket is a funny game".

* In a sadly ironic footnote, after this story was written but before it was published, Harold "Bull" Alexander, died on April 15, 1993. He was 87.

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HEALTH

Acupuncture: The Facts

Stephen Basser

Introduction

The practice of acupuncture is fairly widespread in Australia, and is used by both medically and non-medically trained persons. The technique is based on the belief that the human body is subject to disease when there are imbalances in the level of invisible life forces. Balance can be restored by using fine needles, or other means, to stimulate various points located over the body. The needles are usually inserted and twirled and may be left in for short periods. The points chosen for stimulation depend upon the patient's symptoms, the season, the weather, and the result of taking the pulse at the wrist.

Acupuncture is a therapy based on ancient Chinese philosophy and was described for the first time in 90 BC in the Shih-chi text. No known Chinese source prior to this time refers to the technique.¹

Modern authors (eg, Needham²) have expressed views on acupuncture that are not consistent with the descriptions in the ancient Chinese medical texts. This is clearly inappropriate. Any assessment of acupuncture should involve accessing these texts as the historical documents they are, and not merely reinterpreting them to suit some other purpose. When this is done it is clear that there is often little connection between the modern western form and understanding of acupuncture and the past.

Only by accurate reference to source material can those who are interested in acupuncture determine whether its concepts are applicable in a meaningful way to modern times. Objectivity is an important scientific principle and provides protection from the influence of pre-existing beliefs or ideas.³

History of Acupuncture

The earliest Chinese medical texts are those discovered at the Ma-wang-tui graves in 1973, dating from 168 BC.^{4,6} These provide a picture of Chinese medicine as it existed during the 3rd to 2nd century BC. Acupuncture is not mentioned in these texts, which record all modes of treatment in use at the time.¹

The Ma-wang-tui texts do describe eleven *mo* or vessels, which were believed to contain in addition to blood a life force known as *ch'i* or pneuma.⁶ There was

no distinction made between vessels on the basis of content and no information was provided on how the blood and *ch'i* circulated in the vessels, which did not make up a connected system.¹

By the end of the first century BC it was believed that there were twelve vessels, and that these were connected in a network. In addition a picture had developed of the *ch'i* flowing through vessels separate from blood.^{1,4,6}

The most important text of this time - the Huang-ti nei-ching - mentions twelve connected vessels with different courses to the eleven described earlier⁷. These were called "conduits" (*ching*) or "conduit vessels" (*ching-mo*). It also records a large number of holes which are located over the body on these vessels. Most modern writers refer to these vessels as meridians.^{8,9}

Ch'i

Disease was closely related to the vascular system and was, in earlier times, treated by causing bleeding from a vessel with sharp stones or needles⁶. Later the concept of a disease causing agent - the *hsieh* - was developed. It was believed that this could lodge in the vessels and interfere with the flow in them. The concept of *ch'i* came from the term *hsieh-chi*, or evil influences which in turn developed from an earlier time in Chinese history when the agents of illness were thought to be demons (*hsieh-kuei*).¹

The wind was originally regarded as a demon and therefore an agent of illness. Later it was regarded merely as a natural phenomenon, though it was still considered a warning of future events. As a spirit or demon the wind resided, it was believed, in caves or tunnels. The term for 'caves' is used in acupuncture literature to designate the holes in the skin through which the *ch'i* is able to flow into and out of the body - *hsueh*. It was believed that through the insertion of different kinds of needles into these holes the flow of *ch'i* could be increased or decreased to achieve a more normal state of health.

Ch'i was considered to float through the air, and flow with blood. The Chinese character used to represent *ch'i* is literally read as vapours rising from food¹.

Supporters of acupuncture like to use the word 'energy' in association with the term *ch'i*, but it is clear

that:

“the core concept of *ch'i* bears no resemblance to the western concept of energy (regardless of whether the latter is borrowed from the physical sciences or from colloquial use).”^{4(p5)}

Celestial influence

Over time the connection between needling and *ch'i*, which formed the basis of acupuncture, was described in the context of an emerging cosmological view of the world, not evident in the earlier descriptions of medical bleeding. Organic medicine was subsumed under this emerging system of cosmological correspondences.^{1,6}

For example, the types of needles used were grouped together as nine because of the cosmological significance of the number. When the system of openings or holes along the vessels was first described there were 365, not because this number had been anatomically identified, but because this corresponded to the days in one year. Early texts make no reference to the openings - they are just suddenly described, and there are 365 of them. The absence of any objective basis for the openings is shown by the fact that many texts describe a different total number of them.¹⁰

Contradictory elements

The vessels, and not the openings, were the central feature of ‘ancient’ acupuncture, whereas in modern practice the points appear to be of prime importance. The vessels have, over time, lost their association with the vascular system⁶ and in the west are now viewed primarily as functional pathways linking the openings. The use of the term ‘meridian’ rather than ‘vessel’ merely serves to aid in clouding the issue.

A further problem is an apparent contradiction in that the modern practice of acupuncture seems to be based on the pre and post-circulation concepts. That is, the vessels are needled as if they constitute separate units, whilst at the same time most practitioners of Traditional Chinese Medicine also rely on wrist pulse palpation, which makes sense only if the flow through the vessels is continuous.

If the flow was not continuous (i.e., the vessels not connected) then each vessel would need to be palpated for its own pulse. This is, in fact, what was originally described, and it seems that this basic contradiction has arisen from a partial acceptance and a partial rejection of history.⁴ It is unclear why this occurred and how it was decided what to retain and what to discard.

Yin, Yang and the Five Elements

Most people have heard of the terms yin and yang which describe concepts that form an important part of the history of Chinese medicine and acupuncture. An ill person was considered to be out of balance with nature and these two opposing forces. Originally the terms meant shady (*yin*) and sunny (*yang*) side of a hill¹.

The belief in these forces was based on the view that most of the natural world consisted of events that were cyclical, and therefore caused by the rise and fall of opposite, but complementary, forces. There was also an element of the ancient belief in a particular form of magic - that like corresponds to like. In other words, it was believed that hurting a picture of a person would result in real harm to the person, or eating food that looked like a particular body organ would be beneficial to that organ.

Another important natural philosophy in the history of Chinese medicine was the doctrine of the Five Phases or Elements (*wu-hsing*), which involved the categorising of natural phenomena, in particular water, fire, metal, wood, and soil into five separate lines of correspondence.¹¹ A sixth component, grain, is also described.

The initial application of these philosophies to medicine was characterised by a number of different schools with different theories, many of them contradicting each other (e.g. supporters of the Five Phases doctrine rejected the *yin/yang* concept).⁷ Even in the one book, virtually side by side, there could be guidelines based on mutually exclusive patterns of knowledge. With the passage of time a kind of reconciliation took place, but no formal standardisation of these conflicting views was attempted.

For example, do the terms *hsin* (heart), *kan* (liver) and *p'i* (spleen) refer to anatomical structures or abstract functional systems? In the Chinese medical literature there is reference to both and so neither is ‘correct’.

These problems arose because there was primarily a reliance on subjective perceptions and no system for acquiring and recording information objectively.

The power of anecdote

The early understanding of health and illness in China was derived almost entirely from analogical conclusions and not anatomical evidence^{1,4,6}. It was not until the eighteenth century that it began to be acknowledged that a conception of function is of no use without an understanding of actual structure. Surgery was prohibited for a long time in China, since it was regarded as

unacceptable to open the body in this way ¹.

It is important to realise that acupuncture arose at a time when there was no understanding of modern physiology, biochemistry, or healing mechanisms. If a person was sick, and treated with acupuncture, and they improved, it was assumed that the treatment had caused the improvement. There was no formal study of diseases and their natural history and no attempt was made to determine whether the person would have improved without the treatment.

Without having a scientific basis for determining the success or failure of treatment the two events - giving a treatment and symptom improvement - were causally related, and these specific treatments have been passed on untested to this day.

The early 1900s

By the early twentieth century Traditional Chinese Medicine (TCM) was regarded as an historical oddity and its use was mainly in rural areas ¹²⁻¹⁴. The early Chinese Communist Party expressed considerable antipathy towards TCM, ridiculing it as superstitious, irrational and backward, and claiming that it conflicted with the Party's dedication to science as the way of progress ¹³. Acupuncture was included in this criticism. The person who would become the first secretary-general of the Communist Party stated in 1919:

"Our men of learning do not understand science; thus they make use of yin-yang signs and beliefs in the five elements to confuse the world...Our doctors do not understand science: they not only know nothing of human anatomy, but also know nothing of the analysis of medicines; as for bacterial poisoning and infections they have not even heard of them...We will never comprehend the ch'i even if we were to search everywhere in the universe. All of these fanciful notions and irrational beliefs can be corrected at their roots by science."^{15(p135)}

Mao Tse-tung and the Cultural Revolution

It was left to Mao Tse-tung to save TCM, including acupuncture, by casting it into the political arena ^{12,14,16,17}. The era of Mao Tse-tung saw a resurgence of interest in TCM as a result of:

- (1) Mao's personal involvement,
- (2) The need to utilise all available resources to deliver health care to rural areas. When the People's Republic of China was formed in 1949, China was an unhealthy place and the rural areas were particularly poorly serviced. One of Mao's primary aims was to improve this situation.
- (3) The Party's desire for increased power and control. By 1968 the Ministry of Public Health had become

largely irrelevant and most of the pre-Cultural Revolution leaders had been removed and replaced with army representatives. Decision-making power resided almost entirely with Party leaders.

Acupuncture and other traditional therapies such as herbal medicine were powerful political tools and were used to judge support for the Cultural Revolution ^{1, 14}. At one stage the head of the North-East Public Health Board was publicly denounced for expressing opposition to TCM and the First Vice Minister who had been the Health Care leader since the 1930s 'confessed' in the People's Daily to having also opposed it. The reason for his opposition was because he was "divorced from Party leadership". ^{14(p47)} Doctors and patients also came under considerable political pressure to use traditional techniques, and critics were harshly treated.

In October 1966 the Chinese Medical Journal was replaced by a frankly political journal - China's Medicine - whose banner included the words 'official organ of the Chinese Medical Association'.¹⁷ The editorial of the first edition proclaimed:

"We will hold still higher the great red banner of Mao Tse-tung's thought, creatively study and apply Chairman Mao's works and continuously advance the revolutionization of our ideology and work so that we may better serve the Chinese people and the revolutionary people of the world."^{17(p112)}

After the Chinese Medical Journal was recommenced in 1973 this policy of publishing material of a political nature continued.^{18,19} It was only after the demise of the 'Gang of Four' in 1976 that this emphasis was discarded and there appeared for the first time revelations about the impact the political climate in China had had on medical practice.

In 1987, in a paper on the history of the Chinese Medical Journal, this period was reviewed:

"It is sad to recollect the gloomy days of the 'Cultural Revolution', which lasted 10 years starting in 1966. What happened to the Journal? CMJ was replaced by China's Medicine, which appeared from 1966 to 1968, filled with political documents, but very few medical papers...Although our Journal resumed publication in 1975, many authors still started their scientific articles with superfluous political sloganeering... Low quality papers were also accepted. Fortunately, normalcy was gradually restored in the Journal after 1979". ^{20(p438-39)}

The modern era

In China today medicine has adopted a more scientific approach and whilst certain elements of traditional Chinese medicine are retained, there is a growing call for objective scientific evaluation of past claims ^{12,21}. Western medicine and bio-medical science dominates,

and it is generally agreed that if TCM is to secure a place it will only be through scientific research. This is consistent with Mao's teaching, as he called for the modernisation of Traditional Chinese Medicine¹² and urged the Chinese to "uncover the treasurehouse and raise its standards".^{1(p252)}

Of the approximately 46 major medical journals published by the Chinese Medical Association not one is devoted to acupuncture or its variants. In other parts of Asia such as Japan acupuncture has been all but rejected²².

In Japan western medicine was first presented as an alternative to TCM in the 18th century²³ and by the late 19th century had assumed the dominant position²⁴. Proclamations of 1875 and 1883 restricted the practice of Chinese style medicine and doctors were urged to discard TCM and switch to western medicine.²⁴

Fact from fiction

We have a more detailed knowledge of the human body than when acupuncture was first being described, and since that time many of its beliefs have been examined closely. We can now confidently state that:

(a) The concept of *ch'i* has no basis in human physiology.

