The worst speculative Sceptic ever I knew,
was a much better Man than the best
superstitious Devotee & Bigot.
David Hume

Communicating the nature of science

Skeptics and the environment

Self-esteem

The value of laughter

new zealand Skeptic

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content

Communicating the nature of science 3

Prayer not so effective after all 4

Self-esteem: too much of a Good Thing? 6

Skeptics and the environment 7

Newsfront 10

"Noah's Ark" tests negative 12

Something to laugh about 13

Forum 14

Hokum Locum 16

Food irradiation causes cancer, and the sky is falling 18

The royal healing touch 19

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Deadline for next issue: July 10, 2005

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.

editorial

Currents of fear

GIVEN his ratings, only a tiny handful of you probably saw Paul Holmes in his new slot on Prime a few weeks back, talking to Don Maisch, described as an Australian expert on the health effects of magnetic fields. More precisely, he's doing a PhD in the Arts Faculty of Wollongong University on changes in the health status of Chronic Fatigue Syndrome patients following removal of excessive 50 Hz magnetic field exposure.

His performance on Holmes' show had been quite impressive, as he walked up the driveway of a West Auckland house with a little black meter, reading off figures to the reporter, who oohed and tutted dutifully. Inside the house, which was directly under high-tension power lines, the magnetic field was up to 35milliGauss. This is about as high as magnetic fields in a human dwelling would ever get.

What no one thought to mention was that the Earth's background magnetic field is about 500mG. The theory is that the alternating (50 Hz) fields generated by electric wires have some effect that the static field of the Earth doesn't produce, but the evidence on this is contradictory to say the least. After 25 years of research, the most that can be said is that several studies have shown a slight positive correlation between magnetic field strength and incidence of childhood acute lymphoblastic leukaemia in children – enough to raise the incidence from a background rate of three per 100,000 up to about six per 100,000.

Whether the fields cause the leukaemias is another matter entirely. Some of the most rigorous studies have shown no such effect, and it is easy to think of possible confounding factors – power lines are more prevalent in areas dominated by industry and low-cost housing, and there may be many other things affecting the health of residents in such places. Tests on animals exposed to alternating fields of up to 20,000mG for more than a year have shown no increase in leukaemia rates.

The day after the Holmes programme I was drinking a coffee at a cafe in Hamilton when protesters against Transpower's proposed 400kV transmission line marched past. I have some sympathy for their stance, and believe that Transpower hasn't managed this process effectively. There are property rights issues, aesthetic values and commercial considerations which to date have not been properly addressed. There may be better ways to supply this country's energy needs, through conservation, solar water heating and dispersed generating capacity. Alleged health risks, however, do not rate. This issue has been playing out overseas for decades and many millions of dollars has been spent researching health effects, with little result. In the US the total cost of the power line scare, including relocating lines and loss of property values was estimated by the White House Science Office to be over US$25 billion. Decisions about our energy future should not be based on claimed health effects that remain highly dubious.

Annette

Communicating the nature of science: Evolution as an exemplar

Alison Campbell

Science as taught at school is often portrayed as a collection of facts, rather than as a process. Taking a historical approach to the teaching of evolution is a useful way to illustrate the way science works.

THE need for a scientifically literate population is probably greater now than ever before, given the rapid pace of change in science and technology. Members of such a population have the tools to examine the world around them, and the ability to critically assess claims made in the media. However, there are difficulties with conveying just what science is about and how it is done; in letting people know how the scientific world-view differs from "other ways of knowing". This is particularly evident when dealing with evolutionary theory, often described as "just a theory", and probably the only scientific theory to be rejected on the grounds of personal belief. How can we alter such misconceptions and extend scientific understanding?

Part of my role at Waikato University involves liaising with local and regional high school teachers of biology and science. Over the past few years I have received numerous requests from local secondary school teachers to provide a resource they could use in teaching evolution. Discussion with teacher focus groups revealed a number of content areas they would like to have available:

- links to the New Zealand curriculum and to relevant websites,
- evolutionary process (including the sources of genetic variation and how natural selection operates),
- human evolution,
- New Zealand examples,
- evidence for evolution,
- ways of dealing with opposition among students (and colleagues),
- and the historical perspective.

These last two items are particularly significant, since modelling a way of presenting the historical development of evolutionary thought, and by extension the nature of science itself, offers a way of countering opposition to the theory of evolution.

I have deliberately used the example of evolution, because there is good evidence (eg Abd-El-Khalick and Lederman 2000; Passmore and Stewart 2000; Passmore and Stewart 2002) that altering the way in which evolution is traditionally taught offers the opportunity to show people the nature of science – what it is and how it works. For example, rather than taking a confrontational approach to their students' beliefs, Passmore and Stewart (2000) provided a number of models of evolution and encouraged the students to determine which model best explained a particular phenomenon.

Similarly, William Cobern (1994) has commented:

> "Teaching evolution at the secondary level is very much like Darwin presenting the Origin of Species to a public who historically held a very different view of origins. To meet this challenge, teachers [should] preface the conceptual study of evolution with a classroom dialogue… informed with material on the cultural history of Darwinism."

He goes on (Cobern 1995):

> "I do not believe that evolution can be taught effectively by ignoring significant metaphysical (ie essentially religious) questions. One addresses these issues not by teaching a doctrine, but by looking back historically to the cultural and intellectual milieu of

Darwin's day and the great questions over which people struggled."

Taking such an approach is highly significant in developing an understanding of the nature of science, since an historical narrative will not only place Darwin's work into its historical and social context, but will also show how he applied the scientific method to solving his "problem" of evolution. This approach is central to the Evolution for Teaching website (**sci.waikato.ac.nz/evolution** – see NZ Skeptic 71; the other members of the website team are Dr Penelope Cooke of Earth Sciences, Dr Kathrin Cass, and Kerry Earl from the Centre for Science & Technology Education Research), and is also one I use in my own teaching, where every year I encounter students who have a creationist worldview. Such views may well become more common, given that there appears to be a coordinated effort to make material promoting Intelligent Design Theory (and denigrating evolutionary thought) available in schools.

This teacher-generated list, and the philosophy described above, informed the planning and design of the Evolution for Teaching website, which is hosted by the School of Science and Technology at Waikato University. First we felt it important to make explicit the nature of scientific hypotheses, theories, and laws, to overcome difficulties originating in differing understandings of the word "theory". (Much of the language of science offers opportunities for such misunderstandings, since it invests many everyday terms with other, very specific meanings eg Cassels and Johnstone 1985; Letsoalo 1996.)

Photo: Shane Morton, Hamilton Press

Alison Campbell and friend: It's important to show Darwin's work in its social and historical conext.

The site offers links to the NCEA matrices for Science and Biology, plus FAQs, book and site reviews, and a glossary.

Feedback has been almost entirely positive, with all the teachers attending its launch in March indicating that they would use it in their teaching and recommend it to their students. Without exception they found it attractive, easy to navigate, and informative, providing information at a level suitable for both themselves and their students. Student comments support this last point. Since the site went "live" in March 2004 it has received around 100,000 hits per month, indicative of a very high level of interest.

Alison Campbell is a senior lecturer in the Department of Biological Sciences, Waikato University. Full references are available from the editor.

prayer

Prayer - Not so effective after all

Bernard Howard

A widely publicised trial which appeared to show prayer was effective in enhancing fertility now appears to have been fraudulent.

