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Teaching Evolution to the Alienated

Presenting the evidence just isn't enough

Bill Peddie

IN HIS book Unpopular Essays, Bertrand Russell claims that although he was fully aware of the notion that the human is a rational animal, despite years of searching for supporting evidence for that assertion, he could find none. For those hoping to batter the creationist opponents of evolution into submission with logical rational argument, Bertrand Russell's comment should at the very least sound a note of caution.

As a second year student in zoology at Canterbury University, more years ago than I care to remember, I went armed with my genetics evolution notes to a lecture which had the intriguing title Darwin Debunked. The lecturer was the Roman catholic chaplain and Thomist scholar, Father George Duggan - and his talk even today would stand as a good example of creation science at its thoughtful best. What puzzled me was how, after his talk, despite having the zoologists and geologists in the audience tear his arguments asunder with devastating counter examples, this Rhodes scholar and trained Catholic thinker was totally unmoved.

It was much later that I gradually came to realise that where matters of faith and cultural belief are concerned, there is too much at stake for conventional

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A GOOD TIME WAS HAD BY ALL

IT'S ALL over - the cheering and clapping are fading and the crowds have all returned home, with thoughts about the next one. I am, of course, not talking about that sporting thing on the TV from across the Ditch, but the annual Skeptics' Conference where, for a full two days, passions soared and speakers spoke.

Keynote speaker was Dr David Marks, who helped found the group 15 years ago and has since moved to England. Also from across the seas was Dr Ian Plimer who spoke to the conference's theme, Evolution, Creationism and Education. For those poor souls who were unable to get down to Dunedin, the Skeptic will run these addresses in future issues.

The Dunedin conference also officially marked the stepping down of another founding member, Professor Bernard Howard.

Prof. Howard has been treasurer since a fateful summer afternoon in 1986 when he arrived at the first meeting of what was to become the NZCSICOP a few minutes late, and found himself appointed mere seconds after taking his seat. The NZ Skeptics is an unusual group - I'm often asked what do we do and where do we do it. Other than the annual conference we're rather a loose organisation, made up of very individual individuals. But we are fortunate indeed in the calibre of many who choose to be involved and Bernard Howard's contribution has been priceless in helping form what we are and how we go about it. I wish I had been at the Dunedin conference to add my hands to the applause when the presentation took place. It would have been a special moment.

The conference did receive a certain amount of coverage in the papers - from pieces on Ian Plimer's and David Marks's talks to the announcement of the Bent Spoon Award going to Wellington Hospital (about 60 nurses have been through a Healing Touch training programme which teaches the basics of energy healing).

On other matters, it was interesting following the circus surrounding the visit of American psychologist Professor Elizabeth Loftus. As most will know, Prof. Loftus has argued since 1993 that it is unlikely people can suppress memories of a traumatic event and later 'recover' them. She gave the keynote address at the NZ Psychological Society's conference in Hamilton in late August but her presence provoked some interesting reactions from colleagues. Before she even set foot in the country Dr John Read resigned from his role as the society's director of scientific affairs and spoke out against her on Kim Hill's programme on National Radio. And during the address itself psychologists handed out anti-Loftus material to delegates attending the lecture. Loftus said she didn't wear her best jacket when she spoke on the Waikato campus - fear of flying tomatoes. Loftus said NZ was four or five years behind the States in recognising the need for scepticism on the issue. "If NZ follows the US and repealed limitations on adults suing for abuse suffered as a child," she says, "then NZ therapists will have plenty to worry about."

Annette.

Contributions

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Letters for the Forum may be edited as space requires - up to 250 words is preferred. Please indicate the publication and date of all clippings for the Newsfront.

Material supplied by email or IBM-compatible disk is appreciated.

argument to produce a shift in position.

Let me illustrate with three examples.

On several occasions, Jehovah's Witnesses have arrived at my door and unsuspectingly offered me literature which I have previously checked out for myself. The pattern has usually been that sometime later they escape in disarray, I suspect thankfully, promising to return with the answers to the questions raised. They do not return - and yet it is a hollow victory because my visitors can be seen with the same neat little sports jackets, the same briefcases no doubt still containing the same flawed literature; and wearing the same smile of the truly saved, walking up the front paths of houses in the same neighbourhood the very next weekend. One-on-one tutorial teaching does not necessarily lead to total success.

My second example is from a transcript from an interview I had with a seventh form Polynesian pupil. The transcript included the following exchange.

Me: How old do you think the earth is?

Pupil: Six thousand years old.

Me: And the universe?

Pupil: The same.

Me: If someone was to give you very strong evidence that the world was older than that - and that for example there was geological evidence there was no flood of the size that would cover the world - how would you react?

Pupil: Evidence like what?

Me: Annual tree ring data going back seven or eight thousand years for the bristlecone pine - examples of annual deposits of ice layers which when counted give values into many thousands of years, fossils which from every test appear very ancient and radioactive dating of rocks leading to estimates of not millions but billions of years: - those sorts of things for the age of the earth. And then for Noah's flood - the fact that the scientists have calculated that you would need to have three or four times the total amount of water in the sea, atmosphere and under the earth in order to cover the highest mountains like Mount Everest.

"To the extent he believes in evolution, he is not a Maori."

Pupil: (there was a pause, then...) Well, I would have to say that God is greater than that. But I am glad you told me about that - because if someone had hit me with that on the street - if I was, say witnessing - I would have been stuck dumb. I don't know about that sort of thing. Now I can get ready with an answer.

Me: But it wouldn't change what you think about the age of the Earth.

Pupil: No!

My third example of another attempt to educate those with a built-in resistance, comes from a few years ago by courtesy of physiologist professor Roger Short of Monash University. After discovering 27 percent of his first year medical students held a creationist view, he gave eight lessons on evolution to his class and retested them. Despite having completed an assignment on the subject matter of the lectures he found no change in the creationist views.

What crystallised my thinking on the nature of the problem was an interview I did when I was a few months into my PhD study into the nature of the creation/evolution debate. In the course of this interview a Maori studies lecturer made the comment that the ultimate in alienation would be to be a Maori evolutionist.

When I protested this with the counter example of Rangi Walker's son who is a well known zoologist and one who as far as I know still accepts a concept of evolution my informant's reply was instructive.

"To the extent he believes in evolution he is not a Maori."

Group Identity

This reply suggests a way of looking at the debate. For many, the position taken on the debate is more one of identity with a group who are associated with a viewpoint than it is with a rationally constructed, evidence based position. I am not even convinced that this is itself entirely irrational behaviour. After all if your family - your whanau - has a discernible set of characterising beliefs, and you think it is important to identify with that family, that religion, that culture, is it simply a question of logical analysis to cut yourself off from the group by questioning what you believe to be one of its underlying major tenets? In today's politically correct age it is ironic that those who bay for the creationist blood of fundamentalist Christians fall uncomfortably silent when asked to consider the

creationism so much part of the thinking of many Maori and Polynesians.

Not the Desired Effect

As already stated, the first surprise for the teacher with creationist pupils of the more extreme sort, is that the usual classroom rehearsing of a few well chosen facts supporting evolution does not have the desired effect on those alienated by their belief system. The second problem is that such is the fervour of the strict creationist camp that their leaders have taken the trouble to assemble the most detailed and documented case which is both technical in flavour and at least superficially plausible. They will, for example, quote figures to cast doubt as to the reliability of radioactive decay figures, talk glibly about astrophysicists' problems with the speed of light, and quote examples where apparently old rocks show signs of recent formation. And they have amongst their number some surprisingly well educated and well qualified supporters. It is true that they have few who are actually doing research or who are specialists in the areas they quote, but criticising them for basing their case on much that is second hand and interpreting science in amateur ways is not the way to deliver the knockout punch.