(b) The vessels, or meridians, along which the needling points are supposedly located, have not been shown to exist and do not relate to knowledge of human anatomy.

(c) Specific acupuncture points have also not been shown to exist - as noted earlier, different acupuncture charts give different numbers and locations of points.

Evidence supporting acupuncture must support the view that it is a separate and distinct entity. That is, it must support the claim that acupuncture has an effect as a result of needling specific points on the body that correspond to the vessels as described historically.

Before this claim can be tested, though, we must know which historical description is being used as the 'true' one. Which description of the vessels is being used - eleven or twelve, connected or not connected - and how many points are to be used? Why is this particular model being used in preference to the alternatives? The scientific assessment of acupuncture can proceed only when this information is provided, and its source is declared. No scientific paper on acupuncture should be published which does not provide this vital information.

Assessing acupuncture: The crucial questions

Many of acupuncture's apparent benefits are anecdotal and in assessing this technique it is important to quantify

the objective value conferred. That is, it is important to exclude natural history and the placebo effect so that one can confidently ascribe any benefit seen to the therapy²⁵.

There must be clear evidence of a distinction between general sensory counter-irritant techniques shown to have a mild analgesic effect - such as trans-electrical nerve stimulation (TENS) - and acupuncture. The analgesic effect of counter-irritant stimulation is regarded as a physiological phenomenon in which the transmission of pain signals from one site or area is inhibited by the application of another noxious stimulus at a separate site, which may be remotely situated²⁶⁻³⁰.

In addition there must be evidence that insertion of needles at random points on the body does not exert the same effect as specific needling. This matter is crucial. Proponents of traditional Chinese acupuncture claim that it takes many years of specialised training to be able to identify the specific acupuncture needling sites. If an equivalent effect is seen when a needle is inserted in the same way anywhere away from the specific site that the theory requires, then this refutes the theory.

Those who continue to claim that traditional Chinese acupuncture is a specific modality must address the existing scientific studies that refute this belief and not merely quote supportive studies or anecdotes.

Acupuncture and hearing loss: A lesson learned

The importance of objective testing is very well illustrated in a published review of the use of acupuncture in sensorineural hearing loss³¹. This paper describes well how easily an unproven remedy may be unquestioningly promoted, and how scientific assessment usually occurs pretty much as an afterthought. It describes the following process:

(a) A visit to China by a well-known, and respected, ear nose and throat specialist.

(b) Demonstrations for this person of apparent cures effected by acupuncture. No inquiry made as to whether the patients 'cured' had had pre- and post-treatment audiometric testing.

(c) Return to the USA, whereupon reports of cures began to reach the public via the media, particularly popular newspapers and magazines.

(d) Public demand for the treatment to be made available as a result of the media reports of these cures, and the apparently high success rates being achieved by trained local practitioners.

(e) The lack of objective scientific evidence for the reported cures is noted with concern, and research is conducted.

(f) Formal studies show that acupuncture has no effect upon hearing levels of individuals with sensorineural hearing loss.

The specialist who originally travelled to China, and wrote of the remarkable demonstrations he saw there, wrote the following just three years later:

“...it is a tragic mistake to take a child - or an adult for that matter - for acupuncture treatment for neurosensory deafness to any of the so-called acupuncture centers. There has not been one case of improvement demonstrated audiometrically, when a child or any deaf patient was tested before undergoing treatment and then afterwards by any reputable otologist. There have only been unreliable and perhaps planted testimonials.”^{31(p433)}

From East to West

The early 1970s were a period during which visits to China were popular and these usually involved demonstrations of the almost miraculous effectiveness of acupuncture. These visits were then written up in western medical journals more as journalistic pieces than as critical scientific reviews.³²⁻³⁴

The rapid increase in popularity of acupuncture in the West followed on from the reports of these visits, and it had captured the public's imagination long before scientific studies began to question the validity of the anecdotes.

Acupuncture research

Carefully designed and conducted scientific studies have shown that traditional Chinese acupuncture is no more effective in providing pain relief than placebo or counter-irritant stimulation such as TENS.³⁵⁻⁵⁸

Many of these trials have compared ‘real’ acupuncture (needles inserted according to traditional theory) and ‘sham’ acupuncture (needles inserted at other sites which, in some cases, were sites that the traditional theory said were least likely to reduce pain) - with no difference in effectiveness found.^{36,39,40-42,44} Since many of the studies were conducted with the cooperation and participation of professionals trained in traditional acupuncture, it is insufficient to dismiss them as a part of some imaginary anti-alternative conspiracy.

It is accepted that there are modern theories that go part of the way to explaining the analgesic action of the counter-irritant techniques such as TENS^{27-29,59-65}, though it must be noted that not all studies confirm that these have an effect over and above placebo.⁶⁶⁻⁶⁸ There is currently no evidence to support the view that acupuncture has an action or effect that is separate to that seen with these techniques.

Some modern practitioners, in view of such evidence, have abandoned the ancient theories, including the vessels/meridians and even the acupuncture points. The British practitioner Felix Mann has been noted to observe wryly that if the modern texts are to be believed there is “no skin left which is not an acupuncture point”.⁶⁹

Pain is a subjective symptom and the perception of it is affected by other factors, including psychological state⁷⁰. There is evidence of a considerable placebo effect in trials of many pain conditions⁷¹ and any scientific evaluation of acupuncture must include an attempt to see whether it can relieve pain or other symptoms better than placebo. As noted in the 1989 National Health and Medical Research Council (NHMRC) report:

“...it might well be that the clinical effectiveness of acupuncture in the reduction of pain is due more to psychological than to physical factors”.^{65(p46)}

There is certainly no evidence to support the view that acupuncture is of use in various systemic disorders (e.g. asthma^{49,58}, arthritis^{38,40,55}) and it is bordering on the fraudulent to suggest so.

Side effects

Acupuncture is not without its risks⁷²⁻⁷⁶ and if equally effective techniques are available that do not involve puncturing the skin then it is hard to justify using this invasive procedure.

“Viewed in this way acupuncture is an elaborate but unnecessarily complicated means of achieving analgesia when a clinically safer and easier method is available.”^{65(p15)}

Animal acupuncture

Supporters of acupuncture sometimes refer to studies in animals claiming that these clearly demonstrate an analgesic effect and since animals are not suggestible the placebo effect is excluded.

Animals must be restrained to have acupuncture and it is well described that when animals are restrained that they can develop anaesthesia due to fear and catalepsy - the so-called ‘still reaction’.^{5,77} In addition the studies do not compare ‘real’ and ‘sham’ acupuncture and provide no details as to the source of the acupuncture points used. Where is the description of acupuncture in animals in the historical Chinese literature?

A desire for dialogue?

Concern must be expressed at the views of some supporters of acupuncture regarding whether there is a need for closer cooperation with scientific medicine. For

example, advice given to acupuncturists by one prominent author included a recommendation to undermine the public's faith in modern medicine and science and educate them as to their need for alternative medicine.⁷⁸

Attempts to obtain comments from a number of acupuncture organisations on a draft of this ACSH paper were met by either silence or mocking sarcasm. None of the organisations approached chose to provide even a single specific comment on any part of the paper. This is particularly intriguing given that the 1989 NHMRC report was condemned by acupuncturists on the basis of:

"..failing to invite traditional acupuncturists into an open debate in which they had the opportunity to hear and to endeavour to meet points advanced against them."^{79(p51)}

Conclusion

The Australian Council on Science and Health asserts that:

(1) The public must be made aware of acupuncture's current scientific status. There is a marked difference between the claims of acupuncturists and the findings of the clinical trials research.

(2) The onus is on those who are claiming that traditional acupuncture is effective, and a distinct entity, to establish this by conducting well-controlled trials and submitting the results for peer review.

(3) There is a need for scientifically rigorous studies of the effectiveness of acupuncture in a range of conditions.

(4) Until such time as such supporting evidence is available acupuncture should not be offered without full informed consent - patients must be advised of acupuncture's unproven status and its possible adverse effects.

(5) The public should not be made to pay for this unproven therapy via Medicare rebates. The need for more research, and research of a higher standard, has been stressed by authors of previous reviews of acupuncture.^{54-58,80-82}

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Apology

Dr Stephen Basser has expressed some unhappiness at the title, "Kicking against the Pricks", which we gave to his article (Vol 13, No 1) describing his attempts to seek constructive dialogue with official acupuncture organisations. His concern is that the title could be construed as a derisory comment on those who believe in or perform acupuncture and could be counterproductive to the aims of the Australian Council on Science and Health, which he heads.

The Editors of *the Skeptic*, while maintaining their prerogative to edit contributions and to append titles to articles, have no wish to alter the intent of articles, and we apologise to Dr Basser for any disquiet this may have caused him.

On the other hand, we were quite taken with the appropriateness of this title, which paraphrases a quotation from no less an authority than the Bible (*Acts of the Apostles* 9:5).

REVIEW

Lotto Effect

James Gerrand

The Lotto Effect-Towards a Technology of the Paranormal,
Damien Broderick, Hudson Hawthorn

Damien Broderick is a writer of science fiction and a regular reviewer of such works for *The Australian*. His book makes claims that “Psi (paranormal ability) has been detected in experiments at Cambridge’s Cavendish Laboratory and the Princeton School of Engineering”. These claims do not stand up to scientific evaluation.

The Cavendish reference turns out to be based on a popular press report (Jan 92) that “while no subject attained consistent success, the Cavendish experiments ‘have shown the phenomenon’ (psychokinetic influence over otherwise random-event circuits) occurring time and time again”. One would have expected at least a scientific paper as the basis.

The Princeton reference goes to the other extreme - a mountain of statistical data claimed to produce a ‘mouse’, a psi influence. Such a mass of data now seems essential to support any psi claim. Broderick states that “the principal claims ... made in a hundred years of psychical research are that psi phenomena are sporadic, low in efficiency and resistant to normal teaching and reinforcement techniques”. However, the Princeton mouse, a psi influence of probability of 1 in 5000, has been reduced to a ‘flea’, a probability of 1 in 19, by Professor John Wendell (*The Skeptical Inquirer*, Fall 1991) pointing out the need for a more accurate statistical approach. Such a flea could well have jumped by chance upon the mountain rather than be produced by it.

Now to the claimed Lotto Effect. Again at the start Broderick claims “it is, as we shall see, the believers in psi whose expectations (some of them at any rate) have been borne out”. Broderick, to support this claim, details how in a particular examination of nine Midweek draws he got a result that was against the odds by 100 to 1. Using the same examination for 11 Saturday draws he got a result against the odds by 700 to 1. Broderick does then admit that this ‘psi’ result was not sustained for the other 99% of the scores. A scientist, not a science fiction writer, would have baldly concluded that the Lotto results were according to statistical chance.

Broderick, undaunted, then describes in a much later chapter how he contrived a further manipulation of the data and finds a result against the odds of 1 in 122 for midweek and 1 in 763 for Saturday. Broderick agrees with the criticism that “my cut-off criteria...were...not pre-specified...” (Dr Nelson, Princeton Engineering Anomalies Research - PEAR). The PEAR conclusion was that there was no significant evidence from

Broderick’s Lotto work but that this was possibly due to too few data, notwithstanding the mountain was many hundreds of millions of Lotto guesses high! Broderick, still not dismayed, proposes in his final chapter an eleven step approach to testing for ‘psi’, which includes using many operators to amass the even bigger mountain of data that now seems necessary. “The logistics of turning the Lotto Effect back on itself are well beyond an individual’s means. ... I hope ... the Tattersall company ... launch a major precognition study ...”

I would think any company would have more money than sense if it were to put resources into a project where there is no surety that, after building an even bigger mountain, any proven psi mouse will be born.

