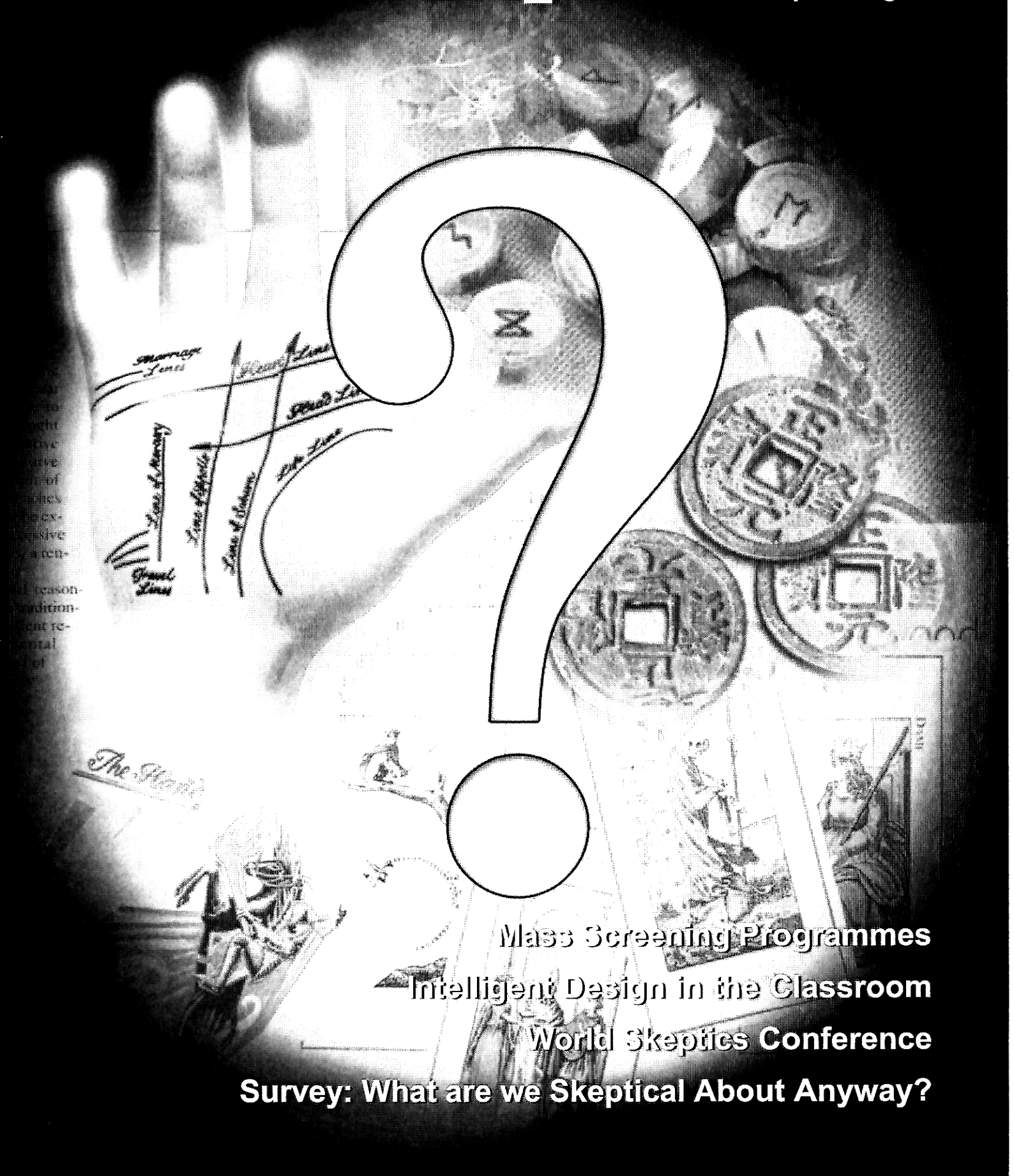


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Mass Screening Programmes
Intelligent Design in the Classroom
World Skeptics Conference

Survey: What are we Skeptical About Anyway?

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Contributions

Contributions are welcome and should be sent to:

Annette Taylor
122 Woodlands Rd
RD1, Hamilton
Email: number8@ihug.co.nz

Deadline for next issue: 10 October 2002

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.

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The Answer's not 42

HAMILTON is a progressive place where the difficult issues are tackled. Rather than being a cow town (we're not! we're not!), we sit around of a Friday evening and debate the Big Questions.

We had a phone call awhile back from someone from the Methodist Centre who wanted a skeptic to contribute to an evening entitled, "What Is Truth?" With four days' notice, we politely declined. However, a talk was coming up the following month looking at scientific and religious perspectives on the origin of the universe. And the month after that it was creation vs evolution.

We toddled along to the first of these and my other half David was keen to get his teeth into the next one. So we found ourselves, one recent wintery evening, ensconced amongst a group of fundamentalists. We did have support - two Coromandel skeptics came and cheered, as did some Auckland friends.

Rather than go into the evidence, David's plan was to explain how creationists really are not interested in this at all - for them the word of God is the yardstick by which all truth is measured and all evidence has to be harmonised with it. (See the Answers In Genesis Statement of Faith, answersingenesis.org/home/area/about/faith.asp). It's also important not to dignify the creationist position by giving the impression that there is a serious scientific debate about its validity.

The previous month someone from the local astronomical society had tried to encapsulate 15 billion years of cosmic history in 20 minutes, which led one person in the audience to say that it would take more faith to believe all that than the simple message in Genesis. It's fair to say most people didn't understand one word.

So - how did we do. Well, of course we won outright. But seriously - there was a lively, mostly enjoyable, discussion following and I got the feeling that a few people were jarred out of their former complacency. Pointing out that the human eye, rather than being an example of Intelligent Design, is in fact very poorly designed, had particular impact. A fun night was had by all, but is it worth doing this kind of thing? The answer has to be yes, if only to keep abreast of creationist tactics. They are an increasingly active bunch and it's necessary to counter their twaddle if scientific standards are to be maintained (see Warwick Don's article, this issue).

The annual conference is, of course, not far off now and if you haven't done so already, you really need to book. It's promising to be another rip-snorter, and kicks off on Friday the 13th! Black cats not welcome. There's a registration form at the back. So go to it.

Annette

Behind the Screen

Jim Ring

Mass screening programmes have generated considerable controversy in this country. But these programmes have inherent limitations, which need to be better understood

IN 1996 the *Skeptical Inquirer* published an article by John Allen Paulos on health statistics. Among other things this dealt with screening programmes. Evaluating these requires some knowledge of conditional probabilities, which are notoriously difficult for humans to understand.

Paulos presented his statistics in the form of a table; a modified version of this is shown in Table 1.

told by their doctor that s/he has tested positive, actually has the condition? The answer is 990/10980 or 9%.

In this hypothetical case the test is 99% accurate, a much higher accuracy rate than any practical test available for mass screening. Yet over 90% of those who test positive have been diagnosed incorrectly.

In the real world (where tests must be cheap and easy to run) a

likely to have its results swamped with false positives.

Consider a more practical example where the base rate is the same as previously, but there are 10% false negatives and positives, ie the test is 90% accurate. Again 1 million people are tested (Table 2, overleaf).