IN 2001 an extraordinary paper, from the highly regarded Columbia University Medical Center, New York, appeared in the also highly regarded Journal of Reproductive Medicine. About 100 women in South Korea who were undergoing in vitro fertilisation treatment were divided into two groups; half had their photographs prayed over anonymously by persons in the US, the other half were not so prayed over. Astoundingly, the conception rate in the "prayed for" group was twice that in the "not prayed for" group. The work was hard to fault from internal evidence, as it had apparently been done using all the procedures of a modern clinical trial, and it became widely quoted as firm evidence for the efficacy of prayer. Publicity was aided by a press release from the university.

This intrigued Dr Bruce Flamm, clinical professor of obstetrics and gynecology at California University. The scandalous nature of his findings is described in a recent Skeptical Inquirer. He wrote to the three authors and the journal editor, asking, as one would of a colleague in the same field, for access to the raw data of the experiments. Over a period of some years repeated similar inquiries have elicited no answer, not even an acknowledgment, from either journal or authors. Such behaviour is not only unusual and discourteous, it is also unethical, and inviting of suspicion.

Complications

In his article, Dr Flamm first comments on the unnecessary complication of the praying arrangements. Not only were the Korean women prayed for, but the Americans who were praying for them had their prayers "fortified" by themselves being prayed for by another group. And yet a third tier of pray-ers was added, praying that the prayers of the middle tier would be answered. The paper offered no reasons for this complexity, which would seem to introduce unnecessary confusion into the trial. Some pray-ers asked that "God's will be done", so, in the absence of knowledge of what God's will is, any result is a "success". How much prayer was offered, and whether the pray-er and the prayed-for acknowledge the same God, were not enquired into.

The Korean women were quite unaware of all this praying, and the university had later to admit it was wrong not to have obtained informed consent. The university had initially described one man (Lobo) as lead author, but when Dr Flamm did get a reply from the vice-chancellor, this person was said to have not known of the work until well after it was done, and had had a merely editorial role in the paper. Another author had recently left the university, while the third has a long criminal history, and is now in jail for fraud. This man, Daniel Wirth, has also a history of publishing reports of "healing" in several papers in obscure paranormal journals.

Why a respectable journal was conned into publishing such a bizarre paper remains a mystery, because the editor refuses to communicate with Dr Flamm, or media inquirers. Despite the criticisms of Dr Flamm and others, the journal kept this paper on its website until a few months ago. Were the claims made in this paper true, they would represent possibly the greatest discovery of all time. That the journal was so incredibly sloppy in its editing, and so obdurate in retracting the paper, is highly damaging to its reputation, and suggests the editor is blinded by his religion.

Another miracle paper

Reading Dr Flamm's critique, I am reminded of the now notorious homeopathy claim of Benveniste et al published in Nature. Some useful comparisons can be made. In 1988, as in 2001, reports containing claims of events that should not have occurred according to current scientific understanding, arrived in the respective editorial offices. We are told that the question of publishing Benveniste's was fiercely argued at Nature, and printed, most unusually, with an explanatory note. As far as is known, the other paper, from workers at the Columbia University Medical Center, had a smooth ride editorially, and was printed without comment.

Nature received a flood of letters to the editor, and several critical of the paper and of the editor for publishing it were printed. Whether anything similar happened at JRM was never admitted. Dr Flamm's repeated requests for information and discussion were never acknowledged.

Benveniste's extraordinary claims led the Nature editor to an extraordinary action; he sent a team of investigators to Benveniste's laboratory in Paris to observe what was done "at the bench". The flaws in technique thus revealed destroyed Benveniste's claims. The team's findings, when published in Nature, caused the authorities to close Benveniste's laboratory, and almost ended his scientific career. The Columbia University Medical Center appears unmoved and unchanged in the face of Dr Flamm's criticisms, and two of the three authors of the "Prayer" paper are pursuing their careers apparently unhindered.

L'Affaire Benveniste is now well in the past. Science is still, as before, opposed to homeopathy, and Nature retains its position at the top of the heap of scientific journals. On the contrary, thanks to Columbia University Medical Center and the Journal of Reproductive Medicine, the issue of the efficacy of prayer remains to clog the stream of medical thinking and inhibits progress. And what researcher who values his reputation and the standards of his work will now wish to offer papers to the JRM?

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Self-Esteem: too much of a Good Thing?

Jim Ring

THE IDEA that low self-esteem is the cause of violent behaviour has been current for some time. Many years ago I attended numerous education meetings where I heard that certain (male) individuals "lacked self-esteem" when it seemed patently obvious that this was not true. I argued that these individuals greatly esteemed many of their own behaviours – it was just that these behaviours were those the counsellors thought should be deplored.

The result was that schools developed programmes to encourage pupils to make lists of their wonderful features and to compose poems of self-celebration. Parents and teachers were afraid to criticise children, or to let them take part in exams and competitions as this could turn them into violent thugs. It became important above all that children never experienced failure.

Scientific American (April 2001) had an article entitled Violent Pride: Do people turn violent because of self-hate or self-love? by Roy F Baumeister. This dealt with the problem of violent young men and characterised them as being usually egoists with a grandiose sense of personal superiority and entitlement; yet counselling textbooks say such people really suffer from low self-esteem.

Although it was a "well-known fact" that low self-esteem causes violence, Baumeister was unable to find a formal statement of the theory, let alone any evidence to support it. According to Baumeister: "...we found no indicators that aggressive male bullies are anxious and insecure under a tough surface."

Self-esteem can be measured using a questionnaire with such examples as:

- How well do you get along with other people?

- Are you generally successful in your work or studies?

Baumeister et al also tested for narcissistic tendencies in a similar manner. People with high self-esteem were not necessarily narcissistic – most could recognise that they genuinely were good at some things but not all.

A study on men imprisoned for violent crimes showed these had the highest mean score for narcissism (among prisoners), though their score for self-esteem was about in the middle. Narcissism correlated very strongly with violent behaviour.

The idea that low self-esteem is the underlying cause of "just about every psychological problem" originates with Nathaniel Branden (originally Nathan Blumenthal), psychotherapist and author of several books on the subject. According to Branden: "faulty self-esteem [is] a flawed self-concept, intellectual self-doubt, a sense of unworthiness or guilt, an experience or inadequacy, a feeling that 'something is wrong with me' or that 'I am not enough.' " But of course if the concept is made as broad as this everybody must experience low self-esteem at times.

Nash published Branden's first book on the topic, The Psychology of Self-Esteem, late in 1969, but it was taken up by Bantam and over a million paperback copies were sold worldwide. In 1977 Branden started a series of intensive "workshop" courses to teach his ideas. The course was called Self-Esteem and the Art of Being. Originally the attendees were psychotherapy students. These people spread the gospel and the idea really took off.

Branden had been a member of the Ayn Rand inner circle and, although 20-odd years younger, was her lover for a considerable period. This grand idea, of the importance of low self-esteem, was formulated by or with Rand sometime in 1955, certainly before the spring of 1956. But we have only Branden's word that he had any involvement then – about 14 years before he published anything on the subject. Rand would later claim that Branden had stolen her idea; after Branden rejected her sexually she became extremely bitter. However when Atlas Shrugged (which seems to have introduced the idea) was published, it was dedicated to both her husband and her lover!

Ayn Rand's Atlas Shrugged contains a speech by John Galt, Rand's superman hero that sets out three principles as the supreme and ruling values of human life:

1. Reason
2. Purpose
3. Self-esteem

I regret that I was unaware of the Ayn Rand connection around 25 years ago, when I was involved in education and attacking the idea that low self-esteem was the problem with difficult boys. Rand's anti-communism of course made her "Right Wing". The "Left Wing" trendy types that were pushing faulty self-esteem as the cause of problems with difficult adolescents would have been horrified at the connection. I had found Atlas Shrugged and other Rand books unreadable; recently I had to read some Rand to write this essay but did not enjoy the experience. I still have not finished any of her books.