Broderick, as is common among non-scientists, is misguided or off-hand, when not being abusive, of the scientific approach. Thus he tries to build up a theory to explain the possibility of psi in our macro world using quantum mechanics which deals with the micro extremes. He also argues that since science has, at times, to accept the apparently illogical, such as light being both a particle and a wave, then the illogicality of psi should be acceptable. But this apparent illogicality of light was only accepted when there was irrefutable evidence for behaviour both as particle and wave. There is no such evidence for the paranormal.

Broderick is off-hand when he tends to decry the work of CSICOP in scientifically examining the claims of the paranormal. CSICOP is “scientifically rationalist” (can we be scientific and not rationalist?) “devoted, dedicated and bull-headed”. Professor Ray Hyman, a principal CSICOP activist, gets a comment “Needless to say he did not conceive his tenure (Chair of Psychical Research at Stanford University) in terms likely to glorify his

subject matter". No doubt Ray Hyman saw his job as being a scientist, researching, seeking the evidence, not as a science fictionist, glorifying his subject.

Broderick gives grudging praise to Hyman's efforts to examine the evidence for the psi claims for the Ganzfeld approach but does not agree with Hyman's conclusion that the success rate is "probably very close to what should be expected by chance...".

Broderick finds it strange that the US Army, having since 1984 examined the claims for psi and finding "no scientific justification from research conducted over a period of 130 years for the existence of parapsychological phenomena..." should add a proviso "we do recommend that research in certain areas be monitored...". This is no different from CSICOP continuing to investigate paranormal claims even though there is no evidence from past experience for the paranormal.

He becomes abusive when criticising CSICOP's former chief investigator, James Randi, who has earned his renown not only for his exposures of Uri Geller and psychic surgeons for using magical tricks, but also for more straight-forward science such as testing water divining claims. Broderick rubbishes Randi's four "Rules for Psychics":

1. No psychic can produce phenomena on command or on a regular basis;
2. Cheating is a compulsion with the psychic;
3. Unless the detractor is able to explain all the psychic phenomena as having been done by ordinary means, he has failed to prove his case;
4. Psychics cannot be expected to produce results when persons of negative attitude are present.

These are Randi's conclusions based on the many hundred investigations he has carried out since CSICOP

was formed in 1975. Yet Broderick regards Number 2 as a slur. Now I recall a similar conclusion by another American investigator, Robert Sheaffer, that many psychics originally believe they have the power but when they become professional they find they have to produce psychic phenomena on call and this is when they start cheating.

Broderick says it "isn't sensible to assert with Randi that 'there is simply no reason why these illogical conditions should be accepted'. If we were to apply similar rules to ...the science of astronomy we would be laughed out of court." It isn't sensible to Broderick because 200 years ago some sensible people such as Thomas Jefferson refused to believe that meteorites fell from the sky. It is only because of scientific research since then that it has been established that this is so.

There are other important lacunae in this book. James Randi has pointed out the importance of having a magician in any team investigating a paranormal claim because only a magician knows how easily we can be fooled. There is the fact that something like \$250,000 can be won by anybody scientifically proving a paranormal event. This amount is available when all the sums put up by Skeptics organisations worldwide are totalled. Then there are the references to Rhine's claims at Duke University, without mentioning the serious doubts raised about Rhine's work by Paul Kurtz and CEM Hansel among others. Broderick finds reality in the performance of the 19th century medium, DD Home, without mentioning that his claims are now regarded as very dubious.

I would recommend this book as a good science fiction read and also as a handy exercise for science students in sifting science from non-science. ■

REVIEW

Pseudodocumentary Piffle

Sir Jim R Wallaby

The Seven Network, which promotes pseudoscientific conspiracies like the weekly womens' magazines promote New Age pseudoadvice, distinguished itself during the month of April by the presentation of not one, but two, spoofs on the pseudoscience genre show.

The first of the duo, the widely promoted *The Einstein Code*, was screened 'Live to Air' on April 1 and purported to link every possible conspiracy in the world to a secret formula describing a 'fifth force', allegedly discovered by Albert Einstein in his later years. The conspiracy encompassed the assassinations of John and Robert Kennedy, the death of Pope John Paul I, the disappearance of Harold Holt, the devastating Mexico City earthquake, the loss of the space shuttle Challenger, the crash of the Hindenberg, the sinking of the Titanic, various volcanic eruptions and almost anything else one could think of.

It followed the traditional pattern of the typical pseudoscience show; interviews with assorted 'experts' and ever more dramatic and breathless 'disclosures'.

Just before the scheduled end of the show, and just as the 'intrepid investigators' were about to reveal some startling piece of information, the screen went to 'snow' and a 'lost satellite' signal flashed up, followed by a 'We apologise ...' message. This was immediately followed by a credit for "April Fool Productions".

The programme was cleverly done, in some ways too cleverly. The first inkling this viewer had that the show was not just another load of exploitative rubbish was quite early in the piece, when it became apparent that all of the 'experts' were far too fluent in their delivery. Professors of physics, NASA engineers, retired US military officers and CIA agents just don't deliver their lines the way actors do, at least not in my experience. The real surprise of the night was that the show had been produced by Channel 7, Brisbane and they are to be commended for a good joke.

The second spoof went to air on the evening of April 9 (Good Friday) and would almost certainly have offended most Christians and Jews who were unfortunate enough to have tuned in.

Titled *Ancient Secrets of the Bible*, the show was

fronted by an actor whose name may (or may not) have been William Devane (the last time I saw him, he was portraying Robert Kennedy in one of those interminably tedious reconstructions of the Kennedy era).

This laughably inept production sought to show how 'the weight of scientific evidence now supports the literal truth of the Bible'. Startling 'new evidence' was produced to show how the destruction of Sodom and Gomorrah (volcanic eruption); the saltification of Mrs Lot (unexplained); the dispersal of all races after the destruction of the Tower of Babel [or Babble as the narrator insisted on calling it] (an 'expert' showing how all the different skin colours could have been aquired in one generation - skin colour? Well, scratch a fundamentalist and find a racist, I always say); the burning bush talking to Moses (a bush that produces a volatile substance which burns without consuming the bush - there was no description of how this made the bush *talk!*); the parting of the Red Sea (an 'expert' with an 'hydrological model' of the Red Sea and the Gulf of Suez, in a container no larger than a two litre milk bottle which, when 'wind' was made to blow across it, showed how an underwater ridge was exposed. At the scale of the thing, I judged the 'wind' to be blowing at about 10,000 knots); the destruction of the walls of Jericho (earthquake plus lightning) and the electrical nature of the Ark of the Covenant (shades of Erich von Daniken) (which zapped some follower with blue 'lightning' as seen in all the worst sci-fi movies), were all now supported by scientific evidence. It even had a segment on the infamous Paluxy River footprints ('human' and dinosaur), in which the 'expert' Duane Gish sought to show how these two species co-existed. Another equally erudite 'expert' even claimed that similar dual tracks existed in Russia and *Australia*. (Has any one ever heard of these tracks in Australia?)

The difference between this spoof and the previous one lay in the fact that the producers of *Ancient Secrets...* appeared to think they were producing a genuine documentary. It too had an array of 'experts', most of whom were labelled as "Geologist and Professor", "Biblical Expert" or "Middle Eastern Historian" and

even had some ‘skeptics’, one or two of whom I recognised as genuine scholars in the field, but most of whom were of the von Daniken school of ancient astronaut believers. The ‘skeptics’ were allowed one sentence apiece and were then refuted by the ‘experts’, with a liberal dose of ‘serious, look-you-straight-in-the-eye sincerity’ from the narrator. Talk about straw men!

Nonetheless, the programme did produce some gems of information that made the pain of viewing worthwhile. For instance, the ‘Angels of the Lord’, who looked and acted like extras in Hollywood street gang movies; the fact that the Tribes of Israel never numbered more than 50 individuals at any one time (or so one would have gathered from the small numbers involved in the Exodus and the assorted battles); that the preferred garb of fundamentalist ‘experts’ is the shiny polyester suit.

Some other things that stick in the mind (as opposed to the craw). The battle scenes which reminded me of nothing so much as that Monty Python sketch about the Townswomens Guild staging a re-enactment of the Battle of Pearl Harbor. An Israelite arguing with Moses about leaving Egypt, who appeared to be wearing a cabbage on his head. The goings on at Sodom which looked to be about as depraved as a Rotary Club dance. God using the same lightning bolt to knock down the same tower in Sodom, Babylon, Jericho, Egypt and a couple of other places. The three Rabbis who had tunnelled into the Temple Mount and who were just about to discover the hiding place of the Ark of the Covenant, when they were stopped by the authorities and the tunnel sealed up. Two of the Rabbis were interviewed and, as they appeared to be about 80, it must have been a rather slow tunnelling job.

The final gems came from the narrator who claimed “the Bible is now shown to be a scientific almanac” and “these matters are still controversial, but one thing is certain, there is no scientific proof that the events described in the Bible did *not* happen”.

I don’t know what the people who support this sort of rubbish think they are doing, but if they are seeking to remove the Bible from its relatively respectable position as a great religious work and are trying to have it accepted as a scientific text, they should be aware that it will be then judged by different rules. Far more stringent rules which will show it to have no value at all.

On second thoughts, if a group of militant atheists had set out to deliberately discredit the teachings of the Bible, they could hardly have done better than to produce this specious load of drivel. Perhaps then it was a satire after all. ■

Definition

Tim Griffin

In his article “Definitive Definitions of the Indefinable” (*the Skeptic* Vol 13, No 1), Sir Jim R Wallaby invited subscribers to add to his list of pseudoscientific and paranormal cliches and to include their accepted meaning as well as their real meaning.

This response is from Prof Tim Griffin, Head of the Department of Behavioural and Social Sciences in Health, University of Western Sydney, Nepean.

Other subscribers are invited to add their contributions to our collection.

“It’s only a theory”

Accepted meaning:

Don’t give this idea credence, its only an idea, only a theory - don’t take it seriously. This aphorism is widely used by adherents of the paranormal and pseudosciences, especially the New Agers and Creation Scientists.

Ronald Regan, when on the campaign trail rounding-up the votes of fundamentalist Christians is reported to have said when asked about evolution: “Well, it is a theory. It is a scientific theory only, and it has in recent years been challenged in the world of science — that is, not believed in the scientific community to be as infallible as it once was.”

Real meaning:

According to Stephen J Gould (1984 - “Evolution as Fact and Theory” in “Hens Teeth and Horses Toes: Further reflections on natural history”. NY: Norton — from where the above quote comes, p. 254), evolution is not just a theory, it is a fact (though not in the absolute sense).

While there are competing theories about the mechanisms for evolution, extraordinary evidence would need to be produced to challenge the fact of evolution.

Theories are the best explanations for phenomena which we hold at a given time. The nature of scientific theories is that they are open to challenge and change and, when they fail to adequately explain, to being overthrown by one which does a better job. A scientific theory, therefore, is not “just a theory”, it is the best we have. ■

REVIEW

Science or Theology?

Andrew Parle

The Mind of God - Science and the Search for Ultimate Meaning, Paul Davies (Penguin Books, 1992)

“Theology is a device by means of which ministers who have lost their faith can remain within the Church.” Sir Humphrey Appleby in “Yes, Prime Minister/The Bishop’s Gambit.”

I find it difficult to categorise this book. It contains some scientific information, but it is not a scientific book. It contains some material derived from philosophy. In the end, I can only say that it is unbridled speculation about matters metaphysical and theological, packaged in a volume with a catchy title. As such, I found it easy to read but difficult to take seriously.

The author contends that Science (by which he primarily means physics) is somehow leading to the point where it is necessary to factor God into the equations. In this he is not speaking for all scientists, however, who have a range of views on theological subjects as diverse as the rest of the community. I find his assumption of the role of spokesman quite irritating.

Davies does make the point that physicists believe that the universe is rational and mathematical and even elegant as an article of faith, which is certainly true. Scientific endeavour is pointless unless the universe is rational. If Rationality is the physicists’ god, then it is a particularly efficient one because it has almost always answered our prayers, although not always in the form we expected. By this interpretation, the closest I have ever come to enlightenment is when I first grasped the Minkowski formulation of Maxwell’s equations.