This time the total number testing positive is 100800. But nearly one hundred thousand of

Table 1. 1 million people are tested. Base rate (level of condition in population to be tested) is 0.1%. The level of false positives = 1%; level of false negatives = 1%

	Have the condition	Do not have the condition	Totals
Test Positive	990	9,990	10,980
Test Negative	10	989,010	989,020
Totals	1,000	999,000	1,000,000

Of the million people screened, one thousand (0.1%) will have the condition. Of these 1% will falsely test negative (10) and 99% will correctly exhibit the condition. So far it looks good, but 1% of those who do not have the condition also test positive, so that the total number who test positive is 10980. Remember that this is a very accurate test. So what are the odds that a random person who is

very good test might achieve 10% false negatives and positives. To some extent the total percentage of false results is fixed, but screening programmes wish to reduce the number of false negatives to the absolute minimum; in some countries they could be sued for failing to detect the condition. This can only be done by increasing the chance of false positives or inventing a better test. Any practical test is

them do not have the condition. The odds that any person who tested positive actually has the condition is 900/100800, or a little under 1%. This time, although 90% of these people have been correctly diagnosed, 99% of those who test positive have been diagnosed incorrectly.

In both these cases the incidence of the condition in the original population was 0.1%. In the first example the screened population testing positive had an incidence two orders of magnitude higher than the original population, but this was unrealistic. In the

Table 2. Base rate is 0.1%. Level of false positives = 10%; level of false negatives = 10%

	Have the condition	Do not have the condition	Totals
Test Positive	900	99,900	100,800
Test Negative	100	899,100	899,200
Totals	1,000	999,000	1,000,000

second example those testing positive in the screened population had an incidence one order of magnitude higher than the general population.

This is what a good mass screening test can do – to raise the incidence of the condition by one order of magnitude above the general population. However any person who tests positive is *unlikely* to have the condition and all who test positive must now be further investigated with a better test.

Table 3. Base rate is 1%; False negative rate = 20%; False positive rate = 10%

So screening programmes should not be aimed at the general population,

unless the condition has a very high incidence. Targeted screening does not often improve the accuracy of the tests, but it aims at a sub-population with a higher incidence of the condition. For example, screening for breast cancer (a relatively common condition anyway) is aimed at a particular age group.

Humans find it very difficult to assess screening, and doctors (unless specifically trained) are little better than the rest of the population. It has been shown fairly convincingly that data are most readily understood when presented in tables as above. For example the data in Table 3 was presented to doctors in the UK. Suppose they

had a patient who screened positive; what was the probability that that person actually had the condition?

When presented with the raw data, 95% of them gave an answer that was an order of magnitude too large. When shown the table (modified here for consistency with previous examples) about half correctly assessed the probability of a positive test indicating the presence of the disease.

This time the total number who test positive is 107 000. But nearly one hundred thousand of them do not have the condition. The odds that any person who tested positive actually has the condition are 8000/107 000 or about 7.5%. Now remember that nearly half the UK doctors, even when shown this table could not deduce the correct result. If your doctor suggests you should have a screening test, how good is this advice?

Patients are supposed to be supplied with information so that they can make an informed decision. Anybody who presents for a screening test in NZ may find it impossible to do this. My wife

attempted to get the data on breast screening from our local group. She had to explain the meaning of “false negative”, “false positive” and “base rate”. The last is a particularly slippery concept. From UK figures the chances of a 40-year-old woman developing breast cancer by the age of 60 is nearly 4% (this is the commonest form of cancer in women). However, when a sample of women in the 40-60 age group are screened, the number who should test positive is only about 0.2%. Only when they are screened *each year*, will the total of correct positives approach 4%.

The number of false positives (again using overseas figures) is about 20 times the number of correct positives so a women in a screening programme for 20 years will have a very good chance of at least one positive result, but a fairly low probability of actually having breast cancer. I do not think NZ women are well prepared for this.

The Nelson group eventually claimed that the statistics my wife wanted on NZ breast cancer screening did not seem to be available. But, they added, “we (the local lab) have *never* had a false negative.” From the recent experience of a close friend, who developed a malignancy a few

months after a screening test, we know this to be untrue. What they meant was that they had never seen a target and failed to diagnose it correctly as a possible malignancy requiring biopsy. This may have been true but it is no way to collect statistics.

Screening for breast cancer is generally aimed at the older age group. In the US a frequently quoted figure is that a woman now has a one in eight chance of developing breast cancer, which is higher than in the past. This figure is correct but it is a lifetime incidence risk; the reason it has risen is that on average women are living longer. The (breast cancer) mortality risk for women in the US is one in 28. A large number who develop the condition do so very late in life and die of some other condition before the breast cancer proves fatal.

Common Condition

Breast cancer is a relatively common condition and would appear well suited for a screening programme. The evaluation of early programmes seemed to show they offered considerable benefit in reducing the risk of death. However later programmes showed less benefit. In fact as techniques improved, screening apparently became less effective. This caused some alarm and a study published in 1999 by the Nordic Cochrane Centre in Copenhagen looked at programmes world wide, and attempted to better match screened populations with control groups. The authors claimed that women in screening programmes had no better chance of survival than unscreened populations. The

reactions of those running screening programmes (including those in NZ) were to ignore this finding and advise their clients to do the same.

If there are doubts as to the efficacy of screening for breast cancer, there must be greater

Cervical cancer is quite rare, so it is a poor candidate for a mass screening programme aimed at a large percentage of the female population

doubts about screening for other cancers in women, for other cancers are rarer. Any other screening programme should be very closely targeted. Unfortunately the risk factors for a disease may make targeting difficult. In New Zealand we have seen cases where people outside the target group have asked to be admitted into the screening programme, so they also "can enjoy the benefits". Better education is needed.

Late-onset diabetes is more common among Polynesians than among New Zealanders in general, and Polynesians have very sensibly accepted that this is true. Testing Polynesians over a certain age for diabetes makes sense, particularly as a test is quick, cheap and easy to apply. Testing only those over a certain body mass would be even more sensible but may get into problems of political correctness.

Cervical cancer is quite rare so it is a poor candidate for a mass screening programme aimed at a large percentage of the female population. The initial screening is fast and cheap. If the targeted group

has an incidence that is one order of magnitude higher than the general population, then the targeting is as good as most tests. Screening the whole female population for cervical cancer is a very dubious use of resources.

My wife and I were the only non-locals travelling on a bus in Fiji when we heard a radio interview urging "all women" to have cervical screening done regularly. The remarkably detailed description of the test caused incredible

embarrassment to the Fijian and Indian passengers; we had the greatest difficulty in concealing our amusement at the reaction. The process was subsidised by an overseas charity. In Fiji, where personal hygiene standards are very high, and (outside Suva) promiscuity rates pretty low, and where most people pay for nearly all health procedures, this seemed an incredibly poor use of international aid.

Assessment Impossible

Screening for cervical cancer has been in place in NZ for some time. Unfortunately we cannot assess the efficacy of the programme because proper records are not available. An attempt at an assessment was defeated by a provision of the Privacy Act. The recent case of a Gisborne lab was really a complaint that there were too many false negatives coming from a particular source. However this was complicated by a general assumption among the public and media that it is possible to eliminate false negatives. It should be realised that reducing false negatives can

only be achieved by increasing the percentage of false positives. As can be seen from the data above, it is false positives that bedevil screening programmes.

Efforts to sue labs for false negatives are likely to doom any screening programme. To some extent this has happened in the US with many labs refusing to conduct breast xray examinations, as the legal risks from the inevitable false negatives are horrendous.

Large sums are being spent in NZ on screening programmes; taxation provides the funds. Those running the programmes are convinced of their benefits, but it is legitimate to ask questions. Is this spending justified?

Some Post-Scripts:

January 15 2000 New Scientist P3: Ole Olsen & Peter Gøtzsche of the Nordic Cochrane Centre in Copenhagen published the original meta-analysis of seven

clinical trials in 2000. The resulting storm of protest, particularly from cancer charities, caused them to take another look. They have now reached the same conclusion: mammograms do not reduce breast cancer deaths and are unwarranted.