Rand frequently used archaic meanings for common English words. Few skeptics would quibble about basing their ideas on reason, but today this means that we organise our ideas to avoid contradictions. Rand's philosophy involved a resurrection of the mediaeval idea of Rationalism, which meant something quite different – that one can acquire true knowledge of the world simply through thought. Modern science has rejected this idea – and Rand largely rejected science.

The Baumeister studies are very relevant to New Zealand today, but I suspect that few teachers or social workers involved with difficult and violent young males have even heard of them.

Jim Ring is a Nelson Skeptic.

Skeptics and the environment

Keith Garratt

When it comes to environmental issues, it's not always easy for a skeptic to decide where to stand

OVER the last few years, there has been a growing community of "environmental skeptics", who question the validity of global environmental concerns. Bjorn Lomborg's book The Skeptical Environmentalist is a major contribution to this strand of thought. At the 2004 Skeptics' Conference in Christchurch, Lance Kennedy presented some of the ideas that he espouses in his book Ecomyth. The final speaker of the conference, Owen McShane, presented his version of environmental skepticism, and an abridged version of his presentation appeared in Issue 74 of this journal.

Writers such as Lomborg, Kennedy and McShane provide interesting food for thought, and illustrate that in the environmental field, as in others, there is a need for careful critical thinking. However, there is a significant difference. In general, we skeptics tend to be skeptical about beliefs that run counter to mainstream scientific thought – astrology, paranormal phenomena, UFOs, creation science and alternative medical practices are examples. In contrast, environmental skeptics often bravely challenge the opinions of scientists who are specialists in the fields concerned. In this respect, environmental skeptics are somewhat equivalent to alternative medical practitioners or creation scientists. This does not mean that they are necessarily wrong, but it does mean that they have to demonstrate very good evidence to prove that the experts are wrong. For environmental skeptics, the adage "extraordinary claims demand extraordinary proof" applies to them rather than the objects of their skepticism.

In practice, environmental skeptics are often inconsistent and selective in their attitudes to science and professionals. For example, in his chapter on global warming, Kennedy largely ignores and discounts the work of the 2000+ climate scientists who make up the UN's International Panel on Climate Change (IPCC). Yet in his chapter on nature conservation, he states "We should question what enables the amateur environmentalists to set themselves up as 'experts' and deny the analysis and

planning of professionals." Having made this statement, it is interesting that he feels that he is qualified to state categorically that "Global warming and its consequences are an unproven theory." This statement is suspiciously similar to those made by "creation scientists" in criticism of evolution theory. In fact, I see parallels between the history of the evolution debate and the current climate change debate. It may be that in 100 years' time, those that continue to deny the reality of climate change will be seen as the lunatic fringe minority and objects of ridicule for skeptics of the time.

In other ways also, environmental skeptics display some of the characteristics of those who we as skeptics would normally challenge. For example, I believe that the refusal to accept the reality of global environmental problems is very similar to the refusal of most people to accept that there is no life after death. It seems that humans instinctively reject unpalatable news.

In a similar manner to people such as proponents of quack medicine, environmental skeptics are selective in their use of scientific information. In his talk to the conference, Lance Kennedy stressed the need to employ good science, and that it is essential to "rely on the numbers". Unfortunately, his book does not provide a good demonstration of this. For example, his chapter on global warming includes the graph in Figure 1. It is virtually meaningless, with no indication of the origin of the data, no data on the vertical axis and in fact no indication at all of what it purports to illustrate.

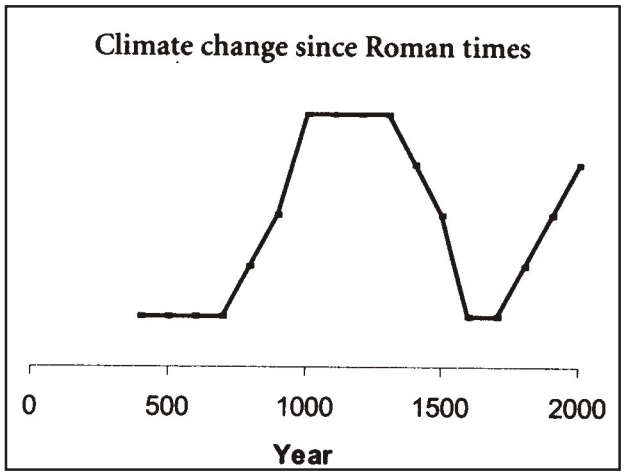


Figure 1. Climate Change since Roman times (from Ecomyth, Lance Kennedy)

Environmental skeptics often ignore rather than challenge the mainstream environmental science community. They focus much of their criticism on sometimes admittedly questionable claims by the more visible and extreme environmental lobby groups. Greenpeace, WWF and the World Resources Institute are favourite targets. The skeptics often fail to clarify that, at a less visible level, there is a huge body of rational and responsible scientists world-wide who confirm a high degree of real cause for environmental concern. This is somewhat akin to condemning the whole world of Islam by quoting Muslim philosophies as espoused by Al Qaeda.

In the fields that we are traditionally involved in, we skeptics get frustrated about the willingness of the media to give time and credence to mediums, alternative health practitioners and the like, without seeking an informed balanced viewpoint. In the environmental field, it is the professional practitioners who can be frustrated by the coverage given to the environmental skeptics (and, for that matter, the antics of radical environmental lobbyists).

Environmental Management

Owen McShane states that "We are rich enough to care about the environment...Truly poor people focus on finding tomorrow's breakfast." In fact, the great majority of environmental aid projects in developing countries through UN and other reputable international agencies focus on the impacts of environmental degradation on people. They explicitly address and focus on the need to protect and improve the welfare of those in poverty. None of the many international environmental projects that I encountered in 10 years' work in around 15 poor countries was based on the ecocentric anti-people philosophy that Owen McShane criticises.

As just one example of the direct impact of environmental mismanagement on human welfare, I mention Muinak, a village in northern Uzbekistan. Up until the 1960s, Muinak was the home for a fleet of fishing trawlers and a fish factory, as part of a fishing industry that took some 40,000 tonnes of fish per year from the Aral Sea. Under the direction of Soviet central planning in Moscow, the waters from the two major rivers feeding the Aral Sea were taken for irrigation of cotton crops. The Aral Sea is now a remnant of its former self, and the fishing industry is gone. When I visited Muinak about four years ago, the trawlers were rusting hulks in the sand. Muinak was over

100 kilometres from the water's edge, and was fast becoming a ghost town. Most poignantly, the town's World War II memorial, built on the sea cliffs overlooking the point where local soldiers embarked to cross the Aral Sea to join the war effort, now looks out over desert stretching to the horizon and beyond.

A particular concern that I have is that environmental skeptics (and for that matter some environmental lobbyists) tend to think in time scales that are far too short. A profound influence on my thinking was the marvellous "Time-Line" installation by Bill Taylor that we saw at Victoria University at the 2003 Skeptics Conference (NZ Skeptic 70). In brief, the 4.6 billion year life of Earth was represented by a cord 4.6 km long. On this basis, the 2000 years since the dawn of the Christian era occupied the final two millimetres.