Davies’ method of exploring the limits of scientific rationality is to ask a heap of questions, some not without interest but most of which cannot be tackled scientifically. Why are there physical laws? Why is the universe rational? Can the Universe create itself? Is the universe a giant computer? Why are the laws of nature mathematical? Why does arithmetic work? I am not sure that it is even possible to discuss these logically, as to admit these questions one must also doubt the validity of logic. Some questions he poses seem to be no more than word games. The answers he provides lead him towards a deity, which to my mind is no answer at all.

To add weight to these speculations, Davies mentions a number of scientific theories and hypotheses. The book fails to make the necessary distinction between scientific theories that rest on a firm foundation (such as quantum mechanics and relativity); theories that are currently accepted but might be modified or even overthrown by new work (such as much of cosmology); theories that are basically speculation but are worth investigating (such as the Nemesis hypothesis, in its day); and theories that physicists with a certain bent of mind might entertain over the fourth beer instead of discussing the four forces of nature: sex, sport, money and politics. I fear that a non-scientist who reads this book would not only be misled on the purposes and methods of science, but might believe that physicists drink a lot.

In conclusion, I found the book entertaining in parts, irritating in others, but ultimately unsatisfying. Davies is much too willing to resort to God to answer the questions he raises. In essence, he is resurrecting the “God of the Gaps” by manufacturing new gaps. ■

Levitation Competition

In the previous issue, we published a photograph of Harry Edwards ‘levitating’ a matchbox and asked readers to give their versions of how it came about. Obviously we struck a chord with quite a few of you, as we received an avalanche of highly improbable explanations. So many so in fact that Harry will be writing an article for the next issue, itemising many of the more outrageous suggestions. The winner of the book for the best answer will also be announced in the next issue.

From my perspective, there are so many of you out there with such devious minds that I think we should get together and start our own cult, thereby becoming immoderately rich.

BW

FORUM

Paranormal Politics: A Response

Raymond Watson

In his "Politics and the Paranormal" (Vol 13, No 1), Phil Shannon attempts to show the negative effects of pseudoscience and mysticism by drawing upon historical example, but he makes a number of arbitrary assumptions that are clearly based on his support for Marxist historicism as exemplified by British Marxist historians EP Thompson, Christopher Hill and EJ Hobsbawm, upon whose works he heavily relies as sources. That is his prerogative, as is his view that the worst thing about 'New Agers' is their abstention from collective political action to change a 'wealthy, corrupt and power hungry status quo'.

I too decline to join in radical collective political action to change the status quo, although I am not adverse to peaceful democratic political reform. Surely support for Marxist revolution is not a *sine qua non* for inclusion in the ranks of what are broadly termed 'sceptics'? Hopefully there is room for we political conservatives too?

My political conservatism is based on suspicion of change for the sake of change. I need to see the benefit of any social or political change and measure the amount of sacrifice or pain required against the likely benefit. I can personally reconcile this conservatism with my idea of scepticism, even if others can't. But I object to Mr Shannon's sleight of hand trick which equates political conservatism with Nazism. Fascism is not political conservatism nor does it have the same roots.

Mussolini's Fascists were a spin-off from the Italian Socialist Party and the actual name of the Nazi's party was The National Socialist German Worker's Party. Both parties eschewed the 'decadent' democratic process and seized power in the name of the 'dispossessed'. Their ideology was collectivist and ultimately totalitarian - just as was Lenin and Stalin's Marxism.

It is futile and probably tasteless to argue about the numbers or the 'quality' of the genocide; suffice it to say that while the Fascists gave us the Holocaust, the Marxists gave us the gulags. And, what's more, after all the suffering and pain, both systems failed.

Mr Shannon's disdain for pseudoscience, the paranormal and other types of anti-rational mysticism is

strangely qualified according to his political bias.

"The paranormal flourished in Hitler's Germany," we are told, and "Hitler consulted astrologers". So? Therefore mysticism equals Fascism? It strikes me it's a pity more Nazis didn't rely upon astrology if, like me, you think it is bull-dust. The V-2 rockets, the Panzer divisions, the Luftwaffe, the gas chambers were not created by demented astrologers, but by hardened, cynical - sceptical? - scientists.

On the other hand, Shannon's heroes of the English Revolution, the Levellers and the Diggers, ie the Left, used "pseudoscientific ideas against King Charles' Cavaliers". I thought they used muskets and superior military tactics, but no, while these 'ideas' were 'scientifically irrational' they 'dispelled passivity and resignation' and 'encouraged political action by the powerless'. In other words, even if the results were 'politically progressive', the Glorious Revolution was won partly because many of the revolutionaries were superstitious fools. No wonder Mr Shannon equivocates on the question of pseudoscience and mysticism.

Shannon quotes Christopher Hill's contention that in the 17th Century, alchemy had 'social and democratic possibilities' as some alchemists believed that if they could create gold they could 'usher in a utopia of material abundance and social equality'. Again, the assumptions are based on a prejudice in favour of egalitarianism, not on reason as such. The alchemists *support* for egalitarianism might have had 'social and democratic possibilities', but the alchemy had no possibilities at all.

Shannon counterpoises the likes of Owen and the Chartists to millenarians and Methodists. In many cases, though, they were one and the same. This sort of thing still goes on, it is not confined to a particular historical stage. Millions of unarmed Iranians defeated the Shah's very tangible and scientific military machine with only the Koran to wave, because they believed that if they were martyred they would get to sit at the right hand of Allah.

What's the lesson? It's called fanaticism and its rejection of reason does not, unfortunately, prevent it from prevailing here and there during every and any

historical epoch. The violent overthrow of one class by another does not necessarily guarantee social progress, nor is support for it proof of a sceptical world view. Far from it, in many cases.

Mr Shannon's example of gradual rational enlightenment, the radical American folk singer Woody Guthrie, is a bit of an embarrassment. Whereas once Woody was influenced by psychic phenomena, the occult, etc, as a reaction to the poverty in the US farming depression, he finally "...became a Communist, an atheist and an ardent admirer of science and technology as promoted by the Roosevelt administration's development of hydro-power."

The communist party he supported, the Communist Party USA, was, even then, more avidly pro-Soviet than most, denied the existence of the gulags, defended the 'show trials' and mass executions and supported the Hitler-Stalin Pact. Being an atheist was simply part of communist ideology anyway, but it was as much an act of faith as is belief in God. Skeptics must be agnostic, surely, until we have the means to prove whether God exists or not. Atheism cannot automatically be equated with scepticism.

Woody finally began to 'admire science and technology'. So did Werner von Braun and Adolph Eichmann. Even the ayatollahs needed the air force to defend the Islamic Revolution and their allies in Lebanon, the Hezbollah (Party of God) may trust in God but they still pass the Western-manufactured ammunition!

In the first half of his article, Mr Shannon stresses his contention that "in post-Enlightenment times, the paranormal and supernatural have been largely aligned with political conservatism", but the second half is largely dedicated to 'excusing' his 'historically progressive' classes for embracing the same superstitious activities. He then concludes with the sweeping statement, "So, historically, the paranormal and the pseudosciences have been allies of the status quo"! But surely the essence of his own article is that people of all classes of society, both the rulers and the ruled, the 'reactionaries' and the 'revolutionaries' in all historical epochs have dabbled in mysticism, the supernatural and pseudo-science.

Science is a tool and any social and political entity in the 20th Century will use that tool, no matter the political complexion of the regime or where it stands on the political spectrum. It is evidently necessary for survival against the whims and depredations of nature and for the transformation of nature to meet human ends. No

status quo concerned with the preservation and development of its own regime can do without it, and to utilise it requires at least an acceptance of its efficacy by the bulk of the population. Even the ayatollahs need power plants and oil rigs, 'Allah willing', of course!

It is not the status quo of this country that is spreading archaic fundamentalist religious cults, clairvoyance, astrology, psychic surgery and astral travel. The political establishment really does want us to be the technologically advanced, scientifically skilled populace envisaged in the slogan 'the clever country'.

One may argue that it wants to reap all the benefits for itself and dispossess the labouring classes and the powerless, but that's another highly debatable moral/socio-political question, not essentially an issue for skeptics trying to eliminate superstition and obscurantism. It belongs in a political journal, hopefully one a little less partisan than what Mr Shannon would seem to prefer.

These 'New? Age' charlatans have been with us since the dawn of time, or to be more precise, since humans were able to communicate ideas. I don't pretend to know why - or if - they are thriving right now. Other than the fact that most of them just want to do us out of our money - an ancient art, surely - it might be a last gasp revolt against the ultimate triumph of science. It is precisely because they are so aberrant in a technological era that we notice them and become infuriated with them. But whatever it is, it is probably far more psychologically and socially complex than any politically biased conspiracy theory. ■

Jumping at the Chance!

Colin Keay, President of our Hunter Region branch, brought the following to our attention.

The Newcastle WEA Course Programme for 1993 offered a 'Dinner for Two' for the first person who correctly identified the 'bogus course' listed in the programme. The bogus course was "Bungee Jumping by Correspondence", conducted by "Hugo First" and, by the description, fairly obviously bogus. The course was available at \$198.

A nice ploy to ensure that everyone read the entire booklet, you might think. Perhaps, but within the first week from the release of the brochure, the WEA authorities had received five cheques for enrolment into the course. ■

FORUM

Musical Myths: A Response

David Hagar

Blair Alldis just narrowly misses answering his own Musical Challenge. He is correct in that the putative ‘myth’ involves temperament. The problem is shrouded in two and a half millennia of musical practice, mathematics and aesthetics.

The ancient Greeks were the first in recorded history to muddy the swimming pool with their ‘doctrine of ethos’ in which the moral qualities and effects of music were based on the Pythagorean vision of music: a microcosm of sound and rhythm ruled by mathematical laws that operate in the whole of the visible and invisible universe. Music could even be a force which could affect the universe. Essentially the doctrine said that if you listen to the right kind of music, you will be a desirable character and if you listen to the other type you will be a scoundrel or worse.

These moral qualities imbued by music were determined by the various modes or scale systems then (and to a certain extent to this day) in use. Since then various attributes have been ascribed to various keys, even beyond the major/minor division which is a remnant of early Greek thinking.

In the 12th to 15th Centuries, literature was limited to the modified Greek modes and everything Catholic fit neatly into Aristotelian categories, including the intervallic relationships of pitch in music. Intervals of the unison, fourth, fifth and octave were considered ‘perfect’, a term we still use today. When an interval of a fifth, say, was juxtaposed simultaneously, it had a ‘ring’ to it and the listener could hear no ‘beats’ or interference waves. In fact, the predilection for perfect intervals was the foundation of parallel organum in the Catholic literature of that day.

This state of affairs had severe limitations with the gradual introduction of chromaticism. Several attempts since the 16th Century have been made to devise a system whereby consonance can be sustained while music became less diatonic, more chromatic and modulatory.

In England in the 13th Century, a radical development occurred which virtually presaged our triadic polyphony and homophony still used today, or at least until dodecadophony made its appearance around the turn of the 19th Century. This was the introduction of the gymel

and aesthetically moved away from the perfect intervallic relationships so cherished by Continental Catholics. Gymelling was simply a melody similar to Gregorian chant, but doubled not at the intervals of perfect fourths, nor fifths. The doubling was at the sixth, or its inversion, the third. Perfect or open intervals were out. The *Ars Nova* had supplanted the *Ars Antiqua*.

However, as in any evolutionary process (biological or cultural) vestigial organs (no pun here) remain.

Up until this time temperament only allowed and limited tonal variety around a couple of closely related keys. The further the tonality moved away from the key of C, the more out of tune the music became.

Around the end of the 17th Century, a new system of temperament was coming into vogue, which allowed more variety and contrast in the literature. This led to the publication of the ‘Old Testament’ of keyboard players, JS Bach’s “Well-Tempered Clavier” of 1772, a series of preludes and fugues in each of the 12 major and 12 minor keys. (The ‘New Testament’ of keyboard players are the Beethoven sonatas.) This half-way measure was known as ‘mean-tone’ temperament and was still based in part on the *ars antiqua* system, but allowed for aesthetic adjustments to intervals of the second, third, sixth and, to a lesser extent, seventh, but still retained the pristine perfect nature of the unison, fourth, fifth and octave. The continuation of the series of mean-tone fifths leads to a very noticeable discrepancy between enharmonic sharp/flat pitches amounting to 41 cents between , say, G# = 773 Hz and Ab = 841 Hz. Some keyboard instruments, notably pipe organs of the period, were constructed, as Blair stated, with separate keys for Eb/D# and Bb/A# being the most common.