With some degree of embarrassment, might I dare suggest that familiarity with research and logical analysis may not even always be a central plank of the acquired wisdom of the proevolutionary camp. After all even amongst the Skeptics I am prepared to guess that there are some who would accept the validity of radiochemical dating of rocks - and yet perhaps never have handled a Geiger counter - or without having the faintest idea as to the relative merits, limitations and likely error bars of carbon dating or of Potassium-Argon dating, Uranium Lead dating or fission track analysis. There would be those who accept the idea of pre-hominid ancestors without having seen the fossil collections - or even without having the faintest idea of how the process of identification is made.

Methods of Study

Let's face it - a huge percentage of our knowledge comes from received, predigested knowledge. The sources of knowledge for the "creation scientist" are admittedly different but the methods of study are proabably sufficiently similar to explain why apparently otherwise well educated people can be found sincerely claiming that the Earth is of the order of six thousand years old. It is important to remember that this hard-won so called knowledge is based on hours of study of a different literature and unquestioning acceptance of the textbook assertions of such worthies as Duane Gish, Henry Morris, Ken Ham or for that matter the apparently authoritative and profusely referenced claims by the anonymous authors of those nicely printed Watchtower publications.

Unfortunately, although in my view science teachers may know their conventional science in their subject disciplines from university they are ill prepared to identify the characteristics or for that matter the dangers of the pseudoscience of creationism as it is sometimes introduced into our schools. For example I received an extraordinary document through the mail the other day entitled 'Understanding The Young Earth Model'. Yes I have spotted plenty of serious errors and misinterpretations of mainstream science in this publication which incidentally is called a 'science teacher resource booklet'. But you have to remember I have a relatively recent PhD in the topic. A first encounter with the claims - especially by one unfamiliar with the quoted sources may well produce understandable confusion. Many of our science teachers have no geology in their degrees and it is possible to get right through a university science course without

coming up against the raft of evidence which supports such things as an acceptance of the ancient past for the universe and the old Earth.

They are not to know that the PhD in the qualifications cited by an author come from the same university that Ian Plimer once told me had, for the not inconsiderable sum of US$19, inadvertently awarded a Doctor of Divinity to the slobbery blue heeler that belonged to his next door neighbour. Unless they are very well read, nor are the teachers likely to know which of the creationist assertions are founded on thoroughly discredited experiments or total misrepresentations of the literature.

Human and Dinosaur Footprints

For example a few years ago impressions of human footprints were reported as being found beside dinosaur footprints in the Paluxy River area in Texas. The creation science case was not helped when one of the creation science assistants reported that he had witnessed the Reverend Dr Carl Baugh carving out some new fossil human footprints by torchlight. The Paluxy River findings of human footprints are now considered of no consequence by the paleontologists but they still surface in creationist literature.

In a number of instances I encountered evidence of what is at worst deliberate intellectual dishonesty or at best extremely sloppy and ill-informed research techniques on the part of the leading creationists. In one of his recent lectures in Auckland, John MacKay supported his case by quoting from a book by Derek Ager entitled The New Catastrophism. He underlined the significance of Ager's comments by stressing the authority of the book, posing a rhetorical qustion: "Who of you has had a book published by Oxford University Press?" Unfortunately for Mackay, the copy in the University of Auckland (which incidentally claims to be published by the Cambridge University Press) has a preface.

Let's face it - a huge percentage of our knowledge comes from received, predigested knowledge.

There in bold type is the disclaimer -

'...in view of the misuse my words have been put to in the past, I wish to say that nothing in this book should be taken out of context and thought in any way to support the views of the 'creationist,' who I refuse to call 'scientific'.'

The existence of creationist influences in our schools raises some fundamental questions about the role of the school as an agent of society. If you are teaching in a comfortable white middle class suburb away from a bible belt enclave or marae the worst you are likely to encounter is a weekend missionary visit offering you a chance for spiritual enlightenment. If you are teaching at the type of school which demands a signature attesting a fundamentalist acceptance of bible literalism as a prerequisite for employment - or you are teaching in an area where the parental customer base represents unquestioning acceptance of Adam and Eve and the Noah flood and the board of trustees is known to have a bible literalist or creationist stance, it is legitimate to question how far you should take heed of in loco parentis. For me with my training in science - and a formal higher degree in science education with a focus on this very debate, there is normally no contest. I am totally convinced in the case for evolution. I personally find the evidence overwhelming as I believe is the case for believing the Earth was created vastly earlier than 6000 years ago. In making room for a discussion of the extreme form of 'creation science' it is a little like being asked to condone those wishing to waste my pupils time with a case for the flat Earth, fake cures for cancer or career guidance by astrology, I do however concede that since we have to teach pupils as they are rather than as they should be, the probability they have either already encountered or at least are likely to encounter this set of beliefs make it more reasonable to tackle the problem. Since they have to learn what constitutes pseudoscience as well as good science there is also a case for arguing for creation science as a case study.

I also believe that as a science teacher I have a responsibility to fairly represent mainstream science views and attitudes and not imply a justifiable case where none exists. But when it comes to deciding - as I had to decide a few years ago - whether or not I should share my understanding with four Exclusive Brethren pupils when I knew that the penalty for heresy for them might be being ostracised by their family, I was less confident. The point is that even if the teacher sees

'creation science' as being almost devoid of redeeming features, I believe we owe pupils and their families the right to choose their own religion and own place in society. I must also stress that for many teachers the debate is likely to be a non-issue. It is really only in those schools where the contributing community contains a significant number of creationists or vehement creationists intent on spreading their message in the schools that there is likely to be an issue for the teacher.

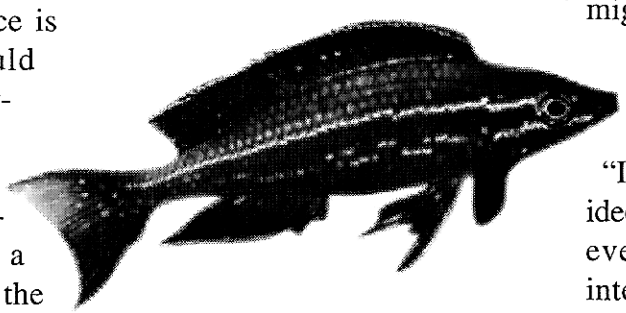
The regulations governing what happens in schools are of little help. While the education act safeguards the right of university lecturers to raise controversial issues and question cherished beliefs (with the possible exception of revisionist histories of the holocaust) there is no such clear direction for teachers at the secondary level.

What then should the teacher do to deal with someone offering creationist literature to the school or offering to come in and share creationist assertions with his or her pupils.

My main word of advice is that the teachers should make themselves thoroughly familiar with the nature of the literature. I first entered the arena assuming it was just a question of assembling the conventional evidence a la the prescription and thereby overwhelm the counter case. I rapidly discovered that there is a difference between evidence derived from a pseudoscience and that of the more conventional scientific literature. I find it helpful to my students to teach them how to read such evidence critically. The way I now use such material in the classroom is to demonstrate how science can be misrepresented.

I also believe that as teachers we should be sensitive to the fact that we may be dealing here with matters of religious or cultural belief and avoid direct confrontation where it is possible to do so. My personal answer is to introduce some geological and astronomical principles early on to my pupils and leave the evolution of man till much later in the piece. My own preferred strategy is to show a variety of simple methods for establishing the world is very old and inviting the pupils to draw their own conclusions as well as conveying the majority point of view. This might include showing photographs of varves, annual and daily ring formation in coral deposits, speed of light data from distant stars and galaxies and a highly simplified account of radioactive dating.

I give examples of variation in species, then examples of observed speciation. In the senior school I use the examples of new species including the cichlid



fishes, Primula kewensis and the ring species of the Black-backed Gulls and Herring Gulls.

I find even fifth form pupils are fascinated by skeleton photos of related species and hominid and prehominid fossils.

I also give simplified accounts of protolife experiments such as those of Urey and Miller - and the Fox experiments.

