NEW ZEALAND SKEPTIC

MARCH 1991 — NUMBER 19

Chemicals In Food

Jay D Mann

Despite recent claims that "natural" foods are safer, there is evidence that "natural" pesticides can be present at much higher concentrations than residues from synthetic pesticides. These "natural" chemicals are often untested and of unknown toxicity, with little evidence of health benefits.

We are often told that our food is full of poisonous and cancer-inducing chemicals. This is absolutely true! But it is not because of the use of agricultural chemicals. Most food plants contain natural pesticides that, in high-dose tests, are as toxic as synthetic chemicals.

These natural pesticides, such as the flavours of mustard and cabbage, are often the very flavours that contribute to our enjoyment of a plant. The natural pesticides are designed to be toxic, not to titillate our taste buds. Synthetic agrochemicals typically leave residues that are measured in parts per billion, or even parts per trillion. Chemicals made by plants, in contrast, have no Pesticides Board clearance, no maximum dose, no minimum waiting period. The concept that "natural" automatically means "good" because Nature is always benign, is a charming legend on a par with Santa Claus and the Tooth Fairy.

Farm-applied synthetic agrochemicals are few in number, and have survived costly and extensive tests for toxicity, teratogenicity (birth defects), and carcinogenicity (cancer-causing).

Natural foods, on the other hand, contain an incredibly complex mix of exotic chemicals. Surprisingly few of these chemicals have been thoroughly tested for safety. There are dozens of flavour constituents in a sprig of parsley (Straten and Maarse, 1983). Some of the parsley flavour chemicals are also found as ingredients in commercial paint strippers. Does this mean that parsley is dangerous? Of course not.

Natural Poisons

Most natural toxins are present at low concentrations. A few can occur at dangerous levels, such as light-activated psoralens in celery and parsnip, cyanide-generating compounds in beans and cassava, poisonous glycoalkaloids in potatoes and poisonous cucurbitacins in throwbacks of squash and cucumbers.

One cultivar of celery, selected for "natural insect resistance", caused ⇒3

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The New Age

With this issue, the *Skeptic* comes under a new editorial regime. Vicki Hyde, whose excellent *New Zealand Science Monthly* has recently hit the stands, comes aboard as managing editor. Vicki's extensive science journalism background, her publishing experience and her literate editorial eye — not to mention her sceptical temperament — make her the perfect person for the job.

This makes my decision to take over as editor quite easy. In fact, it presents an ideal image before the mind. Sitting with a good cigar and a glass of port in hand, I cast my eye over manuscripts and pass them on to Vicki, who then does all the work. (Many women will recognise this kind of relationship.)

We have a tough act to follow, as Phil Bradley and his co-workers, Mark, Karen and Andrew, produced the best *Skeptic* we've yet seen. With Vicki's professional contribution (and Bill Malcolm's splendid new logo), we hope to continue their high standard.

Just to prove that my image of an imperious, cigar-smoking editor is not all that far from fact, I write these very lines in the bougainvillaea-covered garden of my Port Moresby hotel, behind razor-wire fortifications. The comfort won't last long, as I'm on my way to northern New Guinea to continue my studies of — or indulge my passion for — the art of the Sepik River.

Sepik carving is a living art, though not perhaps everything it used to be (the extent of and reasons for its decline are among the things I'd like to learn about). Nevertheless, at its best it possesses great aesthetic and even spiritual power.

I encountered another kind of spirituality just this afternoon in the form of a Catholic missionary. I'd judge the fellow had lost faith of a certain kind — he no longer harboured illusions about saving souls and converting the savages. After twenty-two years in Papua New Guinea, he was content simply to help people out where he could. I was inspired by his humane attitude, a far cry from the ugliness of many fundamentalist missionaries in this country.

High art and human kindness are ennobling ideals. How different from my experience of having wandered into a New Age bookshop in Sydney a couple of days ago. Increasingly depressed amid the astrology, healing crystals and Eastern pseudo-wisdom, I caught sight of a rack of little signs. These could go in the corner of a dressing mirror, though I would prefer to see them hung with fatal tightness around the neck of a few gurus.

The messages were simple and crude: *I will attract the man I desire.* My favourite read: *I deserve to be wealthy and attractive.*

Here was the quintessence of the New Age. Spirituality for the Most Important Person in the World — me, me, me. No denial, no discipline, no need to give up anything. Spirituality for people who take. Spirituality on the cheap.