The latest development in the late 19th Century was for the keyboard instruments to be tuned using ‘equal temperament’ and has been applied to both wood/brass winds. The octave is divided into 1200 cents, with each semi-tone equal to 100 cents or the twelfth root of two, or 1.05946. This is a compromise at best and a desecration aesthetically to those who today may enjoy Monteverdi *et alii* heard correctly played.

In equal temperament, no interval is acoustically correct except the octave. Even that statement must be

qualified. Aesthetically, an exact octave is out of tune to the human ear and must be 'stretched' upwards a couple of cents for each octave above middle C. Likewise, each octave must be stretched downwards below middle C. Remember: every recently tuned piano is theoretically out of tune. Fine! That takes care of temperament problems with keyboards.

Orchestras are slightly different in their approach to temperament, which has everything to do with Blair's myth. Orchestras have retained more of the traditions of the *ars antiqua* because they are not bothered with fixed pitch. One only needs to listen to the string section tuning up, listening for those nasty un-Catholic imperfect beats. String players tune exactly the same way Pythagoreans would have. As a bass trombonist, I tune the same way as my cellist colleagues. The proverbial A is intoned by the oboe. I tune to that A by sounding a D a fifth below and an E a fifth above and listen to the interference waves. When the beats disappear, I know I am in tune.

The orchestral musician, freed from the difficulties of fixed pitch instruments, 'leans' on certain pitches, depending where they appear in the tonal system. If an F# is played in the tonality of D major or G (non-modal), that F# will be slightly higher, or sharpened by a couple of cents. Similarly, an Eb in the tonality of Bb will be leaned on downwards as any fourth would be. Perfect intervals remain perfect except the fourth. Seconds, sixths and sevenths (all major) tend to be wide, major thirds particularly so. Therefore, in orchestral performance there is a difference between enharmonics of C#/Db, Fb/E, etc, depending upon the tonality and the function of that particular pitch in the underlying functional harmony.

To illustrate what is being said here about temperament, I suggest that the curious listen to the organ entrance in Saint Saens' Symphony No 3 and Strauss' Also Sprach Zarathustra. Another glaring clash of temperaments is in the opening bars of the Bb Minor Piano Concerto of Tchaikovsky; those crashing ten finger chords are miserably out of tune with the orchestra!

In general, in orchestral literature and its performance, players lean on and favour certain pitches, depending where they are in the harmonic/tonal fabric.

Therefore, outside the obvious major/minor division, an opus in Ab major will have performers slightly leaning upwards on their C's and G's, whilst in E minor, their G's will sag a couple of cents.

Blair is quite correct about fixed temperament-equal temperament instruments. No-one could tell the difference if a Shostakovitch prelude were transposed

into another key. However, the nature of temperament in an orchestra is a different matter. Flat keyed tonalities sound warmer and sharp keyed tonalities sound brighter, major or minor.

PS I have intentionally omitted singers from this discussion. I personally do not know what their tonality/temperament is, if even they have any! ■

* * *

A further Response

Daryl Haslam

I am so grateful to Blair Alldis for his expose of the affectations of some musicians and musicologists (Vol 13, No 1).

Because my music teacher mother was never able to drill music's finer points into me, I have never been game enough to voice my disbelief of the so called sonorities, but here at last is a man prepared, not only to state the case, but also to offer a neat way of proving it. Mark you, my sister (same music teacher but a far better student than I) takes a less subtle approach to this matter than Mr Alldis. She simply suggests lifting or lowering any music by one full tone and then challenging a 'perfect pitch' expert to pick it, and I reckon she's right.

But further proof of Mr Alldis' contentions was provided by Radio National on 21 March, when Ralph Collins' last item on his Concert programme was a Mozart violin concerto. Collins was at pains to explain to his listeners that this was a most unusual recording in that it was played on Mozart's own original gut-string violin, accompanied by a 1780 piano. Because it was Mozart's own violin, he explained, it was not possible to tune it up to A 440, which clearly proves Mr Alldis' assertion that A 415 to A 429 was the norm for that period. ■

A Plea

The Tasmanian Branch (or Twig, as James Marchant insists on calling it) would like to buy a second hand photo copier, or to find a generous Tasmanian subscriber who will make one available for use in producing their local journal, *Skepticus*.

If anyone can help, please contact Dr James Marchant on 002 624 3323 or at GPO Box 1124K, Hobart 7001.

FORUM

Is Mathematical Physics Paranormal?

Andrew Parle

In his review of Paul Davies' and John Gribbin's "The Matter Myth", Alan Towsey (*the Skeptic* Vol 13, No1 p 23) raised a few queries about the nature and methods of mathematics and mathematical physics to which, as a former practitioner, I feel the need to reply.

In an otherwise excellent article, Alan displays a deep distrust of thought experiments, mathematical models, and the like, placing the value of this evidence on par with evidence for the paranormal. Part of this distrust may be rooted in the rather hyperbolic style that Davies and Gribbin adopt: but then this is a popular book, not a physical treatise. As mathematical physics has led to some of the most accurate and most certain science we have, it is worth looking at why (and how) we trust in our discoveries - and why our scepticism is better directed elsewhere. In this article I will look at some of the questions raised by Alan in his review.

Gravitons must exist, according to quantum theory. But how certain are we that quantum theory is correct? The answer is - so certain that on several occasions science funders have invested millions in confirming the existence of particles (such as the omega minus and the intermediate vector boson) and always with success. Some predictions in my own field, quantum electrodynamics, check out with experiment to fourteen decimal places. The predictions of quantum theory, no matter how strange (and some are indeed against all common sense) have been uniformly confirmed by experiment. Gravitons must exist because a quantum particle must carry the force of gravity (action at a distance is not allowed).

Accepting that gravitons do exist, how certain can we be of their properties? These are derived in a straightforward way from what we know of gravity itself. Gravity is not affected by electric charge: thus the graviton has no charge. Gravity has infinite range: thus the graviton has no mass and must travel at the speed of light (just like a photon). Because of certain symmetry with properties of gravity (classically, it is described by a tensor) it must have a spin of 2 Planck units.

So if we know all about the graviton, how come we haven't seen them? The answer is because gravity is so weak, we have not yet been able to construct an

experiment sensitive enough to detect them unambiguously. Nevertheless the evidence of their existence is extremely strong.

Not all the results of quantum theory are so strongly supported as the graviton. Much remains to be done, both in the interpretation of the findings which we already have and in the synthesis of the disparate areas of physics. There are always going to be way-out sounding theories on the fringes of the discipline, but in quantum theory you can never be sure: such a theory may well turn out to be correct. Quantum theory has always sounded like mysticism to the uninitiated because it is so foreign to our everyday experience, but it is the hardest of hard sciences, pursued with an analytical rigor unknown in any other science.

Alan dislikes the Davies/Gribbin description of a hypothesis for the start of the universe - the 'quantum flash'. Well, I don't like it much either. The creation of virtual energy out of the vacuum is another quantum prediction which has been confirmed by experiment (except it is not created in the long term, just borrowed from elsewhere) but I personally would require a lot of mathematics to convince me that it was physically reasonable.

Alan finds the idea of measuring a billionth of a second incredible. Physicists regularly measure intervals of less than that (a nanosecond), whether Alan believes it or not. In fact, we build machines which operate at nanosecond speeds. Look at any microprocessor, where pulses pass between gates and transistors switch at these rates - with incredible reliability (microprocessors are among the most reliable machines ever made, because they have no moving parts). Should we disbelieve in computers, then?

Alan's distrust of mathematics started with Zeno's paradox, which (Alan thinks) proves mathematically that Achilles could never pass a tortoise who had a head start. Basically, Zeno was the kind of person who liked stumping people: "Here, see if you can explain **this!**". The paradox did not constitute a formal proof but was sufficiently intriguing to entertain and baffle the audience. The hole in the reasoning lies in the assumption that an infinite sequence of ever increasing numbers has

no limit. Mathematically, there can be a limit: in Zeno's case, that's when Achilles passes the tortoise. Any modern mathematician, and a few of the brighter high school students, could point that out. Nothing paranormal there.

The ancient Greeks could do a lot more with numbers than just make entertaining paradoxes: they also invented irrational numbers. Any primitive culture knows about counting numbers: zero and negative numbers are a small step to make: rational numbers are the ratio of two integers. The Greeks showed that there had to be other numbers (the irrational numbers) for example, the square root of two. Together, the rational numbers and the irrational numbers make up the real numbers.

We, however, have gone even further. The square root of two is well enough, but how about the square root of minus 1? This brings on another new class of numbers, the imaginary numbers. The name is a mathematician's joke (imaginary vs. real) but both classes of numbers are just as real. Luckily, the process stops there, as the most general 'number' is the sum of a real part and an imaginary part, and is called a complex number.

If you find the above unconvincing, then I have a surprise for you. Open any book on electrical engineering, and you will find that it's full of complex numbers. I trust your scepticism does not stop you enjoying the benefits of electricity.

Alan states that he distrusts mathematical models, thought experiments, and computer simulations. Such distrust is well merited in the case where the input data is wrong, the model badly constructed, or the program has errors. However, all are powerful and accurate techniques when properly applied. For example, Einstein constructed the theory of Special Relativity by means of thought experiments with the well known but bizarre results of mutable space and time. What he actually did was construct mathematically the observable consequences of living in a universe where the speed of light was independent of the velocity of an observer. He had (and this is the original bit) dreamed up this condition as a way of explaining some results of the Michelson-Morley experiment on the nature of light. The results of his cogitation were bizarre beyond belief, but have been triumphantly corroborated by experiments ever since.

Such results are checked, not once but many times (one of life's little pleasures is being able to point out where a colleague has made a mistake). Only the ones which can stand a thorough scrutiny end up in the scientific canon. The same cannot be said to popular publications, where one often finds hypotheses which

are rejected or at least regarded with deep suspicion by the scientific community.

Probability is another area where results are frequently counter-intuitive. Alan is quite wrong in saying that one cannot make statistical predictions of random events. For example, in throwing an honest dice, one can make the statistical prediction that over a large number of trials, about one sixth will result in the number 2. The likelihood of all possible outcomes can be easily calculated by methods worked out centuries ago, and used by gamblers to fleece the unwary ever since. Now some events which are deterministic are unpredictable in practice - after all, if we had all the elements of the dice's trajectory we should be able to predict how it would fall - but some events are inherently non-deterministic and can still be treated statistically. The classic example is radioactive decay, where the decay of a single atom is non-deterministic in principle, but we can treat the decay of large numbers by means of a simple statistical relation, the half-life.

Another confusion arises from the phrase "finite but unbounded". Alan rightly points out that 'finite' is derived from a word which means 'bounded', and in common speech they may well mean the same thing, but the situation is different in mathematics. To say the universe is finite means that you could in principle measure it's volume in cubic light-years or whatever and come up with a number. To say the universe is unbounded means that it doesn't have an edge. If you headed off in one direction and kept on going, you would never come to a boundary of the universe, but would (because it is finite) eventually come back to where you started. If this is difficult to conceive in four dimensions of space-time, consider a circle drawn on a sheet of paper as being a one-dimensional universe. It is finite: you can measure the circumference without leaving the circle. However, you can travel on the circle forever without ever finding an end, because it doesn't have one.

Bizarre results crop up in science from time to time: most of them are wrong, probably. However, it must be a religious conviction to be able to state that the truth must always be obvious, that our human brains can inherently encompass the laws of the universe without effort. It is much more reasonable to expect that the universe is complex but rational, and that with the proper tools, we can unravel that complexity, however bizarre the results in the view of some. The nice thing about mathematics is that it works for everyone who is willing to put the effort into learning.