I find it amazing and somewhat sobering to consider that, on this scale, the dawn of the Industrial Revolution occurred only 0.15 millimetres ago. There is no question that in that instant of geological time, humans have wrought major changes to our global environment. For example, it is an accepted fact that recent human activity has caused measurable changes to the composition of the Earth's atmosphere, and in particular the concentration of the so-called "greenhouse gases". The debate is not about whether these changes have occurred, but whether they are causing climate change. To me, that is almost academic. The fact that, in such a blink of time, we have caused measurable changes to the atmosphere that sustains all life is adequate cause for concern.

The Resource Management Act requires us to consider the needs of future generations. Owen McShane talked about the difficulty of this concept, because the future generations are walking away in front of us, so that we never get there. To me, this indicated that he sees "future generations" in the very short term, meaning our immediate successors, our children and grandchildren. I see things quite differently and in a longer term. Given the headlong pace of change and impact in just the last hundred years, my concern is for the way the 20th and 21st Century generations might be viewed in say 500 years (0.5 mm), 1000 years (1 mm), or even longer. I suspect that if the human lifespan was really the 500-800 years claimed for the Old Testament patriarchs, self-interest would assure that we would have quite a different attitude to the future state of the world.

I suspect that if the human lifespan was really the 500-800 years claimed for the Old Testament patriarchs, self-interest would assure that we would have quite a different attitude to the future state of the world.

Environmental skeptics tend to airily dismiss energy concerns by saying that we have enough fossil fuels to last part or all of this century. Again, this is short term thinking. While one may argue about the remaining life of reserves of fossil fuels, the inescapable fact is that they are a finite resource. There is no doubt whatsoever that, on a geological or evolutionary timescale, the period in which humans have been able to develop and maintain a lifestyle that relied on one-off extraction of fossil fuels will be a mere instant of history.

Loss of Forests

On the subject of forest loss, Lance Kennedy states that world forest cover has increased from 1950 to the present – from 40 million to 43 million square kilometres. In fact, the 2000 Global Forest Resources Assessment by the Food and Agriculture Organisation of the UN puts the current figure at 39 million. More importantly, its best assessment is that there was a net global forest loss in the 1990s of about 2.2 %. This is equivalent to an area the size of New Zealand each three years. Again, this apparently small percentage figure is very serious if considered in any form of medium or long-term time frame.

For tropical forests, environmental skeptics accept that there is a rate of loss of about 0.5% per year, but dismiss this as being of little cause for concern. Again, this is in fact a very high rate of loss both in absolute area and if considered in the context of even a medium time frame of say 100 years.

Some environmental skeptics dismiss concerns about any future scarcity of fossil fuels and their polluting effect by suggesting that they will be replaced by hydrogen as a source of energy for transport. In reality, hydrogen is not a fundamental energy source, but only a medium to transport energy,

To page 12

Compiled by David Riddell

Geller offers to exorcise artwork

The Scottish border city of Carlisle says a stone artwork commissioned to mark the millennium has brought floods, pestilence and sporting humiliation, but an unlikely white knight is riding to their rescue (Dominion Post, 10 March). The Cursing Stone is a 14-tonne granite rock inscribed with an ancient curse against robbers, but since it was put in a city museum in 2001 the region has been plagued by foot and mouth disease, a devastating flood and factory closures. Perhaps worst of all, the Carlisle United soccer team has dropped a division.

Israeli spoon-bender Uri Geller has offered to take the stone back to his village where, he says, the Domesday Book records an ancient healing centre. "All the ley lines converge on my garden," he added. "I believe the curse can be exorcised. I will use my pendulum and cleanse the stone of any evil forces. After that I would like to keep it in my garden. It is a work of art."

Chinese New Year: Things should improve a bit

Fortune tellers expect the Year of the Rooster, which began in early February, will be better than the previous Year of the Monkey, but not by much (Dominion Post, 7 February). Some of the biggest earthquakes have happened in Rooster years, and more could be expected in this one, said Peter So, a Hong Kong feng shui master. Another feng shui exponent, Raymond Lo, was more upbeat, noting that World War II had ended in a Year of the Rooster. He predicted a more peaceful time in the Middle East and some victories over terrorism. Osama bin Laden will remain at large, however.

All this was reported before the recent earthquake in Indonesia, so that's one hit for the feng shui masters. It'll be interesting to see how the rest of the year goes.

Niwa studies "indicators"

A National Institute of Water and Atmospheric Research (Niwa) scientist has spent three years studying traditional Maori forecasts of weather and climate (Sunday Star-Times, 17 April). Darren King has been working with two iwi on the ways they predicted such events as a storm brewing at sea, or whether a growing season would be hot or cool. If five-finger trees flowered in the top branches first, for example, it was taken as a sign that the season would be cool and unproductive. Flowers appearing first on the bottom branches indicated a warm, bountiful season.

For Ngati Pare, a shrill chorus of morepork meant inclement weather approaching, while the direction and shape of the ash cloud above White Is was also a useful sign. These signs were not taken in isolation: "They would look at a number of different indicators and if the indicators were all pointing in roughly the same direction then they'd make a decision."

King said there were important lessons to be learned from Maori histories. "There is an example from Kai Tahu tradition where they talk about a mass migration of people from the South Island to the North Island some three or four hundred years ago. This oral history is consistent with palaeoclimatic records that show a very cool period, the Little Ice Age, in New Zealand. It helps to corroborate western science in reconstructing past climate."

King says there are no plans to scientifically validate the traditional indicators – that decision must be made by Maori.

No surprises in British X-files

The British Government's Flying Saucer Working Party has finally released secret papers detailing its investigations into UFO reports, 54 years after it wound up (Dominion Post, 5 February). The group concluded further investigation would require a worldwide network of observers and radar stations, but strongly recommended no further study be undertaken, "unless and until some material evidence becomes available."

The group praised the observations of a Derby fireman of a luminous body travelling at high speed, but concluded it was "undoubtedly a meteorite." They also concluded a Flight Lieutenant Hubbard was either the victim of an optical illusion or had "deceived himself" about the shape and speed of an object he reported as "a flat disc, light pearl grey in colour ... executing a series of S-turns and oscillating."

In the interim, UFO sightings have continued unabated. The

latest Ministry of Defence document shows 91 sightings were recorded last year, with a dozen increasingly dramatic visitations reported from West Kilbride, on the southwest coast of Scotland.

Britain's UFO spotters were unimpressed by the documents' release. Judith Jafar, chair of the British UFO Research Association, said: "It is a pointless exercise because the government is not going to release any files that are contentious in any way."

A letter accompanying the release of the report states: "The MoD does not have any expertise or role in respect of UFO/flying saucer matters or the question of the existence or otherwise of extraterrestrial life forms, about which it remains totally open-minded."

Death the "ultimate orgasm""

A former Commonwealth Games sprint champion has spent much of his recent life researching death (Waikato Times, 16 April). Mike Agostini, 70, was born in Trinidad but now lives in Australia, and has devoted the last two of his nine books to the issue. The first of these, titled Death – the Ultimate Orgasm, contends that many who have had Near Death Experiences say the process of dying is the ultimate ecstatic experience.

Agostini has collected many stories from members of the public, and celebrities such as Olivia Newton-John and Cathy Freeman, about their encounters with the Beyond. Australian Liberal politician Tony Staley tells how he recovered after being declared clinically dead in a road accident: "It felt as if I was floating in the sky, wrapped in a light coccoon of cotton wool, spinning slowly round and round ... everything was coloured pink." He said the experience removed all fear he ever had of dying, or of death itself.