October 2001: In recent TV interviews some people concerned with breast cancer screening in NZ were asked to comment on this meta-analysis. Once again the NZ commentators stated firmly that they were certain that screening programmes in NZ "had saved lives" but suggested no evidence to support their view.

March 23 2002 New Scientist P6: The International Agency for Research on Cancer (IARC) funded by the WHO claims to have reviewed all the available evidence. They conclude that screening women below the age of 50 is not worthwhile. However, screening women aged from 50-69 every two years reduces the

risk of dying of breast cancer by 35%.

According to New Scientist, the figures from Britain are that of 1000 women aged 50, 20 will get breast cancer by the age of 60 (2%); of these six will die. Screening every two years would cut the death rate to four. [It is obvious that these are calculations, not the result of a controlled study!]

The IARC states that organised programmes of manual breast examination do not bring survival benefits (they call for more studies on these).

If NZ has similar rates then screening programmes aimed at 50-60 year old women should save approximately 50 lives per annum.

Jim Ring is a Nelson Skeptic

IDEAS TRAVEL IN UNEXPECTED DIRECTIONS

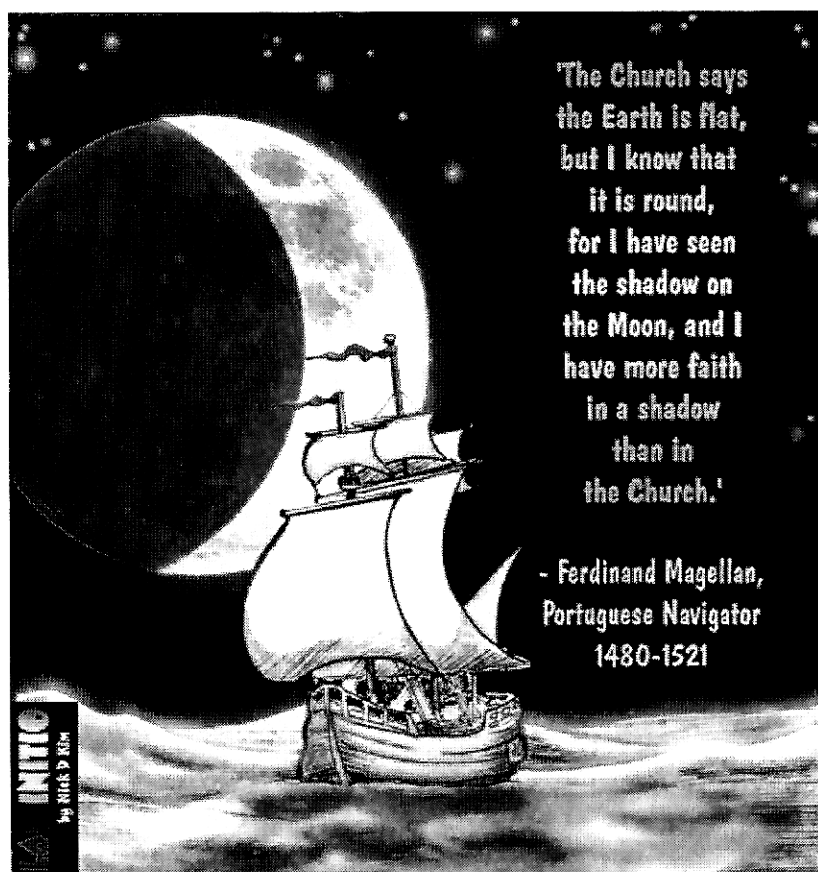
"...a pedigree of prodigious length"

C Darwin, *The Descent of Man*, 1871.

Pooh Bah "....I can trace my ancestry back to a protoplasmal primordial atomic globule."

WS Gilbert, *The Mikado*, 1885.

Many thanks to Bernard Howard for drawing this to our attention.



“Intelligent Design” in the Science Classroom

Warwick Don

A critique of “Walking with Beasts”, by Ian Wishart, Investigate Magazine, June 2002

A PROMINENT English state school, Emmanuel City Technological College, has recently decided to include creationism as a viable alternative to evolution in the science classroom. In the wake of this, Ian Wishart of Investigate magazine has written an article, “Walking With Beasts”, in which he conveys the impression that the status of organic evolution is very fragile indeed. Therefore he asks: “If Darwin’s Theory of Evolution is on such shaky ground in the upper reaches of science, why are New Zealand high school students still being taught the subject without any reference to the many controversies now dogging it?”

The article is a mixture of the old and the new – arguments against evolution which have long been the province of young-earth creationism and some from the most recent version of creationism, Intelligent Design (ID) theory. ID theory has its roots in creation “science”, which probably accounts for the retention of some of the arguments associated with that movement, and in some ways it can be regarded as a more sophisticated version of its predecessor. Most significantly, when examined closely, it turns out to be the old Argument from

Design in modern garb. At its core is the view that Darwinian theory is unable to account for life’s complexity – hence an Intelligent Designer must be invoked.

Sound familiar? William Paley’s watch immediately springs to mind. The only real difference between Paley and modern IDers is the incorporation of factors and processes at the biochemical and cellular levels of which Paley, of course, was unaware. Prominent names in the ID movement are Phillip Johnson (Darwin On Trial), Michael Behe (Darwin’s Black Box), Jonathan Wells (Icons of Evolution) and William Dembski (Intelligent Design: The Bridge Between Science and Theology).

A major contention of Wishart’s article is that “scientists are increasingly doubting the theory of evolution”. Unfortunately, he never really distinguishes clearly between the occurrence of evolution and its proposed mechanism, of which natural selection (Darwinism) is generally regarded as the chief agent of change. Consequently, the article switches from one aspect to the other in disconcerting fashion, such that, to the uninitiated, evolution itself appears seriously in doubt. Argument – the sign of a healthy

science, not one in decline – now pertains to the “how” of the process.

The idea that evolution is on its last legs will be familiar to those conversant with creationist attacks over the years. The article repeats the hoary and long discounted argument that the fossil record lacks the expected transitional forms. “Nowhere,” writes Wishart, “are there fossils that show a cat-monkey, or a horse-giraffe, or any other of the alleged half-breed species said to have existed.” Setting aside such ludicrous caricatures, excellent examples of transitional forms between major groups do exist (see *Evolution: the fossils say YES! NZ Skeptic*, Summer 2001).

Somewhat ironically, Wishart sheds extreme doubt on the possibility of modern whales originating from a “carnivorous, cow-like creature about the size of a wolf ... in a short period of geological time”. Apart from the “short period” amounting to at least 20 million years, the record of the rocks has revealed a fascinating series of forms, from whales with functional legs and ears like those of land mammals, to amphibious, wading and diving forms. (See *Scientific American*, May 2002).

[Incidentally, based on new fossil evidence, the mantle of whale ancestor has shifted from the mesonychids (alluded to above) to a related group, the artiodactyls, and more specifically to the hippopotami.]

He is equally astray when he refers to “the lack of evidence for human evolution”. Apparently, he is unaware of early ape-like hominids, such as *Ardipithecus ramidus*, *Australopithecus anamensis*, and *A. afarensis* (“Lucy”), let alone later members of *Australopithecus* and early members of the genus *Homo*, the genus to which our species belongs. He is similarly dismissive of early bird evolution. Worth noting in this regard is a recent burst of fossil discoveries which has revealed a great diversity of Mesozoic birds; even older finds of feathered dinosaurs have corroborated prediction. Scientists await in keen anticipation further plugging of gaps in these and other transitional phases of vertebrate evolution.