Denis Dutton

Contributions should be directed to:

Dr Denis Dutton, School of Fine Arts, University of Canterbury, Christchurch

When sending clippings, please indicate source publication and date published.

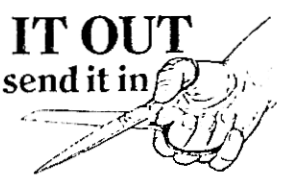
It would be greatly appreciated if articles (especially long ones) were provided on any size IBM disk as ASCII (preferably), Wordstar or Word Perfect files. Do enclose a hard-copy too, please, as the Editor doesn't understand binary. Disks will be faithfully returned if clearly labelled.

Absolute Final Deadline for next issue:

May 15th, 1991

REMEMBER:
When in doubt,

CUT IT OUT
and send it in



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blisters in grocery workers, because the natural resistance was accomplished by higher levels (6-25 ppm) of 5-methoxypsoralen, a DNA cross-linker. Even ordinary celery cultivars can cause long-lasting arm and leg blisters in farm workers, particularly after plant stress. Another "natural resistance" problem arose with the release of Lenape potatoes, which had 3 times the normal level of neurotoxic glycoalkaloids, and had to be withdrawn.

It is of extreme concern that many self-appointed protectors of the environment seem totally unaware of the potential health hazards of natural pesticides. Several infant deaths have occurred when pregnant women took daily doses of herb teas, in the belief that anything "natural" must be harmless (Talalaj and Czechowicz, 1989, 1990).

Although honey is widely regarded as a particularly healthy food, Xenophon's troops were killed in ancient Persia by rhododendron toxins in wild honey, and about half the modern reports of natural food poisoning involve honey. Toxic honey was a significant problem in New Zealand until restrictions on beekeepers were imposed.

Bracken fern, a traditional New Zealand food, is notorious throughout the world for killing cattle, and in Japan is associated with human gullet cancer.

There are many other natural chemicals which in high dose tests are toxic, carcinogenic, or teratogenic, but which are present in lower concentrations in fruits and vegetables. Interestingly, canavanine in alfalfa sprouts (can anything be "greener"?) causes lupus-like symptoms in monkeys fed 40% of their diet as sprouts. The concentration of canavanine is 1.5% of the dry weight of alfalfa sprouts, but I don't know of any reports of problems in humans.

Healthy Poisons?

How can the presence of these potential toxins be reconciled with the considerable evidence, that diets rich in fruits and vegetables are associated with low cancer rates? Is there a paradox? Are these minute concentrations of toxins really dangerous?

There is a popular school of thought that suggests "even a little bit of poison is too much". The most charitable thing one can say about this approach is that it is naive. Four hundred years ago, Paracelsus wrote, *Everything is poison. There is nothing without poison. Only the dose makes a thing not a poison.*

Are natural chemicals inherently safer than synthetic chemicals? The answer is NO. In a study of several hundred chemicals, about half of both artificial and natural chemicals were carcinogenic at high concentrations (Ames and Gold, 1988, 1990). Similarly when 2,800 chemicals were tested for effects on rodent birth defects, about one-third of either natural or synthetic chemicals tested positive (Ames and Gold, 1990).

Since our diet includes vast numbers of natural chemicals at concentrations that are 1,000 times to 1 million times higher than synthetic chemicals, why is so much emphasis on the so-called risks from synthetic chemicals? Indeed, why so much emphasis on food risks at all?

Perhaps the illogic goes: Bad foods can make us sick, so good foods must be able to make us well. Surveys have shown that the public wants to accumulate enough "health points" by eating "good" foods to overcome other self-destructive actions. Will New Zealand follow the American pattern of becoming a nation of nutritional neurotics?

Are humans somehow able to handle natural toxins better than synthetic chemicals? This is doubtful. In many cases, the body has only general-purpose mechanisms for getting rid of foreign chemicals of whatever origin. What evolutionary device would have prepared humans for the alkaloids of

Natural Toxins Known To Have Harmful Effects

Data collated from various sources including Ames (1983); Ames et al (1987, 1987a)

FOOD	TOXIN	COMMENTS
Beer	alcohol	carcinogen, birth defects
Celery	psoralens	DNA-linker, rash, blindness
Herbal tea, Euphorb (spurge)	phorbol esters	nose & throat cancer
Herbal teas	alkaloids	foetal death
Lupine	anagyrine	birth defects
Mold carcinogens	aflatoxin, patulin	liver cancer
Mold carcinogens	ergot	death, abortion, "witchcraft"
Potatoes	solanine, chaconine	neurotoxin
Squash (throwbacks)	cucurbitacins	toxic

potato and tomato or the chemicals of red pepper – all unknown to the European world until after 1492?