Says Agostini, "If, as some claim, this is all some sort of madness and delusion, then there are many more mad and disillusioned people than is generally acknowledged."

Gibberish makes the cut

A string of gibberish generated by a computer has been accepted as a conference paper (Herald, 16 April). Jeremy Stribling and two fellow Massachusetts Institute of Technology (MIT) graduate students questioned the standard of some conferences and wrote a program to generate research papers, complete with nonsensical text, charts and diagrams.

Two papers were submitted to the World Multiconference on Systemics, Cybernetics and Informatics, scheduled for 10-13 July in Orlando, Florida. One, entitled Rooter: A Methodology for the Typical Unification of Access Points and Redundancy, was accepted for presentation. It includes such gems as: "the model for our heuristic consists of four independent components: simulated annealing, active networks, flexible modalities, and the study of reinforcement learning" and "We implemented our scatter/gather I/O server in Simula-67, augmented with opportunistically pipelined extensions."

The prank recalled New York University physicist Alan Sokal's 1996 hoax, in which he successfully submitted a paper of meaningless mumbo-jumbo to the journal Social Text. Stribling said he and his colleagues had not heard about that affair until after they had submitted their paper.

Conference organiser Nagib Callaos said they were reviewing their acceptance procedures.

Electricity not for the sensitive

Britain's National Radiological Protection Board is reviewing scientific studies of "electromagnetic hypersensitivity" (EHS) (Dominion Post, 28 January). The NZ$1.9 million studies will review the literature on EHS, a condition which complementary medicine specialist David Dowson thinks is increasing in prevalence. He has about 10 patients he believes to be suffering from the complaint.

Brian Stein, a Leicestershire-based company CEO, says he suffers to such an extent he has to switch the mains off to get to sleep. About four years ago he began to get severe pains in his ear while using the mobile phone. Then he got headaches and pains while he was near computers and in his car. He can no longer watch television, go the cinema or listen to music that comes from devices plugged into the mains.

Swedish neuroscientist Olle Johansson says he has shown in experiments that there is an increase in mast cells near the surface of the skin when exposed to electromagnetic fields, a similar reaction to that when it is exposed to radioactive material. "The human brain has an electrical field so if you put sources of EMFs nearby, it is not surprising that you get interference, interaction with systems and damage to cells and molecules," he said.

From page 9

somewhat equivalent to electrical cables or batteries. Production of hydrogen itself requires huge energy inputs. Current technologies to produce hydrogen either use fossil fuels as a base (with large energy losses on the way through), or require electrical energy to produce it by electrolysis of water, again with energy losses in the process. For the moment, there seems little prospect of achieving the required dramatic increase in electricity production other than by using fossil fuels or nuclear energy, which of course is no more than a relocation of the same problem.

Both Lomborg and Kennedy ridicule pessimistic writers of previous decades. They paint a rosy picture of the current situation and point out how much better things are than such writers' forecasts. What seems to escape them is that all such earlier predictions had an underlying message, "If we don't change our ways, ... will happen." In fact, the improvements that Lomborg and Kennedy are now trumpeting are in nearly every case because governments and society responded to the concerns that grew so rapidly in the 60s and 70s, and did change their ways.

Ironically, having criticised the weaknesses in earlier predictions, Lomborg and Kennedy are willing to make or embrace unsubstantiated predictions that suit their arguments. For example, in discussing oil prices, Lomborg said that "It is also expected that the oil price will once again decline from $27 to the low $20s until 2020." As I write this, the price is hovering in the mid-$50s.

Kennedy's optimistic predictions are of a more general nature, apparently based more on a touching faith in science and technology rather than on rational analysis. They read rather like the confident predictions of a clairvoyant or an evangelist. For example, in discussing the predicted world population size in the middle of this century, he states "The world will be able to nourish such numbers by the time growth reaches this point. This ability will come from improvements in biotechnology and in other sciences, and in the increase of prosperity and agricultural efficiency in developing nations. The pessimists will again be wrong."

This article is not a call to ignore and ridicule the work and beliefs of environmental skeptics. In this as in other fields there is a need for critical thinking. Having worked in the environmental field for some 30 years both in New Zealand and elsewhere, I have my own doubts about certain aspects. I have my own concerns about both the philosophy and application of the Resource Management Act.

However, skeptics do need to appreciate that environmental skepticism is of a different character to skepticism as we usually understand it, and needs to be approached with caution. It is easy to criticise mediums, psychics, homeopaths and spoon benders, with little fear of exposing ourselves to credible scientific challenge. If we do join in the environmental skepticism debate, let us be sure that we do so with the same quality of informed critical thinking and respect for all the facts that we espouse in our other activities.

Following a 30 year career in the public service, Keith Garratt spent some 10 years as an international environmental management consultant, He is now semi-retired in Rotorua.

"Noah's ark" tests negative

A New Zealander's quest to find Noah's Ark has suffered a double blow, with two samples he gathered in Turkey turning out to be rock, not petrified timber. Ross Patterson delivered the samples to crown research institute Geological and Nuclear Sciences (GNS) in Wellington. Senior geologist Hamish Campbell, who examined the samples, said they were not wood or fossil material, but volcanic rock.

One of the samples had "a lovely platey fabric" and Dr Campbell said he could see why Mr Patterson thought they might be fossil wood. "I'm all for somebody chasing something like this – it makes life interesting. GNS offers a service and we are very happy to sample rock in this way."

Mr Patterson, 40, a freelance computer programmer based in Whangarei and Lower Hutt, visited the Mt Ararat region with his brother Keith Patterson, Whangarei retired pilot Geoff McCall, and three non-denominational friends from the United States and Sweden. Mr Patterson took his samples from the surface of the site, as the group did not have a permit to dig.

Mr Patterson said that despite his sample results, he would not give up and had "only scratched the surface". He hoped to return next year when an American university would carry out another scan, and use it as a basis to apply for permits to excavate.

- Julia Mahoney, 9 November, **www.stuff.co.nz**

Something to Laugh About

Vicki Hyde

THERE'S a stereotype of card-carrying members of the Skeptics Society that we're dour, humour-less, cynical nay-sayers; depressed Eeyores not cheerful Tiggers. Like most stereotypes, it's 95% wrong.

I'm often asked what characterises a member of the Skeptics, and I think of the diverse opinions, the range of religious and political beliefs, the spectrum of occupations and interests. Apart from a compulsive inquisitiveness about the world, the only other major thing all Skeptics seem to have in common is a large capacity for laughter.

The stereotype, and its counter, was brought home to me when two women at their first Skeptics Conference said that they had never expected to laugh so much. Skeptics conferences are full of laughter, we recognise the absurdities of the human condition with a wry appreciation for the foibles of the human spirit.

And yes we laugh, sometimes, in order that we might not weep. That laughter is cathartic in a sense. For without it, it is hard to face the exploitation of the vulnerable that underpins so much of what is referred to as the "New Age" movement. That exploitation comes in so many forms, whether it's extracting thousands of dollars from grief-stricken people in the name of "comforting them"; or diverting children from effective medical treatment to die in shonky cancer clinics far from home.

Bob Hope, who knew a thing or two about laughter, said that it can transform almost unbearable tears into something bearable, even hopeful.

I think that's what Skeptics do when we laugh. We see it as an expression of hope in the future. Or perhaps that hope is more to do with what the American essayist Agnes Repplier said of laughter when she wrote:

> What monstrous absurdities and paradoxes have resisted whole batteries of serious arguments, and then crumbled swiftly into dust before the ringing death-knell of a laugh!

Now there's something every Skeptic could hope for!