Evolution well-supported

Has evolution occurred? The answer is a resounding “yes”! Darwin himself established this fact, based on an impressive consilience of evidence from several independent lines of inquiry: comparative morphology, embryology and geographical distribution, to name just a few. Since Darwin’s day, new research areas such as genetics, cell biology and molecular biology have only strengthened the level of consilience, as have many significant finds in the fossil record.

Contrary to the impression continually being conveyed by anti-evolutionists, the occurrence of evolution is no longer an issue in biological science. The comparatively few scientists who seemingly question its validity are those who seem to have allowed

evolution and non-scientific implications derived from it. Unfortunately, this distinction, like that between the reality of evolution and the “how” of the process, tends to become blurred in the writing.) Scott continually stresses that science neither denies nor opposes

the supernatural, but ignores it for methodological reasons. She has expressed this necessary approach in colourful fashion: “You can’t put God in a test tube (or keep it out of one).” (For “God”, in the current context, read “Intelligent Designer”).

Drawing a line beyond which science is presumed unable to proceed is antithetical to the spirit of unfettered scientific inquiry. Is this the attitude we would wish to instil in developing and inquiring minds?

their philosophical and religious beliefs to cloud their scientific judgment, to the extent, in some cases, of even advocating what amounts to the teaching of “theistic science”, and hence threatening the integrity of science in the classroom.

The key reason why ID and other forms of creationism must be kept out of science education is that the former have, as an inherent element, an appeal to an entity which lies outside the scope of science, whereas science deals with that part of reality amenable to empirical inquiry. Alternative explanations must be testable against the *natural* world. As Eugenie Scott, an American anthropologist and science educationist, has pointed out, science today is based on a *necessary* methodological materialism, which is not to be confused with philosophical materialism or naturalism, to which scientists and others may or may not adhere. (Wishart, to his credit, does seem to recognise the distinction between acceptance of

Other points of confusion in the article are the conflation of “the origin of life” and “Big Bang theory” with organic evolution. There is a postulated continuity linking all aspects of an evolutionary universe, but each phase presents its own set of problems and requires its own specialised methodology. The conclusion that evolution has taken place, for example, rests on the evidence for it; the undoubted problems associated with the origin of the universe or with the origin of the very first life forms on this planet are irrelevant as far as organic evolution is concerned.

God of the Gaps

ID proponents tend to focus on such problem areas, which is akin to the God of the Gaps argument of earlier times. This unscientific approach is particularly apparent when a cornerstone (a very unstable one, I might add) of the ID movement is examined, namely, the idea of irreducible complexity, an idea alluded to in Wishart’s article. “By irreducibly complex”, writes Michael Behe, “I

mean a single system composed of several well-matched, interacting parts that contribute to the basic function, wherein the removal of any one of the parts causes the system to effectively stop functioning". He cites as examples of irreducible complexity, blood clotting and the movement of flagella (whiplike structures used by many microscopic organisms as swimming organelles). Such irreducibly complex structures and mechanisms, maintain IDers, could not have evolved in functional steps. The answer: intelligent design.

A Return to Paley

Setting aside the fact that reasonable naturalistic explanations do exist for many of these systems and structures (not yet satisfactorily formulated in other cases, admittedly), readers, I trust, will recognise a return to Paley in the whole idea of irreducible complexity. Drawing a line beyond which science is presumed unable to proceed is antithetical to the spirit of unfettered scientific inquiry. Is this the attitude we would wish to instil in developing and inquiring minds? And, as if this restriction were not enough, IDers would invoke some mysterious outsider as the "answer" to allegedly insoluble problems. (See the reviews of Darwin's Black Box: Nature 383: 227-228; American Scientist 85: 474-475.)

The use of selective quotations is a favourite ploy of creationists. They are lifted from the evolutionary literature in such a way as to convey meanings not intended by their authors. In his article, Wishart provides several quotations intended to show that all is not well in evolutionary circles. Space restriction allows extended discussion of only two. However,

these will serve to illustrate how misleading some selective quotations can be.

Lynn Margulis, Distinguished University Professor of Botany at the University of Massachusetts at Amhurst, is regarded in evolutionary circles as both innovator and maverick. She has been lauded for her work on cellular evolution, but her almost fanatical support of the Gaia hypothesis, considered by many scientists as unscientific, has not met with universal approval. In the article under review, several quotes by Margulis are gleaned from a profile article on her in Science 19 April 1991: 378-381. Here is how two of her statements (in italics for clarity) appear in Wishart's article: "Darwinists, she goads, *wallow in their zoological, capitalistic, competitive, cost-benefit interpretation of Darwin... Neo-Darwinism, which insists on [the slow accrual of mutation] is in a complete funk.*"

The Statements in Context

Now let us consider Margulis' first statement (in italics) in context: "Margulis defends herself and Gaia with the rhetorical verve that has long startled her colleagues. Her critics, she said in 1988, *just wallow in their zoological, capitalistic, competitive, cost-benefit interpretation of Darwin - having mistaken him.*" Note that Wishart makes no mention of Gaia; yet it is clearly its rejection on this occasion which particularly annoyed her and prompted this tirade. Such verbal salvos may be grist for the creationist mill (especially when misused), but what really matters in the end is that disputes of this kind are generally resolved by the self-correcting mechanism of science.

The second statement (shown again in italics below) is preceded in the *Science* article with a brief discussion of Margulis' valuable contribution to evolutionary change at the bacterial level. The writer then points out that "the controversial part of Margulis' argument comes after that [with] her insistence that such changes could not have come through the slow buildup of chance mutations, and that therefore *neo-Darwinism, which insists on that, is in a complete funk.*" Addressing an audience at the University of Massachusetts, Margulis continues: "I have seen no evidence whatsoever that these changes can occur through the accumulation of gradual mutations. There's no doubt, of course that they exist, but the major source of evolutionary novelty is the acquisition of symbionts - the whole thing then edited by natural selection. It is never just the accumulation of mutations." [By acquisition of symbionts is meant the incorporation of free-living bacteria (e.g. mitochondria) into other bacteria to form a more complex organism.]

Original Setting Important

The above examples emphasize how vital it is to read selective quotations in creationist writings in their original setting. With reference to the second quotation, Margulis is not jettisoning natural selection entirely, merely playing down its influence as far as the production of evolutionary novelty is concerned. In this she is at odds with prominent evolutionists, a point which is stressed in the *Science* article. Most significantly, contrary to what might be concluded from Wishart's article, she is not questioning evolution itself. In spite

of differences with her colleagues, she is still very much an evolutionist. It is worth noting that in Wishart's article the two quotations are linked, even though they were uttered about three years apart!

Hopeful Monsters

Wishart repeats the creationist mantra that the theory of punctuated equilibria "is similar to what became dubbed 'the hopeful monster theory' of the 1940s, whereby a dinosaur laid an egg and out of it hatched a bird." This, continues Wishart, "is tantamount to admitting a miracle – divine intervention – according to creationists". But, as Stephen Jay Gould, co-author of the punctuated equilibria theory, has observed, "the theory advances no defenses

for saltational models of speciation..." (Saltation is postulated abrupt change resulting from a major mutation, that can give rise to a new class or type.)

The writer refers to the "many controversies" within evolutionary theory, which in his opinion receive curt coverage in the science curriculum. Certainly, if it is true that debate at 7th form bursary level is limited to "Darwin vs Lamarck", then such concern is justified. However, what really concerns Wishart is revealed by the following: "Lamarck was an evolutionist like Darwin with a slightly different spin on the process. *He wasn't a Creationist.*" (Emphasis added). Clearly, he wants ID creationism taught alongside evolution as an alternative

explanation for biological reality.