Concentrated Testing

Opponents of synthetic agrochemicals speak obscurely of hypothetical "synergistic" interactions between minute traces of synthetics. But known synergisms don't work that way. Why not worry about the possible interactions between the 4,000-5,000 natural pesticides that we eat in combinations unknown to our ancestors. For instance, I often eat a combination of psoralens, glycoalkaloids, and canavanine – that is, I eat potato salad containing celery and alfalfa sprouts.

How can we interpret the results of toxicity tests performed at high concentrations, compared with actual exposures at very much lower concentrations? Of necessity, compounds are tested at high concentrations where toxic, carcinogenic or teratogenic effects can be measured. This gives an indication of deleterious effects that could be hazardous to workers at industrial dose rates.

After high-dose testing is finished, risks from low doses are calculated by rather dubious means. Using models such as "logprobit", it can be estimated that a very low dosage will cause, say, "one-millionth of a cancer". This model assumes that there is no threshold, that the toxic actions continue in ever diminishing amounts as the dosage is decreased, and that humans are as susceptible as specially bred mice and rats.

As methods of detection continue to improve, the conservative method of calculation implies that it will never be possible to claim zero-risk, only exceedingly low risks. Risks calculated in this manner are thus the maximum risks conceivable within the statistical uncertainties of the measurements. There are, however, a number of reasons why many toxicologists doubt the validity of extrapolating high-dose tests down into the low-dose world.

Test Errors

At high doses, protective mechanisms such as detoxification and DNA repair can be swamped. Low doses may have entirely less drastic effects. One analogy (Ottoboni, 1984) is that of the sports doctor who wants to test the long-term effects of repeated high jumps on joint injuries. Because he can't get 100,000 people to jump 6 meters every day, he gets 1,000 people to jump off a 60 m cliff ten times a day.

Or consider the established dangers of being adrift in an ocean or a large lake. We could find a mathematical relationship between the size of the lake and the chance of drowning. Would this mean that stepping into a puddle is one-millionth of a drowning?

The no-threshold model may not be valid. One attempt to test this using the known carcinogen 2-acetylaminofluorene at concentrations expected to cause 1% instead of 50% response took 18 months to plan, then 9 months to breed the 24,000 mice needed. Three years and six million dollars later, it still wasn't clear whether there was a threshold (Ottoboni, 1984). Some of the data implied a protective effect at low concentrations of the carcinogen! This kind of protection is apparently quite common in toxicology (Hayes, 1975; Ottobani 1984). It differs from comparable claims of homeopathic medicine, where incredibly dilute solutions are purportedly efficacious.

"The codeine is O.K., and the phenobarbitol is O.K., but the Food and Drug Administration says no to powdered bat's tooth."

About half the chemicals that cause cancer at high dosages (such as salt and stomach cancer) act by tissue irritation (Ames and Gold, 1990). In these cases, there should be no induction of cancer when they are present at non-irritating levels.

Because the mathematics of very low dosages are suspect, risks calculated in this manner are perhaps the maximum risks conceivable, within the statistical uncertainties of the measure-

ments. Animal testing procedures predict a tiny risk for many tested chemicals, whether of natural or synthetic origin. Instead of developing neurotic fears of being poisoned by vanishingly small concentrations of chemicals, we should be grateful that modern methods of analysis, combined with high-dose toxicology studies, confirm how insignificant are the health risks from agrochemical residues.

Life Is Risky

How can we measure or compare risks? Is a tiny dose of a potent poison more dangerous than a large dose of a weak poison?

The question is, how does any particular exposure compare with the dose that causes cancer in, say, 50% of rats or mice, with corrections for body weight. This measurement is called the HERP% (Human Exposure / Rodent Potency) (Ames et al, 1987). The larger the value of a HERP%, the more relative risk. The HERP% is only a relative measure of comparative risks. How can it be translated into real terms?

The highest value of 16% is for sleeping pills, yet studies of people who've taken sleeping pills for many years don't confirm any higher cancer rates. On the other hand, drinking 4 glasses of beer (HERP% about 3% per glass) a day is statistically associated with increased risk of throat cancer, probably because alcohol at high concentrations is an irritant. Alcohol is believed responsible for about 3% of all cancers and a number of birth defects; it's a weak toxin that some people consume in large amounts. The risk from "deadly" PCBs and DDT, in contrast, are ten thousand fold less than from a single glass of beer. "The dose makes the poison."