A laugh is certainly a powerful force against pompousness and an antidote to inane ideas, whether it's the Emperor parading in his altogether, or the more serious stupidities of things like New Age nostrums, social stereotypes and political posturing.

Laughter is said to be the first evidence of freedom – it's no coincidence that the most totalitarian societies are those in which the sound of laughter is a rare thing, even a dangerous one. It was a child in the story of the Emperor's new clothes who laughed at his ruler's foolishness; the adults didn't dare. But even in more secure surroundings, we rarely let forth with the giggles, the guffaws, the hooting to be heard in any playground.

This was brought home to me when I took my family to see the Taki Rua production, "The Untold Tales of Maui". Its blend of satire, social commentary and slapstick had the audience killing itself with laughter, real rib-cracking stuff that left you sore and smiling. As we left the theatre, my 12-year-old son remarked that he'd never been anywhere where he'd seen adults laugh en masse, he didn't know that adults could behave like that. It was an offhand comment that stopped me in my tracks.

Adults don't laugh enough.

We've seen footage of the laughter clubs in India where people gather for a morning laughter workout; there's been the Robin Williams film "Patch Adams" about the doctor who dispensed medicine wearing a red nose and clown shoes. There are many, many claims for the therapeutic value of laughter and its contribution to well-being. It's supposed to reduce stress hormone levels, lower blood pressure and stimulate circulation, elevate one's mood and raise pain thresholds. Some enthusiasts have talked of a world-wide movement designed to help stone-cold sober adults benefit from a belly laugh, leading to a healthier, friendlier world.

While, as a Skeptic, I can appreciate the fact that the hard evidence may not be there for such optimism, as a mother, I rather like the thought that my children could live in a world where the sound of adults laughing is not something to be surprised about.

Vicki Hyde is chair-entity of the NZ Skeptics. This article was originally presented on National Radio's Sunday Supplement.

Articles and letters show "political bias"

IT IS with sadness that I see that the Skeptic is still accepting articles and letters with political bias. I would like to spend much of this letter countering some of Owen McShane's arguments from his article "Why are we crying into our beer?", but I see we are still arguing in the pages of our magazine about science. It would be really nice if Jim Ring or C Morris could explain to me and I'm sure others who are puzzled by this whole affair, as to what legitimate arguments between legitimate scientists have to do with scepticism.

Having got that off my chest, Owen McShane's article does have some superficial nods in the direction of science versus pseudo-science, but I was reacting more I suspect to his political opinions than any science involved.

McShane rightly points out that there are some silly opinions around, but neglects to mention that some of these opinions about science come from the libertarian right as well as the left. It is difficult to understand what he wants us to do about risk, apart from just leave it alone. No one in their right mind wants to cut out all risky activity, but some would seem to be more risky than others, and one of the few things that right-wing economists and I would agree on, is that the market is not good at coping with externalities. These are costs or benefits to third parties resulting from productive activity. Pollution is one of these costs.

The problem with negative results from market activity is often that nothing is done until the damage is too expensive to reverse. And while I am probably rich enough to value clean air and water, I would rather prevent them from being polluted than wait for them to be polluted and pay for the cleanup. On the whole this can be done without a great deal of expense. The problem is that free marketers and large corporations always oppose this until public pressure forces them to come to terms with it.

What individual ownership of private property has to do with all this I fail to see, except for the usual mantra from the new right that it is a sacred obligation for governments to allow it. Private property rights are relatively limited in China, but the economy seems to expand rapidly none the less. I fail to see what is sacred about it if it interferes with the public good, which excuse has been used by governments since time immemorial to take it off people to build motorways and so on.

McShane seems to think that the usual suspects, indigenous people, socialists, and environmentalists all think that science is not to be believed, that nature is benign, that Western society is evil and so on. Not so, what most people want is to be able to adapt to his so-called open society in their own way, with some safeguards for their children's future. Yes nature is still dangerous, and the food supply is safer than it ever has been, (And I notice in fact that his arguments against Beck's key position are plagiarised from an internet review of his books) but if we don't make some effort to control the risks associated with unrestricted production, the world may well yet go to hell in a hand-basket and be very expensive to fix.

Bob Metcalfe

What would change their minds?

Both letters in the last issue of the Skeptic questioned the theory of anthropogenic global warming, and were intelligently written (sadly, a rare occurrence in this debate). Unfortunately, they failed to fully address the challenge I had previously posed: to come up with a scenario that would make them change their minds.

Jim Ring says that nobody has won a Nobel Prize or other scientific recognition for anthropogenic climate change. He ignores the fact that the person who first published on anthropogenic warming, Svante Arrhenius in 1896, was indeed awarded the Nobel Prize for chemistry in 1903 – just two years after the Nobel awards had started. Ring also fails (like many others) to appreciate the subtle but important difference between predictions – which the IPCC does not do – and forecasts, which are the logical consequence of scenarios, or sets of assumptions. For example, nobody can reliably predict what steps the human race will take to reduce the consumption of fossil fuels, but we can make a stab at forecasting the consequences of a given course of action. The fact that recent IPCC reports contain more scenarios is not because predictions are "getting vaguer". It is

because computers have more grunt and we can assess more possibilities.

C Morris fails to realise that Mann's infamous 1998 "hockey stick" graph is almost irrelevant to the global warming theory, having been published over 100 years after its formulation. Perhaps some physicist could correct me here, but my understanding is the Stefan-Boltzman theory of blackbody radiation, as developed in 1879, can be used to calculate the temperature of the Earth as if there were no atmosphere. Laboratory experiments can show the warming potential of different gases. Confirmation at the planetary scale of the "Greenhouse Effect" is to be seen in the fact that the average surface temperature of the Earth is about +15ºC, instead of -18ºC as predicted by the Stefan-Boltzman equation. The planets Mars and Venus have also confirmed the theory for different temperatures and gaseous concentrations, as have records of Earth's palaeo-climate.

There is no serious argument in the scientific community about the reality of the physics: add more greenhouse gases to the atmosphere, and – all else being equal – the surface of the planet will warm. The debate is entirely about the magnitude of this effect, particularly in relation to the level of background variability. There is also worthwhile discussion about the efficacy and cost-efficiency of attempting to do anything about it.

To conclude: this topic should be debated in the pages of scientific journals and is entirely out of place in NZ Skeptic magazine. It is not in the same category as ghosts, spoon-bending or astrology. The scientific illiteracy of some Greenhouse Skeptics (not, I hasten to add, the valid contributions of your recent correspondents) does the whole organisation no credit.

Piers Maclaren

(Quite agree. This issue has now had a very good thrashing. How about you all write about something else for a change? -ed.

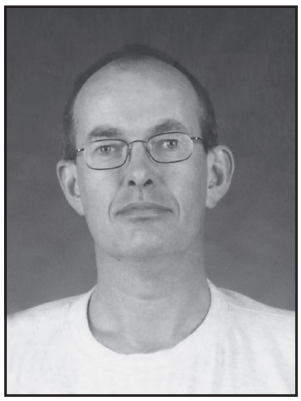
Stereo connections

I was reading a magazine in the doctor's surgery the other day, not something I would normally read, but something I like a glance at every now and then to see what I can't afford. It was a consumer electronics magazine, and in it was an article where someone was reviewing stereo connection cable. Interesting, I thought, how on earth could cable make a noticeable difference to stereo sound? Well, the reviewer seemed to think there was an obvious difference as he recommended one above the others, but it set me to wondering about the science involved in this area of consumerism. So I fired off an email to the editor of the magazine asking if comparisons between pieces of equipment for reviews tests were done blind. To give them credit I did receive a return email but not exactly an answer to my question, just the statement that there was a lot of hype in the cable market, and some other obfuscation. So I then fired off an email to a rival magazine, and again received a reply quite politely saying that blind tests were not done very often because they were "expensive". But, I asked why on earth should anyone take any notice of someone's opinion if we can't guarantee that they can tell one piece of equipment from another without plugging it in themselves? A question to which I am still waiting in answer.