People, of course, should be free to believe what they like, but when beliefs which are clearly non-scientific, such as the belief in an intelligent designer, are promoted as legitimate alternatives to evolution in a science curriculum, any opposition to such a move is entirely justified. It surely is the duty of educators and others genuinely concerned with the quality of science education, to resist any such intrusions and so uphold the integrity of science in the classroom.

Warwick Don, before retirement, was Senior Lecturer in Zoology, University of Otago.

Spookiness is in the brain of the beholder

WHETHER or not you believe in the paranormal may depend entirely on your brain chemistry. People with high levels of dopamine are more likely to find significance in coincidences, and pick out meaning and patterns where there are none.

Peter Brugger, a neurologist from the University Hospital in Zurich, Switzerland, has suggested before that people who believe in the paranormal often seem to be more willing to see patterns or relationships between events where sceptics perceive nothing.

Brugger persuaded 20 self-confessed believers and 20 sceptics to take part in an experiment in which they were asked to distinguish real faces from scrambled faces as the images were

flashed up briefly on a screen. The volunteers were then asked to identify real words from made-up ones. Believers were much more likely than sceptics to see a word or face when there wasn't one, Brugger revealed. However, sceptics were more likely to miss real faces and words when they appeared on the screen. The researchers then gave the volunteers a drug called L-dopa, which is usually used to relieve the symptoms of Parkinson's disease by increasing levels of dopamine in the brain. Both groups made more mistakes under the influence of the drug, but the sceptics became more likely to interpret scrambled words or faces as the real thing. That suggests that paranormal thoughts are associated with high levels of dopamine in the brain, and the L-dopa makes sceptics less sceptical.

"Dopamine seems to help people see patterns," says Brugger.

However, the single dose of the drug didn't seem to increase the tendency of believers to see coincidences or relationships between the words and images. That could mean that there is a plateau effect for them, with more dopamine having relatively little effect above a certain threshold, says Peter Krummenacher, one of Brugger's colleagues.

Dopamine is an important chemical involved in the brain's reward and motivation system, and in addiction. Its role in the reward system may be to help us decide whether information is relevant or irrelevant.

Helen Philips
New Scientist July 27 2002

Justice at Last

Two recent items in the overseas press show that NZ is lagging behind in recognising that the child sex abuse panic has been greatly overblown. In a case which closely paralleled the Christchurch Creche, Dawn Read and Christopher Lillie, Newcastle, were cleared in court of molesting children in a nursery eight years ago, says the Guardian (July 31). Despite this they were fired from their jobs and hounded into hiding by the media and the community. They have just won a libel case against the review team who assessed evidence from the children, the Newcastle City Council and the local Evening Chronicle.

In a very similar situation in Saskatchewan, the Globe and Mail reports (August 1) Police officer John Popeoppich has finally won an apology from the government and a \$1.3 million settlement after 10 years of panics centred on a babysitting service. Although he had never met any of the children, he was suspended from his job without pay when one of the children picked his photo out of a book of city police officers after an investigator suspected police involvement in the alleged satanic cult. Meantime in NZ ACC's decision to reinstate lump sum payments has had the expected result of an increase in abuse claims. At least Lynley Hood won the Montana book awards for *A City Possessed*.

Highland Fun and Games

And on a completely different subject, it's all on in Scotland at the moment. The country has the highest concentration of UFO

sightings on the planet, says The Evening Post (June 24). Around 300 UFOs are spotted in Scotland each year, the most per square kilometre and per head of population of anywhere in the world, figures compiled from Scotland's official tourist body revealed.

VisitScotland said 0.004 UFOs were spotted for every square kilometre of Scotland. The 2000 UFOs spotted every year in the US represented 0.0002 sightings per square kilometre. The paper asks - Is Scotland beset by UFOs? Or by a combination of whisky and RAF bases?

Still in the land of the bagpipes, organisers of the Queen's jubilee said they had seen something "pretty weird" when a baton on the way to the Commonwealth Games was lowered into Loch Ness recently (Dominion, June 6). The baton contained a device that could detect a pulse rate and had been lowered 220 metres to the lake's bottom. On its return, near the surface, there was a "strange interruption". Investigators said there was a thing in front of the camera. It was brown, almost looked organic and slipped by and then the pictures cut out, said event director Di Henry. She concluded it could have been wood or seaweed or it could have been Nessie. It was all done to stimulate interest in the Commonwealth Games...what are they anyway?

Back to the Future

Speaking about bottoms (we were you know), the future is all in your behind, according to a blind German psychic whose exploits were reported in the Dominion Post (July 17).

Ulf Buck tells fortunes by feeling people's bare buttocks. Sounds scary, but the 39 year old swears by it. He's even been on national TV over there, doing hands-on "readings". The paper says Herr Buck has been practising his unique form of posterior palmistry for years. And that he's happily married. What can one say.

Fishy Remedies

Trials of the supposed "miracle cure" for cancer found in NZ's green-lipped mussels have stopped.

The mussels caused near-hysteria when Adelaide's Queen Elizabeth Hospital said that Lyprinol killed cancer cells in lab tests, back in 1999. Queensland-based company Pharmalink stopped funding the research after deciding the extract didn't work. Lyprinol is now on sale as HPME, Highly Purified Marine Lipid Extract, without any claims of cancer-fighting properties.

And still on the marine organism front, the Dominion (June 10) reports about half a million asthma patients have descended on an Indian city. They hope for a miracle cure offered to anyone who swallows a live fish stuffed with medicines. In Hyderabad a family has been offering the treatment for many years and say the cure must be taken at least three years in a row, along with a special diet, for 45 days. Apparently the fish's movement clear the patient's windpipe and the medicine then goes to work. They guarantee a 100 per cent cure, no matter how bad the asthma. Hard to swallow.

Tackling the Dumb Mysteries

Vicki Hyde reports from the 4th World Skeptics Conference

I KNEW Someone was smiling on me – there I was going to be stuck in Los Angeles for three days waiting for a flight back across the Pacific – and what should chance to be on at that time, in the neighbourhood, but the 4th World Skeptics Conference...

The theme was “Prospects for Skepticism – the Next 25 Years”, with sessions on evolution and intelligent design, fringe psychotherapies, urban legends, medical claims, skeptical investigations and more – it sounded like my kind of conference.

As with most skeptics conferences, national and international, the real buzz was in being there amongst a group of (mostly) like-minded people, opinionated, informed, inquiring minds.

The notion of inquiry was one taken up by Paul Kurtz, a founding father and Chair of CSICOP, who argued that perhaps it was time to get away from the “skeptical” label and rebrand ourselves as “inquirers”. It’s an argument which has its merits – there is a lot of “baggage” associated with the term skeptic, as many of us know. All too often it is taken as a synonym for cynic, or to represent a dogmatic, close-minded authoritarian view of the world.

However, I have to confess to being a little dismayed at hearing Paul call for organised skeptics to take on all areas of inquiry, including the areas of religion,

economics and politics. He had made similar comments at the 3rd World Conference in Sydney in 2000, and clearly this is an important issue for him personally. Judging by discussions outside the sessions, he doesn’t have unanimous support for that, despite the apparent presumption at the conference that skeptics, by definition, had to be vociferous humanistic, if not atheistic, Democrats. It made more than just me uncomfortable, particularly when a challenge to this was knocked back rather harshly.

(As a consequence, we’re looking at finding out what our members here believe should be our core functions and focus. I suspect that we are a more diverse group than in the US, and I urge you to take part in our survey within this issue or online, to see if we have some basis for that belief!)