After this I believe the pupils are more ready to make some of their own judgements about evolution when it is formally studied.

I also think that whatever the religious belief of the teacher it does no harm to point out that most mainstream religious believers now accept evolution. If I am asked I make no secret of the fact that I am a lay preacher in the Methodist church and have no problems with reconciling my interpretation of the bible with my scientific understanding of an ancient Earth and processes of evolution.

I think that whatever the constraints of the exam prescription, as science teachers my colleagues and I have an obligation to teach the difference between pseudo science and science. Where creation science is helpful is to highlight for senior pupils how science can be misrepresented.

Finally rather than lament the entanglement of science, education and entrenched world view we might do worse than allow the last word to John C Greene.

"I am convinced that science, ideology and world view will forever be interwined and interacting. As a citizen concerned for the welfare of science and of mankind generally, however, I cannot help but hope that scientists will recognise where science ends and other things begin."

Dr Bill Peddie is a science teacher at Mangere College.

Skeptics 2000 ...or should that be 6004?

Wherein intrepid ace reporter Vicki Hyde spills the beans on what Skeptics get up to at their annual meetings...

Perhaps Someone was trying to tell us something – why else would we end up with a flooded-out bridge and a very long bus ride courtesy of TranzRail, ending 40 minutes or so from Dunedin where we waited for an hour on the Palmerston rail platform for an errant train to eventually deliver us into the sunny south.....

Ah well, all was mended by increasing numbers of familiar faces as we got closer to the venue. At the risk of treading on toes, there's an almost evangelical fervour in the aura given off by Skeptics en masse. People seem to be sooo appreciative of finding themselves in a room of like-minded people, whether they hail from farms, factories or ivory towers.

As always, the defining characteristic of the conference had to be the general good humour with which we encountered the many and varied aspects of human nature and the general sense of wonder at the world around us. That magic and mystery was helped along the first night by David Marks, one of our esteemed founders who had travelled back from the UK to be amongst us. David demonstrated that he was more than just a professor of psychology with the now-infamous spoon bending and mindreading routines that he learnt at Uri Geller's knee.

As well as opening the conference, David was the last speaker, leading us through autobiographical notes as he revisited the heady days of directly challenging The Amazing Kreskin and Uri Geller. (Otago University clearly has a long-standing support role in skepticism as David was funded to go to Wellington to interview Geller). And here's a factoid worth remembering, so beautifully explained by David that I've had to share it with everyone I've met lately:

"The chances are one-in-a-million. Isn't that spooky??"

Assume 100 events make up an average day in your life: answering the phone, reading an item in the paper, hearing a song on the radio etc. (there are arguably many many more, but let's keep the maths simple).

In one day, there are 4,950 possible pairings of those events.

In 10 years, you build up 18 million such pairings.

So in every decade, you should have 18 "one-in-a-million" things happen to you – almost two a year.

So it's hardly surprising that you should hear from your childhood friend just after you'd come across an old photograph of you together; or that your dream of a car accident should come true.

It gets better – give yourself say a 10-day span for your "one-in-a-million" event ("and then the next week it happened..."). In ten years, you'll have 182 spooky coincidences.

Isn't maths fun?!

Saturday may have sounded a little academic for those reading the programme – a whole day of debate and discussion on creationism and evolution. If you'd come along prepared to laugh indulgently at those silly people in Kansas, Bill Peddie (HOD science at Mangere College) soon had you very aware that it is an issue for Kiwis too, with teachers in some schools facing ethical dilemmas in teaching a science curriculum which goes against the religious or cultural values of their students.

Barbara Benson (HOD Science and the Dunedin College of Education) pointed out that we do have a requirement for teaching the scientific method in our science curriculum. For those who hadn't heard of it (and I hadn't despite being in the relatively rare position of actually having read through most of the science curriculum documentation that passes my desk!), it comes under Making Sense of the Nature of Science and its Relationship to Technology. I suspect that it is quietly put to one side in most classrooms in preference for doing something easy like growing seeds or making hokey pokey....

We had our own tour through evolutionary science, with slides of Archaeopteryx from Warwick Don, real fossil whales courtesy of Ewan Fordyce and the skulls of far-distant ancestors of Jules Keiser. Anyone who wants to marvel at the wonders of creation should study how ear bones came about – you have to shake your head at the unplanned nature of it all. Or, if you were one of the lucky ones to brave the Dunedin downpour, you got to see the glories of the Geology Department basement. There is a story to be told in rock if we have but the chance (and the funding) to read it. Magnificent stuff.

For me, the one image which really sticks in my mind from the excellent morning's presentations has to be an ancient set of footprints, captured forever in mudstone, of a mother and tiny child walking side by side one afternoon thousands and thousands of years ago. I'll never walk my kids along the beach again without thinking of that small ancestor of ours and wondering what her life was like. There's far more wonder in that than in any conceit of Creation.

Ian Plimer summed up the whole debate rather succinctly when he declared science to be a way of looking at the world around us, while religion looks at the world within us. Those who would try to warp one to fit the other are little short of fraudsters, whether they recognise it or no. The Young Earth creationists, who contend that the Earth really is only a few thousand years old, are intellectually dishonest –and many Christians would argue spiritually dishonest as well – in their attempts to twist facts and make God jump through hoops.

Ian is a consummate communicator, as anyone who went to the Saturday Dinner will tell you. A chance remark from Bob Brockie saw Ian stand up and give a totally extempore tour through the last 4.5 billion years of creation. It was a literal tour de force which left many of us awestruck at the sheer scope of Nature in all her diversity and perversity. Geologists see things on a different timescale to most of us and, for an all too brief hour, we were privileged to view the world through a different set of eyes.

Some eyes were more than a little misty that evening at the tribute we were able to pay our out-going (out-standing!) Secretary, Bernard Howard. Bernard has shepherded the Skeptics since its foundation, and his tact and diplomacy have been much appreciated by the more volatile committee members over the years, so it was wonderful to be able to thank him for all he has done for the organisation. We had arranged for a small addition to Bernard's bookshelf – copies of classic works signed by leading skeptics on the international scene who were kind enough to record their appreciation for Bernard's hard work over the years.

And on to Sunday with traditional Skeptic fare: urban legends, UFOs, mass delusions and encounters with Uri Geller. Robert Pollack provided the sobering thought that urban legends don't die as a result of debunking, you have to wait until technology or society changes before they become obsolete.

Bill Ireland's talk on the Kaikoura UFOs hit the mark when he suggested that the mysterious lights came from a squid boat and its reflection in the water. We all nodded enthusiastically in agreement when he showed us a slide of such a boat. And we all about-faced when he then went on to state that the two images in the UFO shot had to be 50 metres apart. It's pleasing to see a cherished hypothesis successfully challenged and accepted as incorrect, something all too rare when investigating anomalous phenomena. Bill went on to build a convincing case that the images were more likely to be of a group of squid boats transferring catches to a mother vessel. By the time he'd looked at the optical effects, the radar, the boat placements and the MAF logs, he'd built up a pretty convincing case that when it looks like a duck, smells like a duck and then quacks, you gotta figure it would go nicely with orange sauce....

Of course, we would all agree with that wouldn't we? After all, we're members of a minority group rejected by mainstream society. Or so psychiatrist Richard Mullen might have suggested. Certainly his listing of group characteristics sounded rather familiar:

charismatic leader (ahem)

vulnerable followers (nooo, not another crystal please...)

peer pressure (surely you don't believe in moas, Denis?)

isolation (name three Skeptics in your neighbourhood)

maverick intensity (I won't name names but I'm sure you know who I mean...)

One quote Richard used is well worth remembering. It's from Jonathan Swift:

"It is useless to attempt to reason a man out of a thing he was never reasoned into."