I thought I might as well go the whole hog and rang Consumer to see if their comparative equipment tests were done blind. The woman I talked to didn't know what blind testing was, and refused to let me talk to someone who might. Incidentally, if anyone associated with Consumer magazine is a member of the Skeptics and by chance reads this, your organisation is distinctly unfriendly to the public, considering it takes public money as far as I know.

Now I know that pseudoscience probably has much more urgent victims then those who buy expensive stereo equipment, but it would seem to me that with the Skeptics support base presumably knowing quite a bit about science that this might be a more fertile area for investigation in your pages than the rather futile and constant arguments about global warming, which as far as I can see is simply a debate between reputable scientists. So what about it? Does anyone know enough about the science of elec-trical conductivity to tell me if something worth $300-odd a metre will make my stereo sound better than the rather scruffy bits of copper wire that I stuff into little holes and hope for the best. I hope that sometime in the future we may award one of these glossies the bent spoon, they seem to me to well deserve it.

Bob Metcalfe



Of feeding tubes and foetuses

NOW that Terri Schiavo has been allowed to die peacefully there is an opportunity to reflect on the matter free from the hysteria and religious arguments advanced as an excuse to maintain her in a vegetative state. When discussing the ethics of the situation with a local surgeon he commented that the main problem was that the feeding tube should never have been inserted in the first place.

A feeding tube is surgically inserted into the stomach through a hole in the abdominal wall. Once such medical interventions have been made it is very hard to reverse them. In this case the debate appears to have been hijacked by Catholic pressure groups.

As a doctor I continue to make decisions to withdraw or stop treatment when the situation is hopeless. I do not find it difficult because the process is based on commonsense, logic and ethical considerations, all qualities familiar to readers. Of paramount importance is the question – "what is in the best interests of the patient?" It can be in the interests of the patient to die quietly and peacefully. This is partly influenced by the wishes of next of kin and family and in my experience it is usually possible to come to a consensus and make the right decision.

A Google search returned 5 million hits for "Schiavo" and it is well worth surfing a few sites to gauge the depth of feelings stirred up by this event.

Aborted foetuses and stem cell injections

Given the huge number of abortions taking place in most countries it was inevitable that somebody would dream up a commercial use for the aborted foetuses. The idea is that undifferentiated stem cells from the foetus are injected into a diseased or injured area and somehow differentiate into new cells in that tissue.

Motor neurone disease (MND) is a degenerative condition of the neurones controlling muscle movement. It affects both upper motor neurones (ie brain) and lower motor neurones (ie spinal cord). There is progressive paralysis and eventually death from pneumonia, which is in most cases a merciful release. Feeding tubes have been used in this condition, an act criticised by some as "striving officiously to keep alive."

An enterprising Chinese surgeon is treating MND by injecting 2 million stem cells directly into the brain and a NZ woman recently underwent this procedure. This has created huge media interest and the Dominion Post reported: "Before the operation Mrs — had difficulty swallowing, but afterwards drank a glass of juice in one go. That was really really exciting ... it was amazing, really amazing."

Yes, well, as we all know when something is reported as "amazing" it's more likely that there is a more mundane explanation. The Chinese surgeon has refused to conduct any clinical trials or publish any data in peer-reviewed journals. This is a hallmark of quackery. The stem cell injections make no scientific sense, as injections into the brain will do nothing for degeneration in the spinal cord.

This procedure remains experimental and should not be used on humans. Gazing into my crystal ball I predict that stem cell injections will prove to be a failure for treating MND.

Dominion Post 17 March, 23 March

Aborted foetuses, stem cell injections and beauty salons

In a grotesque parody of the activities of the Chinese surgeon, Moscow beauty salons are using stem cell injections to "rejuvenate skin and cure a raft of diseases" (The Guardian Weekly Vol 172 No18, April 22-28).

Ukrainian women are paid a few hundred dollars to have an abortion and the foetuses can be sold in Russia for thousands of dollars. Salons charge their clients up to $20,000 for a course of treatments. A professor of medicine is quoted as saying "We are talking about a

huge, corrupt and dangerous trade in quack therapies."

The whole process is marginally more advanced than the use of animal cells. Remember monkey glands? Recycling past quackery is now an industry but it's important to use more plausible treatments, in this case human foetal cells.

Lyprinol

Having failed as a cancer cure, the mussel extract is now touted as beneficial for asthma and is being marketed as a dietary supplement. The distributors have learned their lesson and are avoiding making the same therapeutic claims that breached the Medicines Act in 1999 when it sold more than 2 million dollars worth in one day.

Australian athlete Jana Pittman, who takes it for her chronic asthma, is now promoting Lyprinol. If, as claimed, Lyprinol has an anti-inflammatory activity it may well help asthma, which is an inflammatory disorder of the airways. This is why inhaled steroids are so effective in preventing asthma. It is difficult to see why an oral preparation should work in the same way.

It will be very easy to perform a randomised controlled trial (RCT) of Lyprinol and gazing into my crystal ball once again I predict that Lyprinol will turn out to be a placebo. As it is being sold through Asian health shops, my advice to the distributors is to put a powerful steroid (say 20mg prednisone) into each capsule. This sort of adulteration of ineffective products with effective conventional drugs is already commonplace in Chinese alternative medicine.

Chinese "Herbal" Medicines

I have in the past referred to traditional Chinese herbalism as "Kentucky Fried Medicine" because they contain secret herbs and spices. If they appear to work that is easily explained by the placebo effect. The preparations that do have a dramatic effect are usually adulterated with conventional medicines such as steroids and other non-steroidal anti-inflammatory drugs (NSAIDs). Medsafe (**www.medsafe.govt.nz/hot.htm**) recently warned against three herbal products which turned out to contain frusemide (a powerful diuretic), piroxicam (NSAID) and betamethasone (a powerful steroid).

Alternative Medicine Practitioners

Picton now has an osteopath with a B Ost (Hons). It beggars belief that the study of such a pseudoscience can be rewarded with an honours degree, but New Zealand has the NZQA and as long as they have certified your educational process anything goes.

Australian naturopath Gary Martin was in NZ recently promoting his crazy ideas about dentistry and health. According to the article "he said he had clinical proof connecting serious and terminal diseases to dental infections caused by mercury fillings and root canals." It annoys me that lazy journalists allow people to get away with making claims like this without demanding written proof such as published papers, clinical notes and other forms of verifiable evidence. Even the reporting is faulty. How does a mercury filling cause an infection? The other thing that annoys me is the large amount of space devoted to such articles, which are effectively advertising puffery.

Blenheim recently held a "Psychic & Healing Fair" where you could attend an open discussion with an osteopath about "the issue of whether to vaccinate your child against disease." Could there be anything more ridiculous?

Into the mouths of babes?

Psychiatrists continue to insist that ADHD is under-diagnosed and this has led me to flippantly suggest that we put methylphenidate (Ritalin) into the water supply as a public health measure. Doctors are the main source of such street drugs, which arrive for sale via legal prescriptions.