Ames et al (1987a) calculated that drinking a single glass of beer or wine poses a possible teratogenic (birth defect) hazard about the equivalent of eating a kilogram of dirt contaminated with 1 part per billion (10^{-9}) of dioxin (TCDD). Since dioxin in New Zealand sanitary napkins was about 1 part per trillion (10-12), I leave it to you to calculate how many kilograms of Tampax would be needed to match the risk from one glass of wine. Wilson and Crouch (1987) discussed the disproportionate fear of TCDD compared with aflatoxin (found in mouldy foods such as peanuts), which is equally as carcinogenic (to rats at least).

Life is too short to waste time worrying about insignificant risks. Is food a significant risk compared to other hazards? We need quantitative information about risks so that we can minimize or remove important risks. This information is available from Risk Analysis, but I've converted it to a new unit called the Butt.

Cigarettes Vs Sex

Since estimates show a loss of life expectancy of about 10 minutes for every cigarette smoked, we can compare other activities with the risk from one cigarette.

Almost everything has some risk associated with it. For a fertile woman, one act of unprotected love-making has a 6% chance of pregnancy (Eiseman, 1980, pg 31), with about 100 deaths per million pregnancies and perhaps 30 years loss of life in such unfortunate cases. The risk from unprotected sex is therefore about equal to the risk from smoking one cigarette. (This is not an either-or situation.)

Risks from food are primarily related to excessive body weight. For instance, the extra calories from one rich dessert are about 5 Butts. Risks from the saccharin in a diet soft drink are a maximum of 0.015 Butts and, because of the biases already discussed, the real hazard is probably much less. Similar considerations would apply to other foods. A glass of beer (near the top of the HERP% table), would be about 0.01 Butts or 10 milliButts.

Historical (epidemiologic) studies can indicate whether environmental factors have been dangerous. Is there really a cancer epidemic related to our

Risks of individual actions

Data from Titterton (1981) converted to "Butts" where 1 Butt = 10 minutes loss of life expectancy (U.S.) Pregnancy risk calculated from Eiseman (1980) pp 30-31 assuming 100 deaths/million pregnancies

Action	Butts
Cigarette (one)	1
Sex, once, unprotected woman (mortality in pregnancy)	1
Rich dessert (one)	5
Soft drink, non-diet	1.5
Soft drink, diet	0.015
Crossing street	0.04
Coast-to-coast drive, US	100
Coast-to-coast, flying	10
Skipping annual PAP test	600

widespread use of chemicals? That so-called epidemic arises almost entirely from lung cancer and is clearly tobacco-related (British Medical Association, 1987). Other types of cancer (skin, prostate, ovaries, and pancreas) have increased slightly because of lifestyle (suntanning) or merely longer life expectancies. Farmers don't show any historical health problems despite greater exposures to agricultural chemicals.

Agrochemicals

What if a political decision should be made to try to eliminate agrochemical residues in all foods? The cost of enforcement, lower yields and higher production costs would almost certainly lead to higher prices and hence less consumption of fresh vegetables and fruits.

As increased consumption of these foods has been shown to be connected with better health, this response to the anti-chemical lobby would damage rather than improve public health. Yet food hazards would not be significantly alleviated, since whatever minor risks do exist arise from naturally occurring chemicals. There is no evidence that any consumer has been harmed by synthetic agrochemical residues as a result of lawful application.

Individual Risks

How do agricultural chemicals rank in the list of food hazards? The USDA estimated that the greatest risk from food is microbiological; in New Zealand 1 or 2 people a year die from salmonella poisoning. The next greatest risk is too much food or unbalanced diets, followed by environmental contamination (e.g. nitrate), and only then by agricultural pesticide residues and food additives.

Short-lived insecticides can be a potential hazard to agricultural users, compared to the long-term organochlorine pesticides that they replaced. There is no excuse for inadequate safety measures, excessive quantities, inaccurate placement, or insufficient waiting period. This puts the onus of safe application on those who gain an immediate economic benefit.

Risks from pesticides in food arise from natural chemicals, present in both sprayed and unsprayed food. Development of enhanced "natural resistance" could shift more risk to the consumer, unless that natural resistance is carefully evaluated. Most of these risks are quite trivial.

To quote Bruce Ames again: *Eating more fruits and vegetables and less fat may be the best way to lower risks of cancer and heart disease, other than giving up smoking. Vitamins, antioxidants and fibre come from plants and are anticarcinogenic.* (Ames and Gold, 1990).