Those questions of who we are and what are our interests were reflected, in some respects, in the opening session, Don’t Get Taken, which saw a focus on scams, ranging from the kerbside cons of three-card monte to those of Wall St. Amongst the sleight-of-hand and financial analysis, came a thought-provoking comment from CSICOP fellow Ray Hyman.

In discussing how con artists rely on the confidence people place in one another and in the general level of trust within a society, Ray noted that the only societies which did not see scams or cons were

totalitarian ones because under such systems, trust is non-existent.

Therefore, he concluded, scams are a sign of a healthy democracy...

The next morning, it was hard to drag myself away from the wonderful range of books available from the Prometheus Books display to get to the first session on Evolution and Intelligent Design. It was worth it, as it turned out to be one of the liveliest sessions of the whole conference, putting two supporters of each approach on the stage and on the spot.

It would be hard to remain complacent about the forces behind intelligent design having seen the “Wedge” document which outlines the strong, well-supported campaign to have it taught and accepted throughout US society. It appears that the “research” component of this campaign has evaporated (apparently in response to problems associated in proving intelligent design concepts...), but there’s good evidence that the political push has been taken up with enthusiasm.

Take a look at the document (a copy is at www.antievolution.org/features/wedge.html). It’s very impressive as a strategic planning document; it’s chilling in its thoroughness and implications.

Ironically, given the public image of skeptics as dogmatic and dictatorial, the only person who came across as that was William

Dembski, described as associate research professor in the conceptual foundations of science at Baylor University and senior fellow with Discovery Institute's Center for the Renewal of Science and Culture (where renewal basically means defeating the forces of godless evolution). You can get the flavour of his presentation with the following rhetoric:

"What's a skeptic to do against this onslaught [ie the fact that intelligent design is broadly accepted], especially when there's a whole political dimension to the debate in which a public tired of being bullied by an intellectual elite find in intelligent design a tool for liberation?"

There were lots of untenable assertions like this, which you can read for yourself at www.discovery.org/viewDB/index.php3?command=view&id=1185&program=CRSC

Paul Nelson, editor of *Origins & Design*, came across as more reasonable until the Q&A session when he was asked directly if he accepted the fact that the world was more than 10,000 years old. He paused, he squirmed, he attempted to deflect it by saying that geology had nothing to do with biology(!), he attempted further digression, until he finally had to admit to being a proponent of the young-Earth theory...

I have to confess to bailing out halfway through the next session on fringe psychotherapies. Three-hour-long sessions, small hard seating and persistent problems with the technology made even those with long attention spans vulnerable to the seduction of the comfy chairs and conversations outside.

We were lured back in by the evening address from Marvin Minsky, but his disappointingly rambling address didn't hit the spot except for this line:

"We [ie Skeptics] love mysteries too – we just want to get rid of the dumb ones."

Saturday started off with Urban Legends, including the great researcher and raconteur Jan Brunvand (author of *The Vanishing Hitchhiker*), and a presentation by the online urban legend folk from snopes.com (David and Barbara Mikkelsen).

Then came the hard choice – concurrent sessions on medical claims and skeptical investigation. I knew the latter would be immensely entertaining and interesting. After all, with the likes of long-time investigator Joe Nickell and the ebullient Richard Wiseman, it could not fail, but I had heard them both speak in Sydney and so headed for the medical session.

The speakers included Wallace Sampson, editor of the *Scientific Review of Alternative Medicine*; Stephen Barrett of quackwatch.com fame; and Marcia Angell, Harvard lecturer and former editor of the *New England Journal of Medicine*. It was the strongest line-up of the conference and one of the meatiest subjects. One of the most memorable comments came from Stephen Barrett:

"Complementary medicine is not a form of medicine – it is a marketing slogan."

Now how can we get *that* spread as a general cultural meme?!

The evening banquet was entertaining if only because we had

the famously egotistic Harlan Ellison dash over to our table to grovel at the feet of a bemused-looking Jan Brunvand. Harlan was being honoured for his services to skepticism or, as noted in the conference programme, for his attempt to become the "biggest pain in the ass in the Western Hemisphere".

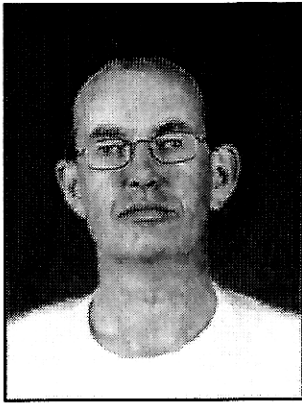
And so to Sunday, when the conference concluded with concurrent morning sessions on *Educating our Future* and *Paranormal Around the World*. I would have liked to have heard of the experiences of our counterparts in India, China, Peru, Mexico and Germany, but I had been commandeered by the highly energetic Amanda Chesworth for the education session.

So I ended up on the stage, abetted by Diane Swanson, author of *Nibbling on Einstein's Brain*, a book for teaching the scientific method to children.

Chemistry professor Charles Wynn, author of *Quantum Leaps in the Wrong Direction*, had some very promising research showing how his honours colloquium on teaching skeptical thought made a big impact on his students. Almost all questionable beliefs showed a significant drop amongst his honours students by the end of his course, but the sobering thing was just how much effort was involved in shifting those beliefs. It would be great to find out which of the various techniques were the most effective; clearly more research is required...

Biases apart, I do think that this session had the greatest relevance to the conference theme and deserved better placement, particularly when Amanda began to

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Another Alternative to Evidence Based Medicine

Vehemence based medicine: The substitution of volume for evidence is an effective technique for brow-beating your more timorous colleagues and for convincing relatives of your ability. *New Zealand Medical Journal Vol 113 No 1122 p479*

Chiropractic

This pseudoscience is now being advertised on television. In the same way that acupuncture can be easily learned during a one-hour lecture, anyone can learn how to make the spine go “click”. Many lay people have discovered this for themselves. Four or more years of training are unnecessary when a modality has no scientific basis. You only need to learn how to produce a pleasing noise from the spine without harming the patient. Osteopaths extend this effect to include the joints. If you pull firmly on your fingers you get the same effect, often a dramatic crack. Various theories have been proposed for this such as air bubbles, but I have noticed that

large joints frequently produce all sorts of noises when they are being examined. When the neck is forcibly manipulated in this way there is a real risk of serious injury to major arteries in the neck. The shearing forces cause a tear in the arterial wall (a “dissection”) and this interruption to the blood supply to the brain can cause a stroke. If you have a sore neck and simply wait for it to get better you are not exposed to this risk. I used to do a lot of spinal manipulation but gave it up because patients started coming back all the time to have their spine “put back in”. I had unwittingly stumbled upon the secret of chiropractic! This became very tiresome and I stopped the practice after giving myself a nasty fright when a patient fainted and I thought I had killed her. Chiropractors talk about “adjustments” and this is the source of their income – adjustments to their bank accounts. Once the patient is convinced of the need for frequent adjustments, the chiropractor has a regular patient for life. For a detailed view of the pseudoscience of chiropractic visit www.quackwatch.com.