Bent Spoon Award to Wellington Hospital

This year's Bent Spoon Award from the NZ Skeptics has been won by Wellington Hospital for encouraging their nursing staff to claim special healing powers through the laying on of hands.

"Frankly, I would be dismayed to be treated by a doctor or hospital who doesn't recognise the important ethical or professional questions here — delusion or deception is not an acceptable basis for something which is given an approving nod by a publicly funded hospital," says Skeptic Chair Vicki Hyde.

The Skeptics recognise that, like any form of extra caring or positive interaction from a basic smile to a relaxing massage, such 'healing' or 'therapeutic' touch may well make patients feel better. But they contend Wellington Hospital has stepped over the mark by trying to take advantage of a common psychological reaction and dress it up as some form of special treatment when it is not.

"Anecdotal stories and formal reports all identify a profound, disturbing lack of basic patient management and care at many of our larger hospitals, so it is particularly sad to see valuable nursing time taken up with this sort of deception, however well-meaning."

The quest for evidence was a feature of those winning Bravo Awards from the Skeptics this year.

One such award has gone to the New Zealand Association of Rationalists & Humanists for issuing a challenge to visiting Australian Ellen Greve, aka Jasmuheen. Greve claimed not to have eaten for the last five years, feeding instead from an inner light within her deeply spiritual self.

The Skeptics have also applauded:

- Michelle Hollis of Consumer for her June 2000 item on how to assess medical claims.
- Matt Philp, for his God's Classroom item that ran in the Listener (April 22, 2000) examining the varying attitudes in the creationism-evolution debate and whether it is an appropriate debating point in this country's science classrooms.
- Kim Hill, of National Radio's Nine to Noon Programme.

This year's nomination mentioned in particular her well-balanced and informed interview of John Read, Director of Scientific Affairs of the NZ Psychological Society and vehemently outspoken critic of Dr Elizabeth Loftus and the latter's research suggested that repressed memory is not supported by evidence.

BOOK REVIEW

Science Friction: The Maxicrop Case And The Aftermath, Doug Edmeades, $24.95, Fertiliser Information Services. Reviewed by Annette Taylor

IT was a Ngatea farmer who finally got to Doug Edmeades on an Autumn day in 1985. Then employed as a scientist for the Ministry of Agriculture and Fisheries (MAF) Dr Edmeades had amassed a considerable amount of information on liquid fertilisers and concluded they were useless. At this field day, he was put on the spot when the farmer asked how good the products were, and in particular Maxicrop. When told the answer, the farmer exploded and asked what MAF scientists - public servants funded by the taxpayer - were doing about it. At a time when fertiliser costs were rising (and farm returns shrinking) advertising for these products was everywhere yet the other side of the story remained untold. Dr Edmeades got his chance to redress the balance when asked to take part in Fair Go. This appearance kicked off the Maxicrop trial, with the High Court ruling the product cannot and does not work. Yet despite this favourable outcome, Dr Edmeades became involved in a battle with MAF, on a similar subject that resulted in him leaving.

Science Friction is not just about the Maxicrop case, although this makes for fascinating reading. It is about the role of science in today's increasingly commercialised world. Dr Edmeades believes under current conditions scientists are less likely to speak honestly and openly about various issues affecting society. And he ponders the implications of this.

Clearly written, with touches of humour, Dr Edmeades has produced a compelling book that is highly informative and raises important questions. He even manages to make soil sound interesting! Definitely worth a read.

Newsfront

Annette Taylor

Taking a leaf from the UK Skeptic, we're turning our news clippings into a column. Which means I get to read them - never used to before! Many thanks to all those who've sent in material, and please keep it coming.

LUCK OF THE DRAGON

VISITING Malaysian woman Lillian Too got herself and her range of Feng Shui jewellery in The Evening Post on Wednesday 30 and in the Dominion the next day. In a half page spread she chats about how Feng Shui is much, much more than making sure the loo is not by the front entrance and the bed not in a coffin position. It's also about having your mind in balance. Readers will be pleased to learn that Stephen Hawking is a dragon and tiger brain genius who practises inner Feng Shui. Everyone can be a winner, particularly if they buy one of Too's dragon headed, tortoise-bodied rings to wear. For instant wealth one should buy an Arowana fish symbol. (It doesn't say whose wealth we're talking about here - a three-legged toad costs from $733 and a dragon bangle $6999.)

MAGNETIC QUALITIES

On the subject of adornments, a Malaysian man has discovered he has magnetic power - the ability to hold metallic objects to his body without using his hands.

Liew Thow Lin, 69, dressed only in his trousers, featured in the Dominion on Monday 31 July with a handful of forks sticking to his ample belly. Also attached was what appeared to be an iron holding up three bricks. Very handy if he runs out of shelf space in the garden shed.

EYEWITNESS EVIDENCE QUESTIONED

Something most of us have known for a while - the Evening Post carried a report on Thursday 10 August stating wrongful convictions could be more common than previously thought.

Two Victoria University researchers say false identification of suspects by eyewitnesses is the problem. In the United States, mistaken eyewitness identification is responsible for 80 percent of wrongful convictions.

Psychology senior lecturer Maryanne Garry and masters student Kellie Fitzmaurice have received $12 000 to apply the US research to this country. They will also seek to identify people in prisons who may have been wrongly convicted.

MOON STUDIES

Find yourself howling at the moon? You may have lunar fever. A Timaru rest home has undertaken three months' research into the effects of the moon on its 37 residents. They found some lunar cycle links, the Evening Post reported on Wednesday 26 July.

One resident becomes incontinent only at the full moon and others became more aggressive at that time. However, Strathallan Life Care Village manager Jan Hide has since discovered the need to conduct such studies for a longer period of time with fewer people in order to detect accurate trends. So to keep scientists happy (who like things in black and white) Hide will carry it on for a further six months. There may be something to this, says she who often becomes grumpy near a full moon. Watch this space for results.

'STAR' STUDENT

Former Victoria University education professor Adrienne Alton-Lee has been awarded $90,000 by the Employment Court, the NZ Herald reported on Friday 21 July.

The row was over a postgraduate student who claimed to have experienced interplanetary travel. Dr Alton-Lee challenged faculty staff who wanted to send the student out to teach in a school. Chief Judge Tom Goddard ordered the university to pay $11 735 which had been withheld from the second year's funding of Dr Alton-Lee's research (she financed this by selling her house), $25 000 for stress, $10 000 for loss of advancement and $15 000 because a premature announcement concerning her contract was made.

The student was in fact sent out to a school and only lasted one day when she continued to assert she had just returned to Earth...

SELMA THE SERPENT WON'T BE HURT SCIENTISTS PROMISE

The hunt is on for Nessie's cousin - The Evening Post (Thursday 3 August) reported an international team of monster hunters have unveiled a giant trap for catching a serpent in a lake in Norway.

The trap, comprising a metal frame with nylon netting, will be lowered into Seljord lake full of live whitefish to catch Selma the Serpent. If Selma falls for it, she will be checked out by two University of Oslo biologists, who were on standby with a helicopter and good intentions.

"We'll take a DNA sample, document the serpent and then release it into the lake. We will be very careful not to hurt it." Selma was first spotted around 1750.

SAME OLD NEW AGE

Dream catchers, acupuncture, palmistry and spiritual surgery were all the go in Tauranga recently during the Healthy Life Expo, says the Bay Of Plenty Times (Monday 8 August.)

Acupuncturist Neil Denyer treated a local for sinus problems and palm reader Peace Life saw some good things in the hands of a client. Times reporter Val Sherriff was sent to check it out and discovered all this and more being demonstrated to hundreds of Tauranga folk.

Organisers said things had been very busy and would have continued that way if not for the Saturday footie game which drew people away (I'm sure it had nothing to do with the ethereal music supplied by Jeff Clarkson.)

CEREOLOGY COMES FULL CIRCLE

A British researcher has come up with another theory about one of the world's lingering mysteries - crop circles are the result of the earth's magnetic fields.