There is a strong market for organically grown and/or "chemical-free" foods, and there is no reason why New Zealand producers should not provide food to meet this demand, just as they produce specially killed meat. New Zealand often sells into markets where food is a luxury, not a necessity. We are market-driven, as are the news media whose persistent emphasis on scare stories is a response to the public demand for harmless terror. We should not let the beliefs of this wealthy and well-fed green market cause us to worry that we are at any extra risk by purchasing ordinary, healthy, disease-free produce.

Jay D Mann is a plant biochemist at DSIR Crop Research, Lincoln. The opinions expressed in this review are his own, not necessarily those of his employer. This article has been based on a talk presented at the NZ Institute of Agricultural Sciences 1990.

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Alternative Cancer Clinic Kills Patients Faster

Advocates of Britain's internationally known alternative cancer clinic, the Bristol Cancer Help Centre, have been surprised and shocked to find that their patients are dying faster than those under conventional care.

Alternative Centre Study

The Bristol Cancer Help Centre (BCHC) was set up in 1979 to offer a variety of alternative therapies in the United Kingdom. It used a stringent diet of raw and partly cooked vegetables with proteins from soya and pulses. The ideology of BCHC is that cancer patients can contribute to the healing process in an active way. BCHC offers counselling, "healing" and alternative therapies claimed to enhance quality of life and a positive attitude to cancer.

The BCHC staff and patients felt a need to validate scientifically the results they felt had been achieved. They invited in a team of doctors and scientists who came up with two studies; one to compare survival and the other quality of life.

The survival study followed 334 women with breast cancer attending the BCHC for the first time. Controls were 461 breast cancer patients attending conventional hospitals.

Eighty-five percent of the BCHC patients were under age 55 at diagnosis, more than half had experienced recurrence before entry. For patients metastasis-free at entry, survival was significantly (2.85 ratio) poorer in the BCHC group. Survival was also significantly poorer among relapsed patients in the BCHC group (1.81 ratio).

Researchers note that the substitution of the BCHC program for standard therapy is not an issue since few patients had rejected conventional treatments. It is possible that some important difference exists between patients selecting BCHC and the controls. The BCHC patients seem to exhibit a stronger commitment to healthful living since far fewer smoked than normal, and 41% were already using alternative therapies (such as diet or "healing") upon entry to BCHC. It is possible that the radical diet actually shortened patients' lives.
Lancet pp. 606-610, Sept 8, 1990

The BCHC study provides some important lessons. First, the BCHC staff obviously felt that something worthwhile was happening to patients in their program. The lesson to be learned from this is that subjective observations are deceptive. People view selectively, tending to accentuate the positive and eliminate the negative. Objective analysis can be heartbreaking when it fails to confirm what seems like a good thing.

Second, this experience underlines the fact that many people involved in cancer quackery are sincere. They have had experiences that reinforce their belief that something real and good is happening to patients using their remedies. The lesson here is that sincerity and good intentions are not enough; only objective, critical analysis can determine the real value of therapies.

National Council Against Health Fraud Newsletter, Vol 13, No 6

A natural cancer remedy dangerous?

Jeffrey Tobias

The *Lancet* article on survival of patients with breast cancer attending the Bristol Cancer Help Centre (BCHC) has provoked widespread comment and badly shaken the confidence of those who believed that, at the very least, complementary therapies in cancer couldn't do any harm.

The report confirmed much worse results than expected in BCHC breast cancer patients, who received treatment with dietary measures, relaxation, meditation, and art and music therapy in addition to conventional therapy. Attending the press conference given by the authors and two BCHC representatives, I was just as shocked by the attitude of the speakers from the centre as I was by the results themselves.

On the face of it, they were faced with a serious problem over the credibility of their treatment, though you wouldn't have thought so from the tone of their comments. Dr Michael Wetzler, BCHC medical director, stated *We do not believe that anything we do at Bristol could conceivably be harmful to the patients.*

Why?

What reasons might there be for the very poor results in patients attending the centre? Were they different or more unlikely to be cured in the first place? Did they delay conventional treatment believing that their adherence to the centre

guidelines rendered them immune from relapse of the cancer? Were they psychologically different from those receiving conventional treatment, and if so, is this important? Or could it be, despite Wetzler's bold assertion, that they were actually harmed by the treatment they received?