One last point. Popular books might explain the current

state of a scientific field well or badly, but it is a rare book for a popular audience which can truly reflect how that field has obtained its results. It is hardly surprising that such a book makes these results appear out of thin air or the imagination of scientists, but that is not the case. Mathematics and mathematical physics are based on as firm a foundation as any science (much more than most) and great confidence can be placed in the accepted ideas, properly interpreted. This does not mean that its initiates cannot make just as great fools of themselves when they venture outside their fields of study as any other expert. ■

* * *

More on Mythical Mathematical Matters

Hans Wieler

I hope that after reading Alan Towsey's "Mythical Matters?" (Vol 13, No 1) many will write opposing his views. To save the reputation of the true Skeptic, it should be demonstrated that Alan Towsey fails to qualify as a true Skeptic on some important points.

I agree that he is entitled to criticise a book on physics as a layman, just as a first year university student is entitled to criticise a book on mathematics. But his criticism, like that of the student, must take a different form from that of the expert. Thus, the student may object to the lack of clarity of the text book; he may say, for instance, that the author has failed to make it clear what the square root of minus 2 means, but he is not entitled to say (like Mr Towsey) that the square root of minus 2 is as imaginary as dragons and unicorns. To say this would be the province of the expert mathematician who, of course, would not say it, knowing that it is well defined as the ordered number couple $(0, -2)$.

Again, the statement: "the Universe is finite but unbounded" is dismissed by Alan Towsey as meaningless because his Latin dictionary says: "finite = bounded". As in the case of the square root of minus 2, the rejection of the statement is not the province of a linguist but belongs to the philosopher of science. All the layman is entitled to say is that he does not understand it and that the book has failed to explain it to him.

Note that in this context the difference is easily explained by the example of the surface of a sphere (eg

the surface of the Earth). The surface of a sphere is finite in the sense that its surface area is equal to a finite number of square kilometres. For instance, only a finite number of carpets of fixed size can be laid on the Earth without overlapping or doubling up. But the surface is unbounded in the sense that you can draw a line in any direction without being stopped by a boundary.

Many laymen, like Alan Towsey, find it difficult to visualise the three-dimensional analogue of a finite but unbounded universe, which requires that only a finite number of boxes of given size would fit into it, while any line (straight or otherwise), could be drawn without ever meeting a boundary.

I have not read the book which Alan Towsey criticises and hence cannot say whether he is justified in saying that "much of the book is nothing but wild speculation". But what he really means is that much of modern physics is nothing but wild speculation. As a true Skeptic and layman he should have said that it appears so to him.

In conclusion, I believe that both Susan Stebbing and Alan Towsey are wrong when saying that physicists should stick to physics and leave philosophy to philosophers (heaven forbid!). Physicists need a great deal of philosophy, although not the type of philosophy they get from the traditional philosophers. Philosophers of science like Reichenbach, Carnap, Phillip Frank, Popper, Adolf Gruenbaum...have specialised in the philosophy required by the modern physicist and mathematician. Their task is to clarify Alan's "wild speculations", which are vital in the early stages of a new theory.

The true Skeptic humbly accepts this situation, for otherwise he ceases to be a true Skeptic and joins the "Skeptical Students" cited by William Grey on page 22 of the Autumn issue. ■

Astral Travel?

A little over a year ago, my mother flew to Sydney from Queensland by Compass Airlines. While she was in Sydney, the airline went broke. A couple of months ago, she flew to Sydney by another airline and while she was in Sydney, Compass went broke again. Is this evidence of a strange astral connection between my mother and Compass Airlines or what?

BW

FORUM

I Beg to Differ

Gerald Huber

In *the Skeptic* (Vol 13, No 1, p 48), William Grey makes a good point in showing that determinism is not self refuting (after all, not even the anti-determinist Popper believed this, see *Mind*, 1983 pp103- 4). He nevertheless thinks that determinism is in poor shape because “quantum theory tells us that physical systems don’t have precise states anyway”. But, in fact, quantum mechanics is just as deterministic as classical mechanics. (In practice it is even more so than classical mechanics, because of the linearity of the Schrodinger equation, which excludes the appearance of so-called deterministic chaos.)

The difference is that quantum mechanics happens to be the right deterministic theory. Classical mechanics is so imprecise that it could not even describe some of the most common phenomena without a curious addition to its axioms, namely randomness. Because seemingly random events are so ubiquitous, evolution has provided us with an intuitive concept to help us visualise them. That is to say, we instinctively tend to think that randomness is a part of nature. This is understandable, but still totally invalid. Randomness is a secondary, semi-classical auxiliary construction.

Such auxiliary constructions are often used to make a semi-classical description of a system better fit the facts without resorting to quantum mechanics. Possibly the best known example is the atomic model proposed by Nils Bohr. In this model, the atom is pictured as a little solar system in which the electrons go round the nucleus as the planets go round the sun. This classical model gives rise to the problem that the moving electrons emit radiation, therefore they should slow down and fall into the nucleus. All matter in the universe should long ago have been destroyed by this process. So Bohr saved his model by explicitly forbidding the electrons to emit radiation and therefore to gradually fall into deeper and deeper orbits. He simply postulated that there are a number of given orbits which are the only ones that the electron can occupy.

The classical description plus this discrete-orbit-postulation gives one an excellent model for understanding the emission and absorption of photons

by atoms. For these special processes the model is appropriate, but we must not forget that this is not so for other purposes. It is no substitute for the full, quantum mechanical description (which is deterministic).

Quantum mechanics has greatly supported the case for determinism. For example, it explains in a totally deterministic manner such ‘obviously random’ things as radioactivity.

Nature is, as far as we know, deterministic through and through. The confusion arises from the fact that this determinism cannot be formulated in pseudo-anthropomorphical terms, but only in mathematical language. Thanks to quantum mechanics, determinism is in better shape than ever before in history.

So much for that. I also want to comment on Rafe Champion (ignoring the danger of the rancid yak fat pot). In writing about what is wrong with Popper I’m going to focus on one point.

Popper claims that he has solved the problem of induction by introducing his principle of falsification. The argument goes like this: No matter how many white swans we see, we can never exclude that we will not later encounter a black one. So we are never justified in concluding that all swans are white. Therefore the ‘problem of induction’ is: how can empirical facts be said to be certain? Popper says that as least as soon as we have seen a black swan we are sure that the sentence “All swans are white” is false. So he argues we should substitute a demand for falsification for a demand for (an impossible) verification.

Although there is surely a practical difference between verification and falsification (ie some theories are easier to falsify than to verify and vice versa) there is no basic logical difference between the two. This is evident because to falsify proposition A is equivalent to verifying not-A. This is also clearly seen in the swan example. After we have discovered the black swan, the sentence, “All swans are white” can nevertheless be correct. The black swan might have been the last of his species and may have died in the meanwhile. It might be that we erred in our observation and it was, in fact, not a swan after all, but a yet unknown species, etc. Remember that

the ‘problem of induction’ was that we cannot gain security through induction. That’s true. Neither can we gain security through falsification.

* The principle of induction is: as long as we have only seen white swans, we can firmly *assume* that all swans are white.

* The principle of falsification is: as long as we have not seen a not-white swan, we can firmly *assume* that all swans are white.

Great progress indeed. Popper has not solved the problem of induction as he claims in his “Conjectures and Refutations”; rather he has reformulated it. Let me state clearly that he is not to be chastised for not solving it, but for claiming that he has solved it. I cannot see how Popper’s philosophy is superior to that of David Hume, who Popper accuses of bolstering irrationalism.

I agree with Alan Towsey (p23) that books by John Gribbin have to be read with a healthy portion of scepticism. I also agree that between the blatantly occult books and the few good popular scientific books there is a large wasteland of half-truths and fuzziness. However, he suspects that “in logic, when one comes to an obviously absurd conclusion, one goes back and checks both the premises and the line of reasoning, to find out where one has gone wrong.” (p24)

Indeed, when I first encountered the theorem of Banach and Tarski, it was used as an example in a differential geometry course to demonstrate that the restriction imposed on the operations, which actually do the suspicious transmutation, are not strong enough to

exclude such nonsense - and therefore another set of presuppositions is needed, if you want to describe only physical realisable transmutations. The point is that the nonsense is not in the mathematical theorem, but in the presuppositions. As long as the presuppositions are *stated clearly*, the mathematician has nothing to complain about - no matter how absurd they are. The physicist, of course, is an empiricist and has to think quite differently and Towsey is absolutely correct in pointing out that the authors who he criticises fall down badly on the job of backing up their statements. But it is usually not the mathematicians who “confuse the symbols with the things they stand for”.

Every now and then, people turn up at a mathematics department claiming to have found an algorithm for the trisection of the angle or squaring the circle. They don’t accept that these problems are unsolvable. Isn’t it obvious that there has to be a square with the same area as a circle? Certainly there is one, but it misses the point because the problem consists of producing such a square by *algebraic methods*. Rancid yak fat is too good for them.

Towsey is puzzled by the saying that “the universe is finite but unbounded” and wants to know what it is trying to express. Well, actually this statement is analogous to what is expressed by the sentence, “The surface of the earth is finite but unbounded”. Although the world is finite, you still can’t fall off the edge. The universe also has a finite volume but you can still travel in it around and around.... ■

Popper: A Defence

Bern Gandy

The Summer 92 edition (Vol 12, No 4) gave us the concluding article of Dr Grey’s interesting series on the Paranormal and letters from John Snow and James Gerrand remonstrating with Dr Grey for referring to the views of Popper, Kuhn and others. Both refer to David Stove’s book *Popper and After – Four Modern Irrationalists* as the sort of talisman to ward off anyone who questions the authority of induction, probability, verification etc, as *the* method of science.

James Gerrand questions Dr Grey’s dismissal of verification to discriminate between science and the paranormal, assuring us that most scientists would

consider that the acid test of a scientific claim was “whether it could be verified, whether it could be repeated”. He says the Australian Skeptics has used verification to test the validity of a paranormal claim and “there is still \$30,000 to be won by verification”.

Does this mean that in a Skeptic trial, for say water divining, a lucky contestant could pick the correct locations of the water, collect \$30,000 and prove water divining as a science? Is this an example of induction and verification as *the* method of science?

In “Popper and After”, Stove labels himself an Inductive Probabilist and brands those who do not reason

from that premise as irrational. A great deal of the book is taken up with criticism of words and phrases. Stove neglects to mention, at least where Popper is concerned, the words and terms in question were the subject of protracted arguments with the Logical Positivists of the Vienna Circle and their successors.

For example, Stove states that there has been an 'accumulation' of knowledge in the past 400 years and, as Popper denies this, then Popper is irrational. But Popper has been talking and writing on the 'growth of scientific knowledge' for some 70 years (possibly before Stove was born); and he has provided a clear demarcation of scientific knowledge from pseudoscience and the paranormal. A matter touched on at the end of this letter. Nearly one third of Stove's book is devoted to an analysis of Hume's attack on induction because, according to Stove, that is the key premise of Popper's irrationality. (The fact that Stove ignores Kant as possibly a greater influence on Popper's thinking is interesting). Not surprisingly the outcome of Stove's analysis of Hume is that 'the invalidity of induction is incurable', as Russell, Popper and many others have long recognised. However, Stove says, "the inductive-probabilist still maintains that some inductive arguments are reasonable...he (the inductive probabilist) does not concentrate on the logical feature ...etc". He neglects to inform us what the inductive probabilists does when the inductive arguments are not 'reasonable'.