According to the Evening Post of Friday 11 August fluctuations in the earth's magnetic fields lead to corn fields being 'electrocuted', collapsing in patterns. The paper says the researcher is funded by an American billionaire who is well known for his paranormal beliefs. Colin Andrews acknowledged that some 80 percent of the designs were caused by hoaxes with lawn rollers.

"The other 20 percent remain quite another thing."

The piece goes on to say Andrews couldn't explain why only corn would be zapped and not other crops, nor why no circles were discovered before 1981.

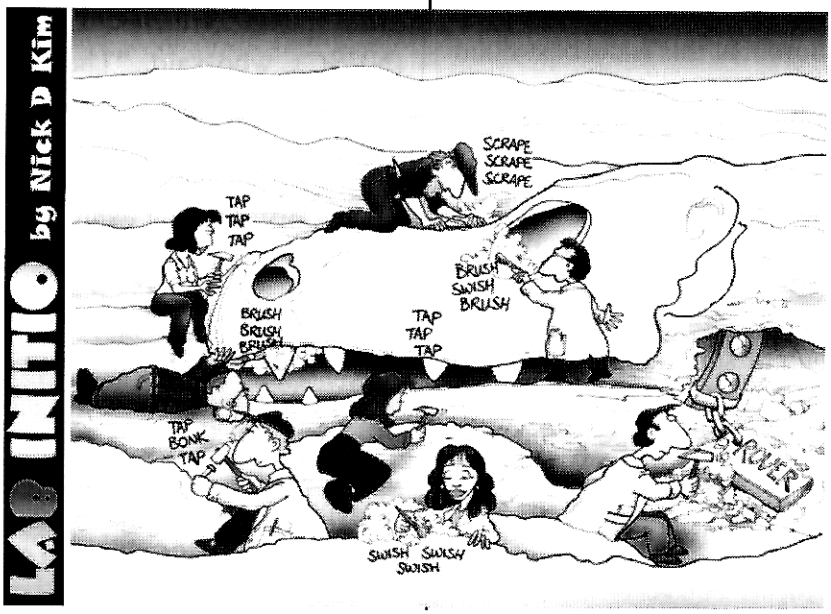
Doug Bower, the man who claims to be Britain's original crop circle creator, said he made his first design in 1978 after leaving a pub. Media attention to his work took a little time to catch on, he says. Since then, around 10,000 crop circles have been charted around the world, including New Zealand.

CURSES!

Finally, the Dominion (Thursday August 31) reported new Nelson-Marlborough health board director Mere Wetere is frightened for herself and her family following a Maori curse being placed on her.

It says the curse was placed on Ms Wetere by a woman at a hui at Nelson's Whakatu Marae the day after she was appointed to the board by Health Minister Annette King.

Ngati Tama representative John Mitchell said the curse was used by a tohunga or priest to bring pain, bad luck, misadventure or even death to the victim. He doubted anyone in the district could be regarded as a serious practitioner of traditional Maori ways and questioned why the curse had been placed on Ms Wetere when she had no control over the appointment process. The power of such curses to do real harm was apparently taken for granted by all concerned.



Ghost Squid Boats in the Sky

William Ireland

An old mystery now looks rather less mysterious

IN DECEMBER 1978 and January 1979 there was a spate of sightings of lights in the night sky around New Zealand, some of them seen from aircraft. Many of these sightings were claimed to have been UFOs. The most widely-reported sighting was of a very bright light seen by all on board an Argosy aircraft piloted by Captain Bill Startup as it flew Northeast over the sea from Christchurch at about 0220 - 0230 on 31 December 1978. It was watched for over ten minutes and was photographed from the cockpit of the Argosy by David Crockett on a 16mm colour movie film. The aircraft radar was operating in the ground-mapping mode, so could see objects only below the level of the aircraft, and according to Captain Startup it showed a return similar to that of a large ship. The position of the radar object was about the same as that occupied by the very bright light.

This encounter was reported worldwide and for the last twenty years we have been expected to believe that this is the best-documented UFO sighting ever. This note presents evidence not previously available, in support of the 'Squid Boat Hypothesis' to explain this encounter, and concludes that rather than being a single boat this UFO was a small group of squid boats, seen from an aircraft on a clear dark night, at a minimum range of the order of six kilometres.

The suggestion that squid boats could have accounted for some of the UFO sightings, including this one, had already been made within a few days of the events, but was not accepted by some of those involved. In particular the people who had been on the flight on 31 December were not satisfied with the report issued by the Ministry of Defence. Quentin Fogarty, the TV journalist who had arranged that he and his film crew could be on the flight, has written, "Like so many of our critics, the New Zealand Ministry of Defence and the other government bodies involved did not have access to the film, nor to all the relevant data."

The person who did have access to the film and all the relevant data in 1979 was Dr Bruce Maccabee, chairman of the Fund for UFO Research Inc., of Washington D.C. When he heard of this sighting, he came to New Zealand and made an extensive study of this and some of the other events. He sent a copy of a report 'What Really Happened in New Zealand' to the New Zealand UFO Studies Centre (NUSC), who said, "The New Zealand UFO Studies Centre is pleased to recommend Dr Maccabee's investigation of this case as an excellent example of serious and scientific UFO research."

Our response at DSIR was quite the opposite.

At about the same time as he sent his report to NUSC Dr Maccabee published a paper entitled "Photometric Properties of an Unidentified Object Seen off the Coast of New Zealand" in the scientific journal Applied Optics. Our response at DSIR was a paper commenting that we did not accept Dr Maccabee's analysis and the implication that a UFO was photographed. We suggested that a very likely source of the light was a squid boat; Dr Maccabee was permitted to publish a response to our comments. We objected to Dr Maccabee's new and altered claims but the editor refused to continue the dialogue with the comment, "The discussion of this particular incident now seems to be moving outside the realm of technical optics and into areas not relevant to the subject matter of Applied Optics."

Captain Startup's 1980 book, "The Kaikoura UFOs" dismissed the Squid Boat Hypothesis and Quentin Fogarty wrote in his 1982 book "Let's Hope They're Friendly!" "To my knowledge, the New Zealand scientists still have not studied the entire UFO footage, nor have they spoken to all the witnesses. Maybe when they finally get around to studying *all* the information, interviewing *all* the witnesses and analysing *all* the movie footage, their findings might be worthy of consideration. Until then, I do not believe they have any right to expect their guesswork to be taken seriously. The reports could of course be part of a deliberate government cover-up."

There was a cover-up all right, not a government one, and perhaps not deliberate, by Quentin Fogarty and his friends. They made neither the film nor a copy of it available to us to see for ourselves what was on it.

The next account appeared in the 1982 BBCTV Horizon documentary, "The Case of the UFOs" that includes parts of the original movie made by David Crockett. I recently played my video copy of this TV programme and realised that here was the film evidence that had been in my possession since 1983 but overlooked for about 17 years.

The 16mm colour movie was made using both a 16-100mm zoom lens and an 80-240mm zoom lens. The total light intensity and the size of the object were estimated by Dr Maccabee from an analysis of many frames filmed with the 16-100mm zoom lens at an estimated range of about 18km, looking downwards about ten degrees below horizontal. Assuming that this lens was always set to 100mm focal length, when the size of the images and other information suggest that on occasion it was set to less than 50mm, he erroneously claimed that the size would be consistent with a non-circular source about 12m high by 18m wide. He has subsequently claimed that the light intensity was much too high to be from a single squid boat. A more likely size would be at least 24m by 36m, and if the source was extended horizontally along the ocean surface the 24m 'height' is a horizontal 'length' of at least 60m and possibly as much as 120 metres.

The sequence lasting more than 80 seconds (over 800 frames) using the 80-240mm telephoto lens was made looking downwards perhaps 38 degrees below horizontal, when the aircraft was about 6 km from the light, and at least some of this sequence appears on the BBC reproduction. Many frames with images similar to squid boat lights are in reasonable focus, and allow size estimates to be made.