For a review of serious adverse effects of chiropractic refer *Ernst E. Medical Journal of Australia 2002; 176: 376-380*

Good Health

I have forwarded a copy of this publication to the editor. It is an advertising supplement for alternative medicine. *Good Health* employs a resident naturopath, Lani Lopez, complete with a Kentucky fried medicine qualification – N.D. Dip J. Herb. We learn that Mandy Smith owes everything to a diet rich in pond scum (spirulina aka blue/

green algae). Auckland-based readers will be delighted to know that NZQA loans and allowances are available if they wish to obtain such qualifications from Wellpark College of Natural Therapies. Refer www.wellpark.co.nz, although their website was down when I visited. I was particularly taken with an article on joints with metaphors such as “creaking hinges and rusty joints.” My left knee has osteoarthritis and I learned that “essential oils, Clove, Frankincense, and Cajuput oil penetrate deeply into swollen areas and support normal joint articulation.” The only problem with that claim is that human skin is actually impervious to such treatments as it is a very effective barrier. However, I had a biomechanical brainwave. Why not insert grease nipples over troublesome joints and use a modified grease gun to pump the “two main natural ingredients Glucosamine and Chondroitin” directly into the joint? The next time I take the car for an oil change and grease I’ll have my knee done as well, and if that fails there’s always...

Doctor Levine’s Patented Power Knee Strap

There must be plenty of money in this product as it has recently featured in several half-page advertisements. It is claimed the strap provides relief from arthritis and chronic knee pain. The strap costs \$24.95 and is designed to sit just beneath the kneecap. Dr Levine is described as a “nationally famous physician and former head of orthopaedic surgery at one of New York’s leading hospitals.” I decided to check these claims and

the website of the American Medical Association (www.ama-assn.org) had a search engine by doctor's name. This confirmed the existence of Dr Jack Levine. The website also had a statement of the ethical standards for the AMA members and it appears that this advertising is a breach of Article 2. I emailed the AMA pointing this out and will report back, assuming they bother to reply. The strap is obviously a placebo. It might work if it was tightly placed around the upper thigh where it could cut off the circulation, compress the nerves and produce a pleasing numbness – a sensation that frequently comes over me when I am confronted with American consumerism.

Slimming the easy way

A 44-year-old woman was referred to hospital with anxiety symptoms, weight loss and hypertension after taking a Chinese herbal remedy for weight loss. Her doctor was obviously suspicious about the composition of this preparation because it had actually worked. These preparations are normally useless. The initial suspicion was that the herbal remedy contained ephedrine ("Ma Huang"), which is a dangerous but commonly used preparation. Gas chromatography revealed, however, that the herbal preparation was adulterated with fenfluramine, a potent and dangerous amphetamine derivative. One can only agree with the author of the report: "stringent regulation of traditional medicines, at least to the standards of conventional practice, is urgently needed". *British Medical Journal Vol 324 16 March 2002 p679*

Recovered Memory

This contemptible pseudoscience is still blighting lives all around the world despite being condemned by most authoritative Psychiatric Colleges. Psychologists at the University of Otago have found that children can only explain early childhood events using the language they knew at the time. The researchers are quoted: "If you take our data to their logical conclusion, then one implication would be that we need to express scepticism about very early verbal memories that are recovered during the course of therapy".

The merciless badgering of self-deluded therapists is a process very similar to "facilitated communication". This is where the "facilitator" guides a handicapped person's fingers on a keyboard to produce written communication, which the person is incapable of when unaided. This is of course a complete delusion and we have experimental psychologists to thank for exposing this nonsense which should not be either encouraged nor funded by ACC.

Article Published in US Psychological Science-reported in Sunday Star Times 28 Jul 2002

John Welch is a doctor with the Royal New Zealand Air Force, living in Picton. He has just undergone an osteotomy to his left tibia to correct a fracture which was improperly set in 1974. Please beam healing thoughts his way.

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outline the highly ambitious programme she is running as director of the Young Skeptics and Darwin Day initiatives. We, the New Zealand Skeptics, will have a part to play in those initiatives as a result of contacts made at the conference, and I confidently predict that the next 25 years will see good prospects for us all.

Conference Highlights

■ Being pounced upon by a Fox TV crew in search of exotic accents as an example of international skepticism.

■ Figuring out a card trick top-flight magician Bob Steiner did for me, looking for the "smoking gun" move when he repeated the trick at the conference opener...and not seeing the move I expected.

■ Arguing about adverbs, religion, gun laws, science fiction movies, wines, medical treatments, with all arguments characterised by strong opinion and even stronger humour.

■ Waving goodbye to Joe Nickell as he headed off to examine what was claimed to be a genuine vampire hunting kit (we were just down the road from Universal Studios...)

■ Hearing a great example from Diane Swanson about how to get sampling errors across to school children (something our media needs help in understanding!)

■ Being able to say a heartfelt personal thank you to all those folk who provide such great online resources that make my life easier as Chair-entity of the NZCSICOP, such as Quackwatch, Snopes, Skeptic's Dictionary, Young Skeptics, Skeptiseum.



Rats, Scientists and Experimental Design

John Riddell learns about some dangerous chemicals

From the TV3 News website:

CHIPS COULD CAUSE CANCER

UPDATED: 05:56PM WEDNESDAY 26 JUNE

The World Health Organisation has begun a three-day emergency meeting in Geneva to evaluate the danger of some popular foods.

They're concerned about a recent discovery that certain starchy foods, from deep fried chips to potato chips and bread, contain a chemical called acrylamide.

It can cause cancer in rats, but there is no evidence it does the same in people.

THERE are lots of chemicals in food. Even organic food. Are the chemicals in our food dangerous? Is food safe?

For example many foods contain a chemical called cellulose. How much do we really know about cellulose?

If I want to know if cellulose is dangerous I need to design an experiment. Experimental design can be tricky.

I have limited resources. The best thing to do would be to look at a large sample of individuals. See what happens when they are exposed to small amounts of cellulose over a long period of time. Unfortunately I don't have the resources to study this way. So I choose to use a high dose of cellulose over a short time period.

I get a rat and put it in a cage. I place the cage about five metres from the base of a 25 metre tall tree. Using a chainsaw, I chop down the tree so that it falls on to the cage containing the rat.

Then I have to repeat the experiment a few times to make sure the first result wasn't a fluke.

Every single time I have carried out this experiment the rat has died. The conclusion is obvious. Cellulose is dangerous.

Next I must publish the results of this experiment in a "peer reviewed journal".

This is in the unlikely event I have made a mistake somewhere. If there is something wrong with my experiment, hopefully someone will spot it.

Somebody did. They raised the point that it might not have been the cellulose that killed the rat. Trees also contain other chemicals such as lignin or even water. Maybe it was one of the other chemicals?

Good point. I have to consider the criticism and design a new experiment to answer this question.

Since a tree is mostly water I design another experiment to test if

it could have been the water that killed the rat. I put a new rat, in a cage, into 100 litres of water.

And the rat dies.

So I conclude that water is harmful to rats. But this does not necessarily mean that cellulose is not also harmful.

After all, I noticed that while the tree killed the rat instantly, the water took a few minutes. Perhaps there was something in the combination of cellulose and water that made the tree more harmful than merely water alone.

But before I look at the synergistic effects I want to extrapolate these data to look at how dangerous small doses of water might be.

If 100 litres of water causes death in three minutes this suggests 50 litres would cause death in six minutes. Continuing this extrapolation shows that even a

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2002 Skeptics Conference

Registration Form

Name/s (for nametag): _____

Postal Address: _____

Tel: _____ Email: _____

☐ I'd like my receipt mailed as confirmation of enrolment OR

☐ I'm happy to collect my receipt on the day (pick one)

Conference Fee (Full / unwaged) _____ @ \$50/25 = _____

(Single-day registrations (\$20) are available from the registration desk on the day
- Friday 7 pm, Saturday 8 am, Sunday 8 am)

Conference Dinner (Sat September 14th) _____ @ \$25 = _____

Lunch

Sat September 14 _____ @ \$10 = _____

Sun September 15 _____ @ \$10 = _____

Vegetarian food or other (state): _____

Please book meals by August 12 or go hungry! LAST CHANCE: AUG 30!