On this question, it's worth considering the views of scientist Sir Peter Medawar, who took a considerable interest in the history and philosophy of science. In "Pluto's Republic" Medawar devotes several chapters to an analysis of induction and hypothetico-deduction, with particular reference to the views of nineteenth century scientists and philosophers. Medawar's conclusions diverge from those given by Stove. He provides a great deal of evidence supporting the hypothetico-deductive principle advocated by Whewell, 150 years ago and developed by Popper; he agrees with Popper's claim that there is no *the* method of science. (See pp 85-135, "Pluto's Republic", OUP, 1984)

If some of Stove's criticism is valid, it fails to impress because of his obsession with words and meanings, often taken out of context. His approach to philosophy seems close to that of the Logical Positivists of whom Popper wrote, "I regard the ultimate cause of the dissolution of the Vienna Circle and of Logical Positivism as not its various grave mistakes of doctrine (many of which I had pointed out) but a decline of interest in the great

problems; the concentration upon minutia...and especially on the meaning of words; in brief, its scholasticism. This was inherited by its successors in England and the United States." ("Popper, Unended Quest", p 90, Fontana 1980)

As this letter is a result of Dr Grey's articles on the paranormal, it is appropriate to refer to Stove's view of knowledge. When ridiculing Popper's claim that scientific knowledge is tentative or conjectural, Stove makes the statement "To say that something is known, or is an object of knowledge, implies that it is true, and known to be true". ("Popper and After", p 14)

Stove's statement not only involves infinite regress, it also implies certain knowledge and truth. This is easily converted by opponents of science to the charge that science is just another belief system, a dogma or faith. Scientific knowledge is thus equated with knowledge or belief in the paranormal, with religious fundamentalism and the Creation Science movement. One of the ploys of the latter is to agree that creation science is a faith, just as science is a faith - and therefore both should be taught in the science curriculum.

On this issue, Skeptics may recall the famous Arkansas trial in 1981 when creationists attempted to establish legal grounds for Creation Science to be taught alongside science in the State Schools. It was a landmark trial involving creationists, educators and many philosophers and scientists as witnesses.

In his detailed summing up, Judge Overton ruled that Creation Science was in fact a religion and had nothing to do with science. He supported this decision by identifying the essential characteristics of science as:

1. It is guided by natural law.
2. It has to be explained by reference to natural law.
3. It is testable against the empirical world.
4. Its conclusions are tentative, that is, are not necessarily the final words.
5. It is falsifiable. *

While the wording may be woolly, the judge's assessment comes very close to Popperian ideas. No mention of induction, probability, meaning or verification as 'essential characteristics of science'. Judge Overton's finding is the more interesting because the American philosophers and scientists who gave evidence at the trial are more likely to have been logical empiricists, physicalists (both fathered by logical positivism), instrumentalists or pragmatists, rather than Popperians.



Music

Regarding Ben Bensley's questions arising from my article on allegations of satanism and criminality in Heavy Metal (Vol 13, No 1). The questions raised in his letter are really non-sceptical ones, i.e. characteristics of the music and noise. I did not feel that either was relevant to the satanism/criminality/censorship issue.

The issue of noise at concerts is an easy one to comment on. Noise levels produced by any type of concert is simply a health and safety issue that can be measured, investigated and resolved, using standard agreed procedures. Noise is an issue with many recreational activities besides concerts. I would also point out that HM and Rock are not alone in attracting such criticism. One of the main complaints aimed at the Maleny Folk Festival, which is held near Brisbane each January, concerns noise levels inflicted on neighbouring residents.

The question concerning the characteristics of HM and Rock is difficult to answer. The essential problem is that neither category is monolithic and there will be many exceptions to any generalisations one cares to make. In respect of HM, I would certainly refer readers to Deena Weinstein's *Heavy Metal: A Cultural Sociology* (Lexington Books, 1991) who provides a detailed answer as to what constitutes HM. Now to the questions of instrumentation and the use of treble and bass.

Let us consider the instrumentation used in that most extreme form of HM: Death and Doom Metal. Most Death and Doom Metal bands rely on drums and guitars, but there are bands that have

LETTERS

Letters to the editor on any topic of interest to other Skeptics are welcomed. Letters should generally be restricted to no more than two pages of typed script.

added electronic keyboards, organs, violins, French horns, oboes, string sections and female backing vocals. (e.g. Celtic Forest, My Dying Bride, Anathema, Amorphis, Paradise Lost, At The Gates, Nocturnus, Morbid Angel). One record reviewer has even suggested that Wagner and Carl Orff have been more important influences on some of these newer outfits than older Metal bands like Black Sabbath. A case can be fairly easily made that some HM avoids the treble range - although notable exceptions like Dream Theatre exist. Indeed, Doom Metal positively rejoices in the bass range. Most Doom bands have detuned their instruments to such levels that playing them has now become an art in itself. The net result is the slow, bleak musical landscape of Winter or the deep, growling bass grind of My Dying Bride or Paradise Lost. One must bear in mind that the very features of HM that attract outside criticism of it are also the very things that make it attractive to its fans.

Unlike HM, it is now virtually impossible to make similar characterisations of Rock that are in any way meaningful. The creature that we refer to as Rock is now so diverse that one must discuss individual genres (a point that Weinstein stresses). Consider the yawning chasm that stands between such Rock acts as Enya, U2, Laibach, MC Hammer and Frente, for example.

Hopefully, I have provided some sort of answer here. Prof Weinstein's study is compulsory reading for further clarification of most HM issues. Sadly there is no equivalent for other Rock genres, although some Rock encyclopaedias may contain useful information.

**Greg Czechura
Caboolture QLD**

More music

The other night I had a friend over for dinner. She loves Placido Domingo and owns all his albums.

A few days before I had come across a recording by a relatively unknown singer, who sounds very much like the esteemed Mr Domingo, and it was playing when my friend arrived.

Being an expert on Placido Domingo's work, she was surprised to hear what she thought was his voice singing something she had never heard.

"Is it a new release?" she asked enthusiastically as she hurried toward the stereo. She was quite stunned to find that she had been fooled by the voice of an impostor.

Which just goes to demonstrate a variation of an effect well known to all Skeptics. Placebo Domingo can be just as effective as the real thing.

**Steve Hynes
Warrnambool, Victoria.**

From the tenor of these, and other contributions appearing in Forum, it is clear to me that the magazine is due for a name change. Look out for Popper and Puccini, *The Journal of the Cultured Sceptic*. at a news stand near you. **Ed**

Who Dunit?

”Did Jesus arise from the dead?” While researching the question I came across a book, “Secrets of Mount Sinai” by James Bentley, who states that the Gospels were written in this order and at these estimated times after the crucifixion. Mark (35 years); Matthew (50 years); John (60 years); Revelation (60-100 years). I have also run into a few other questions, such as, “Who moved the stone?”

In “Evidence that Requires a Verdict” by Josh McDowell (p 208), Prof Frank Morrison states, “Let us begin by considering first the size and probable character..no doubt...the stone was large and consequently very heavy.” Mark says, “exceeding great”; Matthew, “a great stone”; Peter, “for the stone was great”; Prof Samuel Chandler says, “The women (Mary Magdalene and Mary, mother of Jesus) couldn’t do it, the stone being too large for them to move”. I will attempt to show these points to be incorrect. Matthew says (28:2) “Suddenly there was a violent earthquake; an angel of the Lord came down from heaven and rolled away the stone”. (Who saw this?) Mark says (16:5) “So they entered the tomb..they saw a young man sitting on the right, wearing a white robe” (Note, no mention of an earthquake and only one man). The young man says (16:7) “Fear not, Jesus has risen...Now go and give this message to his disciples”. That seems pretty clear, and remember that Mark wrote from closest to the events, using supposedly eyewitness accounts, yet Matthew, written considerably later, puts in added information. How did he know? Eyewitnesses that were missed 20 years earlier? Then Luke, written

some time after Mark, says (24:3) “So they went in... (24:4)...they stood there puzzled by this, when suddenly two men appeared in bright shining clothes and stood by them..”.

The answer (Mark 15:46) “Then he Joseph (of Arimathea) rolled a large stone across the entrance to the tomb”. Matthew 27:60 says the same; Luke 23:56, “The women went home to prepare spices for the body”. So, it appears the body was not in place behind a “great stone”.

Perhaps Joseph of Arimathea who placed the body and stone also removed the stone? Or perhaps Nicodemus who visited Jesus at night (John 19:39) removed the stone?

All of this has to be speculation on the writers’ part, written years after the event and relying on oral stories. Note also that Matthew contradicts all the other Gospel writers, none of whom mention earthquakes! The contradictions go on and on.

**Ron Bernardi
Boolarra VIC**

God is a Bloke!

I say to Pearl Eisen (Letters, Vol 13, No 1) I know there is a god! The Hindus say he is a creator/destroyer, the Judeo/Christians say he created man in his own image. Professors Plimer and Davies say science and religion (i.e. god) are moving closer together. I say god is a male.

How do I know? Well, did not this creator/destroyer start the universe with a big bang and have not boys and men, cast in his image, been creating big bangs ever since? Stones on flints, fireworks, bombs, rockets, the atom bomb and god knows what next! Another universe perhaps?

Well, let’s hope it’s not as violent

as this one. So much of it is morally indefensible from my female viewpoint. Let’s have some forward ethical planning this time, not just a disastrous and dangerous explosion leading ‘inevitably’ to life forms based on a pyramid of cruel parasitism and suffering. What say all forms of life use the elements directly, without killing, stealing and devouring energy from other life forms?

This god has much to answer for. Science should beware of associating with him.

Denise White
Dianella WA

Quantum Sales

I am a little confused by your President’s assertion (Vol 12, No 4 p 46) that “Australian Skeptics takes no position whatever on religion”, when it is marketing books called “Then Fall Jesus” and “To Hell With God”. According to the reviews, neither of these is concerned with scientifically testable claims of the sort made by creationists. Your decision to market these books, and not pro-religious ones, seems to me to indicate a fairly definite position. Please would you explain.

**(Dr) Anthony Garrett
Grantchester, Cambridge UK**

As a theoretical physicist, you will be familiar with Heisenberg’s Uncertainty Principle, which states, as I understand it, that you can determine either the position or the velocity of a particle, but not both. It’s the same with Harry Edwards’ Commercial Principle - the books are selling quickly, so we cannot determine our position. Does that solve your dilemma? **BW**

Astrology

I too have received the mail order promotion material from *Astrology Today*. I agree with Harry Edwards in your edition (Vol 12, No 4) that this business advertises very dubious claims. But you are illogical.

1. You need to differentiate between the awful advertising and the astrology;

2. The special offers have no direct bearing on astrology, dreadful as they are. Many firms advertise like this who are not to do with astrology;

3. You act as if discrediting the antics of this strange outfit helps to discredit the whole art of astrology. This is as logical as writing off the whole of allopathic medicine on the grounds that a newspaper ad for spot cream makes exaggerated claims.

Your magazine often publishes similarly illogically conceived research which always puzzles me.

Nevertheless I believe firmly in astrology and as before I would recommend Alan Oken as an author to start with if you wish to understand astrology rather than this schoolboy attitude of finding dodgy examples to poke fun at.

Incidentally, *Astrology Today's* actual printouts are probably from a reputable astro-computer programme supplier and are quite cheap and as long as the operator is efficient and should be as accurate as the birth time given.

**Angie Lyndon
Fremantle WA**

I hardly know where to begin in responding to this letter. Harry's article did not set out in this instance to expose the astrology, but the associated dubious claims made for the products that were offered as 'free gifts'. He would hardly need to expose astrology as I doubt that there

is another pseudoscientific belief, with the possible exception of creation 'science', that has been so thoroughly investigated and exposed for a sham, than has astrology.

For a most incisive commentary on astrology, I commend "Does Astrology Need to be True?" Part 1 (*Skeptical Inquirer*, Winter 1986-87) and Part 2 (SI, Spring 1987). Both of these articles have been collected in *The Hundredth Monkey* (Prometheus Books, Buffalo, 1991). I also commend a paper "A double blind test of astrology" by Shaun Carlson (*Nature*, 318:419-423, 5 December, 1985), as well as a number of articles in *the Skeptic*, which can be found in the Index printed in this and the previous issue. Far from being 'schoolboy' in attitude, these articles ask questions that demand answers from astrologers, if they hope to be taken seriously.

Ed

Anorexia

Popular magazines, of the sort mentioned by Barry Williams in his address "From the President" (Vol 13, No 1), are permeated with internal contradictions of an equally, if not more, dangerous sort than the hodge-podge of -mancys and -ologies that indirectly contributed to the deaths of the three women that Barry discussed.