Figure 1: 80-240mm lens image of the bright lights at about 6km

The 80-240mm lens images, such as those in Figures 1 and 2, are much larger than the 16-100mm lens images. The size ranges from about 340μm 'diameter' with no resolvable details, filmed when the lens was obviously zoomed to minimum focal length, to 'beach balls' about 2.2mm 'diameter' when zoomed to maximum. Many of the larger images contain a large number of clearly-resolved white lights, and evidence of more than one row of lights making up the image. Typically three, four, or five rows, each apparently containing up to ten lights, are seen. The rows of lights are roughly parallel and their relative positions and azimuths change with time, suggesting relative motion. In some frames the rows are widely separated, suggesting objects some distance apart, in others there appear to be two rows end to end.

If we make the reasonable assumptions that the lights come from objects on the sea surface at a range of six kilometres and that the the large images were filmed at 240mm focal length, some of the objects are about 22m long, with about ten lamps along their length, each lamp about 2.4m from its neighbours. In several frames the sideways separation between two distinct objects translates to 50m on the water. These dimensions are very similar to those of some small squid boats that are typically about 25m long with two side-by-side rows of 3-4kw incandescent or mercury-arc lamps strung along wires above the deck, 7m above the water, and about 10 lamps in each row, the lamps in each row being 2.4m apart.

It appears that the claims that this is one of the most significant and best-documented UFO sightings ever made must now be dis-

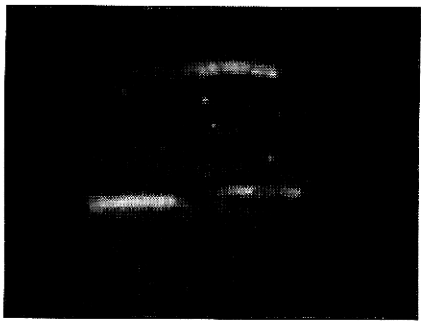
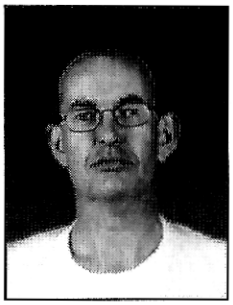


Figure 2: 80-240mm lens image of the bright lights at about 6km range.

counted because they are not supported by the books, movie film, radar, and other evidence that subsequently became available. The only rational conclusion when the evidence is scrutinised adequately is that the film includes focused images, not of a UFO, but of a small group of brightly-lit squid boats, seen from an aircraft on a clear dark night, at a range of the order of six kilometres.

Bill Ireland is a retired atmospheric physicist, formerly with the DSIR. He is currently completing a reference book on frost protection.



Hokum Locum

John Welch

COLON CLEANSING

THANKS to reader Alan Pickmere for drawing my attention to colon cleansing. In a radio advertisement Alan heard the claim that the average adult has up to 10kg of preservatives and toxic waste in their colon. The actor, John Wayne had 20kg removed at autopsy, doubtless dating from the time spent venting his spleen against commie actors facing Senator Joe McCarthy's inquisition. Come to think of it, perhaps he should have "vented" more often.

These accumulations are not at all surprising to a skeptical doctor as I am frequently exposed to views espoused by people whose bodies hold far more toxic waste than this and it goes all the way up to their heads. If any readers would like to cleanse their colons please call 0800-CLYSTER.

HERBS FLUNK

Although it makes sense to test herbs for therapeutic efficacy, there are few acceptable trials. An Australian study of herbal and Ayurvedic preparations found that only tumeric had any anti-inflammatory effect and 5 of 23 celery preparations had an anti-arthritic effect equivalent to 50mg of ibuprofen. Given the wide variation in the bioavailability of herbal medicines I recommend stick to ibuprofen, normally taken in a daily dose of 1600mg costing around 75 cents. I bet that herbal medicines cost a lot more than that. It's important for any useless treatment to cost a lot because that helps people believe that it actually works.

(NZ Doctor 19 Jul 2000)

SWADESHI

Third world countries such as India frequently seek pragmatic solutions to their health problems and in this case they have encouraged traditional practices such as ayurveda, sidha, unani, yoga, naturopathy, Tibetan medicine and homeopathy. I was reassured to see the addition of homeopathy and naturopathy, so much a part of mainstream New Zealand medicine. The Indian Health Minister has asked all other Ministries to ensure that its employees can be reimbursed for the cost of such treatments.

Perhaps this is where our own Health Minister got the idea for allocating a large sum of money for the evaluation of alternative medicine. The increasingly third world Wellington Hospital is reduced to waving its hands at patients. Will they soon be encouraging them to start the day with a freshly steaming glass of their own urine, perhaps followed by pills made out of lama's faeces, a traditional Tibetan remedy.

(Lancet Vol 355, p1252)

SILICON IMPLANTS

As Shakespeare so eloquently put it "God has given woman one breast and she gives herself another". Minerva (BMJ Vol 320 p 882) reports a fourth extensive study finding no association between ill health and silicon implants. However, this will not have any effect on the millions of dollars given to litigants because the standard of proof is to have one's personal account of suffering published in any women's magazine. In the true spirit of the post-modern age I look forward to the first litigation for alien abduction. Those anal probes can hurt! All we need is a New Zealand Doctor brave enough to fill in the ACC forms.

This is yet another example of Welch's law: "Claims expand to take up the amount of compensation available".

SURGEON AMPUTATES HEALTHY LEGS

Since I have raised the topic of post-modernism, readers will be interested in this account from the BMJ (Vol 320 p332). Both patients reported on suffered from a rare body dysmorphic disorder known as apotemnophilia which makes them believe that they can only be normal once they have had a limb removed. The patients were delighted after each had a leg removed in a below-knee amputation. The hospital administration was quoted as saying that no more of these operations will be done.

STOKABUNGA

Obesity has been raised to an art form in North America and it is

fitting that the American food industry has launched "Stokabunga", a cookie containing more calories than an average meal, including 48g fat. Such excess is a fitting accompaniment to a recent announcement that for the first time the number of overweight people in the world equalled the number who were malnourished. In Britain, the average cat receives more protein per day than the average poor African. Sales of Stokabunga have been particularly strong in Belgium.

INEFFECTIVE DRUGS

Of the 50,000 prescription drugs currently available in Germany, 33,000 have never been subject to clinical trials. They include homeopathic preparations, herbal remedies and in one case a useless preparation containing loess (a fine soil) used for the treatment of diarrhoea. Drug companies were able to suppress a report that gave advice on how to substitute cheaper effective drugs in place of the useless ones. During World War 2, Hitler's doctor treated him with capsules containing faecal bacteria from "finest Bulgarian peasant" and such a product is conceivably still available. (New Scientist 4 Oct 97 p20)

As recently as 1997 it was possible to receive rejuvenating injections of fetal sheep cells. This treatment was popularised by Konrad Adenaur, the German Chancellor who remained in power until he was 87 years old. Unfortunately the Germans have a bad habit of blindly following rogue Chancellors.

It is quite clear now what has happened to their Pharmaceutical Regulatory authorities. Instead of a feral and vigorous staff dedicated to removing quack remedies, the excessive use of fetal cells has turned them all into sheep in sheep's clothing. (New Scientist 25 Jan 1997 p6)

FINGER-LICKING BAD FOR WAIST REDUCTION?

The herb *Aristolochia gangchi* was mistakenly used in weight loss pills by the Kentucky Fried medicine brigade. As well as causing kidney failure it is now thought to be responsible for cancers of the urinary tract. Staff at a Belgian weight loss clinic had prescribed the herb *Stephania tetranda* but the mixture also contained *Aristolochia* which has a similar sounding Chinese name.