When the actor Natalie Portman was interviewed recently she had some insightful comments about Ritalin and ADHD. "People at my school used to use Ritalin like a party drug, or a study drug…and it's easy to get because ADHD is so heavily over-diagnosed." Tell us something we don't know.

Then we have psychologists claiming that ADHD is undiagnosed in many low income families, particularly solo parent families. It is claimed that such families are being forced to visit food banks as they have spent their grocery money on repairing windows or furniture destroyed by their children. Parents are however, entitled to a weekly disability allowance but only when their child's condition has been "diagnosed". They should call it the "Ritalin allowance".

John Welch lives in Picton and is a retired RNZAF medical officer.

Food irradiation causes cancer, and the sky is falling

Raymond Richards

THE Green Party does not have a good record when it comes to scepticism. In 2002, party co-leader Jeanette Fitzsimons was an ungracious winner of our bent spoon award for her support of "etheralised cosmic-astral influences" as a means of eradicating possums.

"They can do whatever they like with their silly bent spoon," she said. "Those people are completely obsessed, and I am not interested in giving them any further coverage or credibility."

Green MP Sue Kedgley, too, is no friend of scepticism. She is pushing for so-called alternative medicine to be funded by taxpayers. She wants statutory registration for naturopaths and other "complementary health practitioners" as a step toward integrating them into the public health system. In other words, Kedgley does not know the difference between quackery – which can be a matter of life and death – and scientific medicine.

She has named activist Jeremy Rifkin as one of her heroes. Rifkin is hostile to science. The late Harvard palaeontologist Stephen Jay Gould said one of Rifkin's books is "full of ludicrous, simple errors" and is "anti-intellectual propaganda masquerading as scholarship. I don't think I have ever read a shoddier work." Fortune magazine concluded: "Rifkin is a bit of a nut."

In 1998, Kedgley published Eating Safely in a Toxic World. The book shows an author who is suspicious of science and rationality. Her version of logic is evident on page 8, where Kedgley complains that non-dairy creamers contain no dairy products!

She has scared the public for years with spurious arguments against irradiated food. In 1999, Associate Health Minister Tuariki Delamere said all irradiated food would be labelled, "So if Sue Kedgley doesn't want to eat it, she doesn't have to eat it." But this concession was not good enough for Kedgley. Her response was: "Is he saying we could lace food with arsenic, and it's okay, as long as it's labelled?" She complained that consumers "do not want to eat food that has been nuked." On National Radio, she kept talking of "radioactive food," despite being corrected by the interviewer.

New Zealand has approved the irradiation of tropical fruits like mangoes, lychees and papayas. According to Kedgley, however, irradiation "can cause the formation of carcinogenic chemicals in mangoes and pawpaw." She claimed: "At the doses being considered for commercial use on vegetables and grains, irradiation could stimulate the production of aflatoxins – potent liver cancer-causing agents…." According to Sue Kedgley, then, irradiated food can cause cancer.

In fact, research has led the World Health Organization, the US Food and Drug Administration and the American Medical Association to approve food irradiation. It kills not just *E. coli* but also all the nasty germs and para-sites that slip into our food supply.

Human skin and intestines crawl with ordinary *E. coli*. But a few uncommon strains of the bacteria – especially the notorious *E. coli* O157:H7 – produce toxins. Ingest these toxic bacteria, and you suffer watery diarrhoea and stomach pain. You feel miserable, but these symptoms don't usually require medical attention – at least, in developed countries. In some cases, however, the toxins trigger the destruction of blood cells and cause renal failure, and can be deadly in children. Thus, food poisoning is a serious risk only for vulnerable populations, like the very young. For the rest of us, it is a rare annoyance caused mainly by inadequately cooked chicken or pork.

Meat is the most common source of *E. coli* O157:H7, but raw milk,

vegetables, and fruit juice have carried it in some outbreaks. The bug lives in the guts of about 1 % of cattle and contaminates meat when stomach contents spill where they shouldn't during slaughter. It also contaminates produce if farm wastewater enters the irrigation supply.

The good news is that rare meat doesn't have to be dangerous. Irradiators containing cobalt-60 or another radioactive source bombard food with gamma rays, killing bacteria and parasites. The radiation disrupts DNA, which germs need to survive. Lower doses will pasteurise food, that is, will kill the disease-causing organisms. Higher doses of radiation will completely sterilise food. The process is perfectly safe, leaves no funny taste or appearance, and prevents illness from *E. coli* O157:H7, salmonella, beef tapeworms, fish parasites, and trichinae in pork. Astronauts, patients in many hospitals, and people in dozens of countries eat irradiated food.

Gamma rays do not make food radioactive. Moreover, in a six-year study, scientists fed dogs and other animals irradiated chicken and found no evidence of increased cancer or other toxic effects. Other research found no harmful effects in humans who eat irradiated food.

Jeanette Fitzsimons and Sue Kedgley pose as people who think outside the square. But they need to make sure their thinking squares with the evidence.

Dr Raymond Richards is a senior lecturer in History and American Studies at Waikato University . He can be reached at ray@waikato.ac.nz

The Royal healing touch

Bernard Howard

THE medical community in Britain is suffering a severe attack of lèse majesté, and it is feared some distinguished heads will roll on Tower Green.

Prince Charles, in his untiring care for the health of his future subjects, has set up The Prince of Wales' Foundation for Integrated Health, and, with the help of several hundred thousand pounds of taxpayers' money, this Foundation has published Complementary Health Care: a guide for patients. It helps readers to locate homeopaths, reflexologists, craniosacral therapists, and other types of healer. This 45-page treasury is being sent free to all GPs in Britain.

This well-meaning attempt by the philanthropic heir to the throne and his disciples to help the sick has been spurned by the medical fraternity, in the harshest and most hurtful terms. The British Medical Association has criticised it for recommending treatments which have no evidential support. More biting remarks have come from Professor Edzard Ernst, occupant of Britain's only Chair of Complementary Medicine. When he saw a draft version, he said it was "hair-raisingly flimsy, misleading and dangerous". He offered to correct it free of charge, an offer which was declined (Of course! How dare he presume to rewrite a text which had the Imprimatur of HRH?).

Having seen the published version, the Professor is even more scathing (see **www.guardian.co.uk/g2/story/0,,1442930,00.html**) "... scandalous waste of public funds ... the most spurious I have seen for years ... reads like a promotional booklet".

No expense seems to have been spared in the production of the "Guide"; it is in full colour, with lots of photos of folk receiving various therapies. Though it concedes,even emphasises, the need to see your doctor and to keep him/her fully informed, the contents will otherwise be familiar to students of Complementary Medicine; no mention of evidence (though a scholarly-looking list of 141 references), much talk of "...believe that..." and "...used by many people for...." and of those mysterious entities beloved of these practitioners: "energy" and "meridians". There is, of course, no discussion of the mutually exclusive nature of some of these therapies, nor of the complete absence in many cases of evidence of efficacy. You know, of course, the meaning of the verb "to heal". It is therefore puzzling to see one of the 16 therapeutic modalities included in the "Guide" is known as "Healing". Surely it is not implied that none of the other 15 can cure your trouble? "Healing", in this context, looks to be our old fraudulent friend Therapeutic Touch. If you are visiting Britain, and feel the need for a little craniosacral therapy, help is at hand. The Guide, with relevant addresses, can be downloaded free from **www.fihealth.org.uk**. Be cheered, also, by the claim that over half the GPs in Britain will direct you to CAM practitioners; indeed, many have such people working in their medical centres.

If undelivered, return to:

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