In the *Woman's Day* issue of January 18, there is a major article on the near-death of a TV 'personality' through anorexia nervosa, a disorder that results in the death of *thousands* of people in the western world, every year. Not only is the rest of the magazine full of the usual array of patently anorexic models, being paid to reinforce the simian idea that 'skeletal is sexy';

but, in flat contradiction to the "isn't this dreadful" stance of the foregoing article, there is a series of interviews with other TV 'personalities' in which their 'secrets for staying thin' (read, living in a state of near-death) are 'revealed'.

Like the "dozens of pages of spurious advice" Barry referred to, this sort of 'journalism' "encourage[s] the sort of [distorted] view of the world that led these women to their deaths".

I might add, that the cartoon on page 30 of the same issue is a good example, even in the context, of the sort of gender-stereotyping and trivialisation of women that creates and feeds insecurities, and so gives strength to the leaches of the appearance-industry.

**Patrick Spedding
Sandy Bay TAS**

Greek

Oh, how could you? I refer to the article *The Sceptical Student* - 1992 (Vol 13, No 1 p 22). I quote "Scepticism is derived from the Latin word 'Skeptikos' which means to doubt". Conclusion correct - premise false.

Σκεπτικοξ is a Greek word - not Latin as stated. Take it from one who has taught Ancient Greek for 18 years. Also note the final sigma 'ξ' - not 'σ' as recorded in a previous issue. 'σ' is only a primary and medial, 'ξ' is final. Hence Σκεπτικοξ..

**Lorraine R Delaney
Ettalong Beach NSW**

It wasn't us who said Scepticism is derived from a Latin word, Lorraine, it was one of William Grey's students, as were all the other examples in the article. As for ξ or σ, it is all Γρεεκ to me.

Ed

Free Will

I was amazed by the reactionary responses to Danny Witmer's letters stating simply a position on the mind and free will. The responses come from both the dualists, to whom only paranormal explanations are acceptable, and from the philosophers who cannot progress past epistemology. The truth is extremely simple, and has long been available.

The central question seems to be the nature of the mind. As every process or phenomenon must have a mechanism, or means by which it operates, then the choices available for the mind can lie in two classes:

- (a) physical processes, which are studied by science, and
- (b) non-physical processes.

Events in the second category have never been observed, and there is no more evidence for them than for unicorns or the tooth fairy. Moreover, the forces known to science provide a "complete" description of the behaviour of matter, so non-physical processes could not influence our actions even should they exist. Thus modern physics rules out spiritual entities independent of the body, such as the "soul", and the "psychons" of Sir John Eccles.

The first category fares rather better. Let us review the evidence identifying mental functions with electrochemical processes of the brain.

Particular regions of the brain can now be observed or influenced using PET; localised anaesthesia; electrical measurement, stimulation or paralysis; effect of injury or disease etc. In this way, connections have been made between particular regions and physical processes of the brain and mental capabilities including visual perception, hearing, language, feeling, memory, spatial

reasoning, mathematics etc.

The regions and conditions required for consciousness are also well known. Our awareness is totally dependent on supplies of nutrients and oxygen. Drugs and alcohol muddle our reasoning abilities and our subjective awareness of self, not just our sensory perceptions. Perhaps the dualists have never fainted or got drunk.

Sensory inputs to babies and chickens have produced observable changes to brain structure, showing that learning is a physical process. An experimental means of "Timing a Thought" was devised by Libet, which showed brain voltages arising 0.4 seconds *before* the subject was aware of deciding to initiate spontaneous actions. This indicates that the conscious thought originated in a process, rather than caused it.

In summary, the evidence for the mind being solely brain activity is overwhelming and continues to grow. People who reject this as demeaning, should consider that the beauty experienced in a symphony is not diminished through our discovering that it is merely a time-varying sound pressure level.

Previous correspondents have assumed materialism and determinism are linked. They have argued that if mental processes have a physical mechanism, then our actions must be preordained. They even leap to an anti-punishment stance. I will attempt to show the fallacy of this reasoning.

Firstly, consider a chess-playing computer, with its "pointer" darting among complex layers of algorithms, assessing strategies based on hypothetical "world-models" of how the game might progress, and fine tuning its connections as it learns (a "neural network" no less). To an observer, the process is not

deterministic, in that he cannot generally tell what move it will make. Now add random processes, which may for example come from pseudorandom generators, quantum uncertainties, amplified thermal noise, or chaotic events. Even the writer of such a (real) programme cannot, even in principle, determine every move.

Finally, consider the complexities multiplied a million times, together with the variety of inputs and outputs including language. Such a machine would have no trouble displaying all the intricacies of human and animal behaviour. We have materialism without determinism.

If the machine claims to have free will, which is of course a purely subjective matter, then we are unable to refute it. Should it commit an antisocial action, then punishment may be justified so that its learning circuits tend away from repeating such an action. Similar machines observing may adjust their world model and also be deterred.

As for my own experience, I reached these conclusions at about age 17, during my science education. My thoughts were private, as such things could not be discussed in a Christian environment. At university I was delighted to find many others who were also willing to face the evidence. For the following 26 years, the ongoing stream of research has supplied continuing confirmation. David Denton's "The Pinnacle of Life" is an excellent summary.

So the real mystery is why some people, including correspondents to this magazine, seek a fictitious and impossible mechanism for the human mind and free will, disregarding the perfectly satisfactory explanation which is indicated by all the evidence.

Ian R Bryce
Rozelle NSW

A (sic) letter

You wanna watch it, you lot - glass houses and all that y'know.

Having ripped a chunk off the 38 page "How to Manual" for its spelling errors (Vol 13, No 1, p 19), you then proceed to some sics of your own, like:

p 20 - acheive (sic), mult-tiered (sic);

p 27 - off (sic) - should be of;

p 29 and p 46 - you seem to be unable to choose - premisses or premises;

p 43 - principle (sic) cause;

p 46 - exists (sic) - should be exist.

Daryl Haslam
Glen Iris VIC

Please accept one or more of the following excuses:

1. So you were the subscriber that received the special Deliberate Mistake copy of Vol 13 No 1, Daryl.

2. Unfortunately our proof reader, a Mr Tim Mendham, was unavoidably detained in Kuala Lumpur at the relevant time.

3. Your complaint derives from false premisses.

4. I feel sic.

Ed

Technique

Mr Schmidt has erred ("Soul Food" *the Skeptic*, Vol 12, No 4). He writes concerning the Alexander Technique, "Technique for what? Chicken sexing?...Underwater Ludo?...Conquering the known world?...Who knows?"

In asking "Who knows?", I take it that he does not know what the AT is about. Has he tried to find out?

I took some AT classes in the hope of curing a chronic neck pain problem. 'Conventional' medication

from a doctor treated the symptoms. So did physiotherapy. I was advised by such professionals to try the Alexander Technique and after reading a book by a teacher of the AT, I was convinced that it was not just another New Age philosophy.

Admittedly it is a little difficult to categorise what the AT actually is. It has to do with good (spinal) posture and movement of the body. One of its main doctrines is that we (westerners) are too concerned with achieving the goal and think little about the process of getting there - such as sitting down into a chair. We take for granted that all that matters is being seated. We don't realise what repetitive 'slumps' into a chair could be doing to our vertebrae.

If anything, the Alexander Technique favours a holistic approach to the person rather than a dualism of mind (or whatever it is) and body. Maybe this body to mind interactionism makes the AT misunderstood.

But I do not attempt to refute Mr Schmidt just by appealing to my experience, but also by pointing to his poor methodology. So what if a strangely titled book is found in the New Age section of a library. That classification is not enough to reject it *a priori*. This is what Mr Schmidt does. I take it then that he is a dogmatic sceptic. Please be fairer. My pain in the neck has been cured.

Robert Anderson
Berowra NSW

Genesis

John McKeon's article "Which Genesis" (Vol 13, No 1) accuses creationists of misrepresenting scientific argument which does not favour creation, whilst doing a fair job of misrepresenting the narrative of Genesis chapters 1 and 2.

Chapter 2 begins as a continuous narrative dealing specifically with the creation of Eden and its occupants, having only briefly touched on the creation of 'man' (mankind) in the previous chapter.

No wonder Mr McKeon sees conflict between 1:6 and 2:5, since the former speaks of heaven (firmament AV) and the latter of earth. Furthermore, 2:5-6 is clearly dealing with vapour watering, and most certainly not drought.

It is indeed the NIV translation which conveys the picture of a land without vegetation, and it is the old KJV which gives the more harmonious understanding of plants created before they grew from seed.

If creationists sometimes do misrepresent non-creationist writings as badly as this, then Mr McKeon's point is well made.

Malcolm Edwards
Mooroolbark VIC

What do you mean "sometimes"? **Ed**

Proof!

Ah Ha! I have you! Radio National in Hobart, at 9.00am on Friday, March 19, 1993, reported that a scientific survey had shown that any given person was up to 21% more likely to have a heart attack on his or her birthday than on any other day. What more devastating confirmation could you imagine of the validity of astrology? Please send me my \$30,000. No cheques please; cash only, in old banknotes. Any obscure South American currency will do.

Prof OY Knott
Richmond TAS

The small print of our challenge says that we do not pay people who use pseudonyms. Genuine nymms are OK. **Ed**

Coming up

About our Authors

In the next issue we will publish the transcript of an interview between Professor Ian Plimer and Professor Paul Davies, part of which was broadcast on the Victorian Skeptics *Liars' Club* radio show on 3RRR.

In this article, two of Australia's most distinguished and controversial scientists discuss their views about life, the universe and everything. We are sure that our readers will find this article to be among the most stimulating and informative we have ever published.

We already have a number of items for our next issue, but this should not deter our readers from sending us their contributions. After all, it is your magazine and we wish to publish your views. There is no 'party line' in Australian Skeptics, although articles should address our main areas of concern, the paranormal and pseudoscience. Letters and contributions to Forum have fewer constraints and can address a wider range of topics, but should generally conform to our aims. The other main criteria are that the contributions be understandable by our scientifically literate, but not necessarily scientifically trained, audience and our pathological aversion to legal proceedings.

To assist in our production of *the Skeptic* we ask that, where possible, longer contributions be sent on a 5.25 or 3.25 inch disc, in text format, or via e-mail to skeptics @ spot.tt.sw.oz.au. Typewritten contributions are fine if not too long and handwritten contributions are acceptable providing they are both legible and short.

Dr Stephen Basser is a medical practitioner and administrator and is the convenor of the Australian Committee on Science and Health.

Harry Edwards is really a sensitive new age guy (SNAG). The only reason we keep him on as Secretary is that he owns the pencil.

Bern Gandy is retired and is almost as great a fan of Karl Popper as is Rafe Champion.

James Gerrand, aviation consultant, was the founding National Secretary of Australian Skeptics. He is now a Life Member.

David Hagar, teacher, musician and American, though not necessarily in that order, utterly denies that he is in any way horrible.

Gerald Huber is a member of GWUP, the German Skeptics group. If we were to spell that out, it would take an extra page.

Steve Hynes is a journalist. He lives in an energy vortex, has visited Byron Bay, Glastonbury and Sedona, yet the only effect he can produce in nearby diviners is severe irritation.

Peter Johnson, cartoonist, lives in Adelaide and claims that he still has not visited Atlantis.

Adam Joseph, multi-media personality, consultant and alderentity, is a member of the Victorian committee.

Dr Andrew Parle, national committee member, is a physicist and recently became a father for the first time. We have no reason to believe that there is a causal link between these facts.

Danny Varney is the Western Australian Secretary of Australian Skeptics. He is a retired magician.

Ray Watson is a freelance writer about whom very little is known, at least by the writer of this column.

Sir Jim R Wallaby is prepared to deny on oath that he had anything at all to do with introducing Ian Plimer to Australian Skeptics. Legal action is pending.

Barry Williams is incensed that the Sydney Eisteddfod has been renamed the Sydney Singing and Dancing Competition or some such. Whatever happened to multiculturalism, he wants to know?

X, our mystery cartoonist (see p 15) refuses to allow us to reveal her secret identity. All we know is that she lives in Victoria, which seems to be as good a reason as any for remaining incognito.