Dr David Kessler, former Commissioner of the United States Food and Drug Administration (FDA) notes that there are no controls over the quality of such products or their composition. The cause of this was the passage of the Dietary Supplement Health and Education Act of 1994, which deregulated the industry by limiting the role of the FDA and opening up this $15 billion-a- year industry. This ridiculous legislation does not require that dietary supplements be shown to be safe or effective. I have no doubt that an epidemic of renal failure and cancer will soon peel the weight off those hordes of fatties seen in every US shopping mall. (New England Journal of Medicine June 8 2000, p1742; BMJ Vol 320, p1623)

TISSUE SAMPLES AND CRYPTOPATHOLOGY

When confronted with unusual lumps and swelling it is a common medical practice to get some tissue examined by a pathologist and this will often reveal the diagnosis.

As a keen hunter I feel the same exemplary approach should be taken when examining phenomena such as "Bigfoot", the Loch Ness monster and our very own Australasian "Yowie". The Yowie is believed to be named thus after the cries recorded when it had come into contact with hunters and been wounded. It would be a matter of some pride to me if I were the first person to bag either of these trophies. Nessie would obviously require a large harpoon but depth charges would soon bring the shy and expiring creature to the surface. Bigfoot should prove no problem for my Winchester 0.243. I was therefore disappointed to read that a county in Washington has declared it illegal to kill Bigfoot. However, fur samples have been gathered from "close encounters" and delivered to Ken Goddard at a wildlife forensic laboratory. Ken found that Bigfoot has made a remarkable adaptation to its cold environment-polyester fur. Ken is waiting for a "close encounter of the turd kind" so he can examine the creature's diet for evidence of Stokabunga. (New Scientist 22 Jan 2000 p40)

I predict that once tissue samples have been obtained, all of these secretive creatures will be found to share a puzzling 100 percent of their DNA with humans.

John Welch is a doctor with the Royal New Zealand Air Force

Forum

Oz Skeptics set up for Video Fraud?

A news item that Australian skeptics are considering video evidence of a 'Bigfoot' sighting for a $100 000 prize should alarm all who have offered money for evidence of paranormal activity. I urge all NZ skeptics who have risked part of their fortune; if you have not already done so, insert a clause insisting that photographs, films or video will not be considered as evidence.

You probably realise that special effects can now achieve apparent miracles, but TV ads do not set out to be convincing. The obviously fake is part of the appeal. You probably do not realise that the equipment to achieve the kind of effects you see in Toyota adverts is now available to amateurs. With a digital video camera, a state-of-the-art PC, some extra hardware, and specialist software you could make one of those adverts. Total cost of the equipment is under NZ$15 000. For a possible return of around ten times that it is not a bad investment.

What kind of tests will the Australian skeptics use to evaluate the video they have received? No objective tests are available. Experts could be assembled to check that 'bigfoot' had not been added to a scene during editing. Scaling, direction of lighting, breeze effects, impressions on surrounding vegetation, a halo effect on the inserted object are some of the clues that have identified fake film in the past. All these can be readily controlled by digital editing.

Modern software makes all this easy. But a meticulous faker could take a frame and adjust it pixel by pixel, for a small area this is a reasonable proposition. Software then allows subsequent frames to be adjusted to match. With large sums of money at stake it is inevitable that this will be done. To make it worse, analogue tape or film can be converted to a digital signal and processed in the computer. Output to analogue tape is child's play; output to film easy, though a little more complicated. There is no longer any such thing as identifiably 'original' tape or film negative.

Does this mean that film and video evidence is completely worthless? It means that spontaneous offerings of evidence should not even be considered. Cameras are still important for investigating claims, but it is essential that skeptics develop protocols that allow complete control of equipment throughout the investigation. For example a digital video camera with the lens disabled, containing a blank tape in a sealed compartment, can be connected by a wire. A data stream could then be inserted to give audio and visual record of a complete encounter with aliens onto that tape.

Do not believe anything you see on TV.

Jim Ring

A Message From Your Ex

Members attending the Annual Dinner on 26 August last saw a bemused retiring NZCSICOP Secretary, even more tongue-tied than usual, responding to an unexpected gift. A collection of skeptical books, each signed by its distinguished author, and inscribed with flattering comments. Now that he has recovered somewhat from the shock, he wishes to send this message to fellow members; Thank you for your support and good wishes, and for this splendid gift.

Not everyone is so fortunate as to be able to take up a new absorbing task almost simultaneously with laying down an old one, yet that was my happy situation, when NZCSICOP was born within weeks of my retirement from full-time work. Membership has been a source of great satisfaction to me, not only to have been involved in whatever success we may have had, but in all the friendships made. The NZ Skeptics have been happily free from schism, in-fighting and general bitchiness. I thank you all for that.

I confidently now step aside in favour of Claire Le Couteur, whom I wish well. Though no longer involved in the day-to-day affairs of NZ Skeptics, my commitment to our principles remains as strong as before, and I hope for a close association for further years.

Bernard Howard

A Year Of Mussels & Chardonnay

Vicki Hyde presents the year 2000 chair-entity's Report

I'M PLEASED that we all appear to have survived the Millennium melt-down and will have to wait another thousand years for the sky to fall in. Apart from the pre-millennial party at the beginning of the year, the past 12 months have seen "business as usual" on the skeptical front.

Alternative treatments continue to get highly positive and highly uninformed media coverage. The Minister of Health has announced a study into alternative treatments and their efficacy. As more and more of these enter the public health system, apparently in response to public demand, I urge you to make your public voice heard. Please write to the minister or your local MP expressing your concerns.

At least one can see a ray of light in the prosecution of the company touting Lyprinol mussel extract as a cancer cure; though one has to note that they were fined $5000 and reports had sales of $1.2 million in the first few frenzied days of product release. Of course had TVNZ had a journalist with science training on the job, it would have been a non-starter and certainly wouldn't have got the extended lead story coverage it did get.

It's not just TVNZ though. TV3 had the documentary Gabrielle's Choice, regarding a woman's decision to try the alternative route in treating a suspected cancer. It came to the appalling conclusion that, having made the choice to undergo 17 weeks of Rife radio frequency treatment, oxygen therapy, multi-vitamin and herbal dosages etc, the reason these things didn't work in reducing the lump was because Gabrielle didn't believe hard enough. It was all her fault.

Fault-finding is an interesting past-time, if somewhat arbitrary. I see that the religious Samoan family who took their 14-year-old out of cancer treatment are now on trial for his manslaughter. No tear-jerking coverage on Holmes for them.

Our criticism of the Wellington's healing touch "therapy" hit a raw nerve with Holmes. His outburst about the Skeptics being a bunch of "white-skinned, chardonnay-sipping elitists who should crawl back to the Arts Centre and get a life" was shortly followed by the announcement that he was taking extended leave to undergo conventional treatment for his own cancer. It should be noted ratings rose 10% in his absence.

We didn't get asked back on to Holmes to examine our track record in the psychic-skeptic predictions made at the beginning of 1999. Regarding those, I take full responsibility for the All Blacks' loss to France in the World Cup semi-finals, as I obviously jinxed the team. It would have been nice to know if the psychics had come up with an equally stunning prediction.

The primer continues to provide a useful teaching tool, and I have hopes for two more projects I would like to ask your support for. One is a small resource for libraries to encourage them to think about their book collection and cataloguing. Do they really need 174 books on astrology? That's grown out of a presentation I made to the librarians at Canterbury Library, one of whom came up with the rather innovative idea of cataloguing the books under "fiction, non-fiction and crap".

The other project is for you to consider a Web-based database of the NZ Skeptic, so we can all easily find material that has been published over the past 10 years and have fast reference to discussions of all the topics that come up time and time again. It would certainly make my life easier, and I suspect would be a very useful resource for all of us.

Your chair-entity,

Vicki Hyde

Should Have Seen It Coming

Despite being clairvoyant Angel Destiny admits she was taken by surprise when her 1920s house collapsed around her as she soaked in the bath.