Accommodation

St Andrews College, 347 Papanui Road, Christchurch

Please book by August 12: LAST CHANCE: AUG 30!

Friday night/Saturday breakfast

_____ @ \$28 twin share = _____

_____ @ \$47 single room = _____

Saturday night/Sunday breakfast

_____ @ \$28 twin share = _____

_____ @ \$47 single room = _____

GRAND TOTAL: _____

Cheques are payable to "NZ Skeptics".

Print this form and mail to:

NZ Skeptics Conference,

Bernard Howard,

150 Dyers Pass Rd,

Christchurch

with your fee.

For late registrations, e-mail: Bernard Howard - bhoward@paradise.net.nz

NZ Skeptics Website: <http://www.skeptics.org.nz>

What are Skeptics?

WHAT makes a Skeptic? What are our core interests as an organisation? What should we be examining critically?

In recent years, Skeptics around the world have been discussing this, particularly with regard to the inclusion of areas such as alternative medicine, environmental issues and religious beliefs within the skeptical purview. These topics are, after all, some distance from the "claims of the paranormal" that is a part of our Society's formal name and its initial core focus some 15 years ago.

The Society's objects, as noted in our Constitution, concentrate on the paranormal, but also include the aim of increasing "public awareness of the difference between legitimate science and pseudoscience", and of encouraging "a more critical attitude to pseudoscience". We'd like to see what our members regard as our prime areas of interest and where, if anywhere, we should be drawing the line.

We'd appreciate it greatly if you would take a minute or two to fill out the following survey. We plan to present the general results at the forthcoming Annual Conference and in the NZ Skeptic.

How would you generally define the core interests of the Skeptics?

Defining Specific Areas of Interest

On a scale of 1 to 10, with 1 being of core importance and 10 being not relevant at all, how would you grade the following subjects as items of interest to the NZ Skeptics?

academic freedom	<input type="checkbox"/>	hoaxes	<input type="checkbox"/>
alternative medicine	<input type="checkbox"/>	meditation	<input type="checkbox"/>
astrology	<input type="checkbox"/>	repressed/false memory	<input type="checkbox"/>
counselling	<input type="checkbox"/>	organic/biodynamic agriculture	<input type="checkbox"/>
creation science/intelligent design	<input type="checkbox"/>	psychic phenomena (eg ESP, spoon-bending)	<input type="checkbox"/>
economic predictions	<input type="checkbox"/>	religious belief/faiths per se	<input type="checkbox"/>
food scares	<input type="checkbox"/>	scams and cons (eg pyramid schemes, Nigerian letters)	<input type="checkbox"/>
GE/GM issues	<input type="checkbox"/>	statistics - mis-use and abuse	<input type="checkbox"/>
ghosts	<input type="checkbox"/>	UFOs/alien	<input type="checkbox"/>
global warming research	<input type="checkbox"/>		

Currently, the NZ Skeptics focus on areas where scientifically testable claims are made or where empirically based proof is presented (ie astrological stockmarket predictions are of interest, but general stockmarket forecasts are not; creation science claims are of concern, but Creation beliefs per se are not).

Do you consider this differentiation appropriate for the NZ Skeptics, with 1 being very strong support for it and 10 disagreeing strongly with it? If you disagree, even mildly, with this differentiation, please comment further. ☐

What would you consider to be the most important forums or areas in which you think the NZ Skeptics should be most active, with 1 being of core importance and 10 least:

general media	<input type="checkbox"/>	professional contacts (eg medical associations)	<input type="checkbox"/>
print	<input type="checkbox"/>	government/ministerial levels	<input type="checkbox"/>
radio	<input type="checkbox"/>	proactive investigation of claims	<input type="checkbox"/>
TV	<input type="checkbox"/>	Any further comments?	
science education			
primary	<input type="checkbox"/>		
secondary	<input type="checkbox"/>	Please fill this out and post to NZ Skeptic Survey,	
tertiary	<input type="checkbox"/>	Box 19-760, Christchurch, ASAP. Thanks!	

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small amount of water will significantly reduce the rat's life expectancy.

Also, what are the implications for humans?

Anecdotal evidence suggests that many humans who have been in large amounts of water have also died. As yet I haven't yet been able to obtain funding to test this myself. However if water really is

dangerous, can we risk even the smallest exposure?

Okay, some scientists have raised doubts about the validity of high dose trials. Just because a high dose of a chemical is harmful, they say this doesn't necessarily mean that smaller doses are also harmful. And just because it is harmful to rats doesn't necessarily mean it is harmful to humans.

But can we afford to take the risk? Do we really know the

dangers? The results so far are inconclusive. Obviously more research is needed. I just need a bit more funding. However there is one conclusion we can draw.

Scientists don't like rats, but I suspect the feeling is mutual.

John Riddell assures the editor that no rats were harmed in the preparation of this article.

Forum**Ritalin and ADHD**

Professor JS Werry deserves thanks for his contribution in these pages regarding the present use/abuse of methylphenidate (Ritalin) and ADHD.

Despite the Professor's reassurances regarding the reality of ADHD, I'm afraid I remain an unconvinced sceptic.

Perhaps Professor Werry could explain where ADHD comes from. It certainly wasn't a feature of our lives in the fifties and sixties, and now millions of young children worldwide, many of them under 10, are being treated for many years of their lives with a powerful amphetamine-like drug for a "non-disease" epidemic.

Time magazine in its (admittedly dated) July 18, 1994 cover story reported that many European countries, notably France and England, have only 1/10 as many ADHD cases as the USA. Japan seems to have little experience of ADHD at all – yet it has been termed "the educational disorder of the 1990s." The USA has experienced a four-fold increase in ADHD since 1990.

Contrary to Professor Werry's assurances, academics are by no means united over ADHD and its treatment with methylphenidate/Ritalin. Indeed, an increasing number of professionals decry this alarming and controversial trend of labelling children with this psychiatric condition.

One of the dissenters is Thomas Armstrong, Ph.D., former special education teacher and author of *The Myth of the ADD Child*. Armstrong strongly questions the rush to label a child having problems in school as "ADHD." He asks how ADHD can be a "mental disorder" when its symptoms are so selectively displayed – for example when an ADHD child is internally motivated to focus – as when deeply engrossed in a video game – the inability to pay attention is apparently not present.

I would be very interested to find out whether a diagnosis of ADHD at an early age has any bearing on later youth suicide, whether ADHD children are more or less likely to come from a dysfunctional family background,

and the reason for the apparent prevalence of ADHD in some countries and not others. The overwhelming preponderance of young males in the statistics is also of concern.

Mike Houlding
Mt Maunganui

Possum Peppering

Perhaps John Welch is a little unfair to the Green Party when he condemns them for claiming that burnt possum testicles deter possums from eating vegetation. As a doctor, he will know that removing testicles not only annoys the possum, but also reduces its chances of reproduction.

The Green Party does not go far enough. If they would guarantee to remove every testicle from every possum in this country, they would certainly get my vote. the whole exercise would give relief to our forests, and possibly also to the female possums, who in one possum generation would die childless but lonely. (Abridged.)

David L. Smith.
Tirangi

If undelivered, return to:

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PO Box 29-492
Christchurch

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Conference Time Again!

Once more the New Zealand Skeptics are congregating in Christchurch for the Annual Conference, September 13-15, 2022.

Send in the registration form in this issue if you haven't sent one in already, and we'll see you there.

New Zealand Committee for the Scientific Investigation of Claims of the Paranormal (Inc.)

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