The International Express (15 August) reports the 44 year old Cardiff woman was lucky to escape with her life. Ms Destiny believes her friends in the spirit world (maybe Lassie?) guided her to the only safe spot in the house. "It must have been in my stars but I'm afraid I didn't foretell it would happen," she said.

Beer and Skittles

There are plenty of things which are better to drink than distilled water, says John Riddell. But then, most of you probably knew that anyway.

Eight is Enough

UNLESS you have been tied up in a cave for a few years you will have heard the adverts for water distillation units. These ads are a good example of how you can mislead people with a number of true statements. "It is a proven health fact" we are told, "that we each need up to eight glasses of water a day." Which, strictly speaking, would mean that drinking more than eight glasses a day could be bad for you. Toxic stuff that dihydrogen monoxide. Although, strictly speaking, it isn't true. If you have been eating nothing but dog biscuits in Egypt in summertime, you might need more than eight glasses, but as a general rule, eight is enough. The strange thing is not that too much water can be bad for you. The strange thing is that when many people hear this ad, they mistakenly think it is saying we should all drink eight glasses of water a day. It is probably true that, in our climate, the mythical average man needs about 1600 ml of water per day. About eight glasses. But food contains lots of water. Watermelon, mashed potato, peas and even steak all have heaps of water. So do tea, coffee, milk and orange juice. And don't forget beer. On top of all this, eight glasses is probably too much.

And then the ad goes on to say, " So how can we be sure that the water we drink is pure?" You have to ask, "Hold on, who said it had to be pure?" I actually like my orange juice to contain water. In fact I find it really dusty if it doesn't.

Put a litre of freshly squeezed organically grown orange juice into a water distiller and turn the machine on. You will end up with nearly a litre of water to drink, and some yucky goo at the bottom of the evaporation chamber. This could then be used in an advert to show the evil contaminants that would have ended up inside you if you hadn't distilled it first.

Don't get me wrong. Distillation is wonderful. Some of my favourite things are the product of distillation. And the water distillers made by this company, while more expensive than the ones at the Home Brew shop, are very well made and more suited for the production of drinking water than stills designed for producing vodka.

The problem I have is that distillation is a very expensive way of getting drinking water. Okay, it is cheaper than buying mineral water, but then so is lemonade.

They go on to list the things that distillation can remove from water. But they don't list the things it doesn't remove. Ethanol, methanol, propanol, carbon tetrachloride, petrol and diesel, to name a few. Put a teaspoon of petrol into your distiller and tell me what the water tastes like. The things that distillation does remove are either not in tap water, or not harmful, or not there in large enough quantities to be harmful.

For example, it is true that distillation removes "the evil Giardia" but the one time Giardia got into a city water supply it was international news. Everyone in Sydney knew they had to boil the water for a while. Since Giardia is only slightly more likely than elephants to be in the water supply, routine distillation of the water seems a bit excessive.

There are three main reasons why you might want to distil your water. Health, safety, and taste. For the sake of your health, being dehydrated is bad. If you don't drink enough water, you will die. No question. Even being a little bit dehydrated is bad. And if you drink too much, you can also die. But the water doesn't have to be pure. Tap water is just as good at rehydrating as distilled water. But when a baby's life is in danger because of dehydration due to diarrhoea, doctors add salts to the water. Giving the baby pure water can be fatal. Pure water isn't necessary for good health. Sometimes it is dangerous.

Does water need to be pure to be safe? Of course not. Distillation does remove bacteria, but so does boiling or chlorination. Most of us live in cities or towns where the local council has a water treatment system. They very economically remove everything from bacteria to elephants and

sediments, and they make the water safe to drink. Distilling town water to make it safe is simply a waste of money.

That leaves us with taste. I went to Alexandra Park to watch the trots one time, and foolishly bought a cup of coffee. I couldn't drink it. I took one sip and threw the rest away. I can't be sure but I think it was just the taste of the treated water that made it undrinkable. Town water. I live in the country and get water from a well. It tastes like water should. I could bottle it and sell it as mineral water. It has a few calcium and magnesium carbonates in it. That's the mineral bit. We boil it for drinking, in case a cow stands too close to the well, but that's all. And so when I get to taste town water occasionally, I sometimes don't like it. But there are plenty of under the bench filtration systems(or on top if you prefer) which are cheaper to set up and cheaper to run, than the cheapest distillation system. Putting a new filter cartridge in every month is much cheaper than using a still.

Another thing that is interesting about that advert. They say something like "Some of our customers believe they have had the following health benefits from using the distiller."

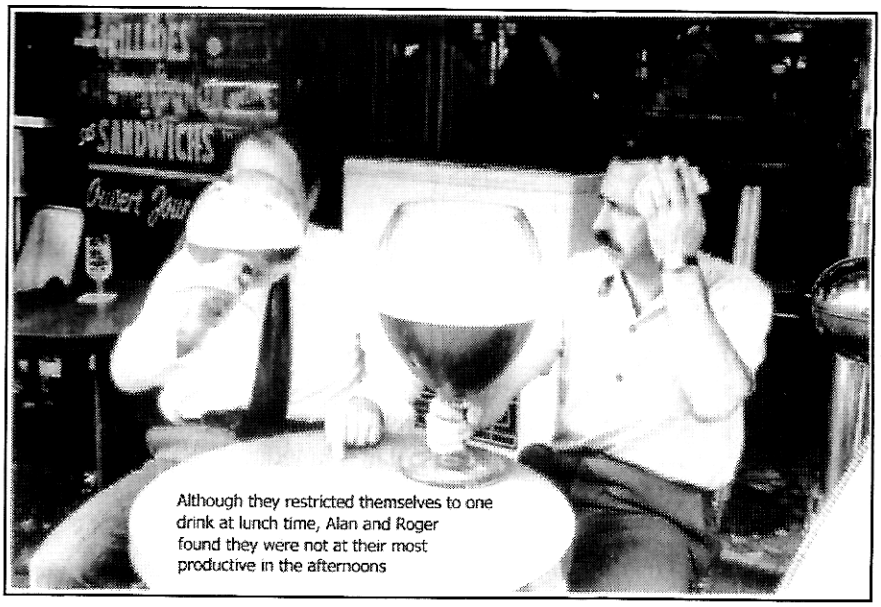
And then they give a list of things that could be explained by the placebo effect. What they don't do is give a list of scientific articles published in peer reviewed journals on the health benefits of using distilled water.

The advertisers aren't silly enough to say drinking distilled water actually cures these ailments. They know that would be a false claim. But it is true that some of their customers have fooled themselves into thinking that drinking distilled water has been good for them. And so by repeating the customer's false beliefs, they can create the impression that there is good evidence that distilled water is good for you.

"It could", they say, "be the healthiest investment you ever make." Or it could be a complete waste of money.

You decide.

John Riddell does in fact have a distillation plant at home, but doesn't use it for water.



Although they restricted themselves to one drink at lunch time, Alan and Roger found they were not at their most productive in the afternoons

And Now to Financial Matters...

Ian Short provides a few comments on the Treasurer's Report presented to the 2000 AGM.

The figures presented here have been rounded out to the nearest $100 dollars to make them more user friendly and represent the balance as at 31 December 2000.

The situation was that we had $4200 in our cheque account,and $27,000 in our term deposit. and we had income over expenditure of $220.

Our income of $12,000 came mainly from: Membership subscriptions $9,600, Sales $500, and Profit on conference 1999 $1,600.

Most of our payments related to costs involved in the Skeptic newsletter production. $10,200.

This means that our finances are in a very satisfactory shape. We are working within our income but using just about all of it on Skeptic business. The term deposit means that we have some money available to help with extra opportunities as they occur, e.g. a possible visit by James Randi.

Ian Short
Treasurer.

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