Of all these possibilities, I find the last much the most likely, based on a substantial experience of patients who have adopted faddish diets, usually on the advice of well-intentioned but wrong-headed "alternative" practitioners who know little about cancer and its curiously unpredictable behaviour.

I have often been depressed by the degree of weight loss encountered in patients who have stuck rigidly to diets similar to that of the Bristol centre, resulting in discord at family mealtimes and quite frequently resulting in a major marital rift.

Arrogance

What arrogance to insist on the central importance of this thoroughly unproved approach with its profound implications for the patient's life. No tea, coffee, sugar, salt, and only the very occasional glass of wine.

Many patients cannot maintain their body weight easily, feel unhappy with the restricted nature of the diet, yet also feel, understandably, in a dreadful cleft stick when it comes to the point of soldiering on with no prospect of returning to their former culinary pleasures or, as they see it, risking relapse and death by giving up and tucking into sausage and chips.

Since the Bristol centre does not routinely follow up its patients closely, it knows little of the true effects of its intervention. For many patients with advanced cancer, enjoyment of normal food is one of the few remaining pleasures, to say nothing of the enormous social importance of partaking in a family meal.

Furthermore, there are certain people for whom the Bristol centre diet is positively harmful for other reasons. For example, in patients irradiated for pelvic tumours (and often cured by this apparently monstrous treatment), increased sensitivity of the lower intestine, resulting in more frequent bowel actions, is the price the patient has to pay for the cure. The Bristol diet, with its emphasis on fibre and vegetable protein, is thoroughly unsuitable and makes matters far worse, sometimes to the point of impairing nutrition.

...simply wishing fervently that something were true does not, regrettably, make it happen.

Yet even under those circumstances, so strong is the Bristol mystique that patients in this category, even given an explanation for their worsening symptoms, may be reluctant to give up what they believe to be good for them.

Desperation

I fully understand and sympathise with the point of view of any patient suffering from cancer that there must surely be something he or she can do independently of the doctor's advice, taking them beyond the appalling loss of control they are faced with. I'd feel the same myself. But simply wishing fervently that something were true does not, regrettably, make it happen.

Those visiting the Bristol centre desperately want to help themselves, to hear about encouraging options which could be valuable. As a group, they are naturally motivated towards believing in what the centre firmly assures them is a series of valuable additions to their conventional treatment.

The very fact of the existence of these centres, with their strong message to patients that there really is a reasonable and realistic alternative to conventional medicine, represents a very real threat to the health of a patient with cancer. Many patients have come to seek advice in our oncology department at a far later stage than they should have done because of an initial visit to a medically unqualified homeopath or "alternative practitioner."

Uncritical

Cancer sufferers naturally turn with gratitude to those who say they can help them, and do not always pay regard to their qualifications. Indeed, I am constantly astonished at the contrast between the extremely lively critical discussions I often conduct (and enjoy) with my patients and the totally uncritical attitude with which they then travel down to Bristol and take on board the most extraordinary advice, which increasingly I find to be far more invasive of their lifestyle than anything I would dare recommend myself.

For instance, since I (and most other practising oncologists) don't believe that there is any such thing as "the cancer personality" I don't expect patients to change their lives by relaxing more, giving up work, meditating for lengthy periods, and so on — unless, of course, they want to do so.

From what I hear from my patients, however, the Bristol centre quite frequently makes

firm recommendations which, if acted on, would necessitate major changes.

Getting Better

Over the past 20 years, conventional medicine has, I believe, developed a much greater regard for the needs of patients and paid more respect to the importance of controlled clinical studies. We have rapidly accepted new approaches when old ones have been shown to be inferior – look at how quickly, for example, mastectomy is being discarded in favour of more conservative therapies. By and large, the medical establishment has not cried foul and, far from being overly paternalistic, has shown itself more flexible and less authoritarian than the "holistic" centres.

It occurred to me that the results of the study might possibly have shown the same result, but with the graphs labelled in the opposite direction – that is, with an apparent twofold to threefold advantage for the Bristol group. What would Dr Wetzler and Mrs Penny Brohn have said then? Would it have been a preliminary statistical quirk? Might there have been differences in the patients' psychological characteristics to account for it? Not a bit of it. They would have been jubilant, convinced that the recommendations of the Bristol Cancer Help Centre had been proved effective. QED, I think.

Jeffrey Tobias is a consultant radiotherapist in London and this article originally appeared in *The Economist*, or was it *New Scientist*...

Homeopathy an option

NAPIER (PA) – Homeopathy could provide the answer to New Zealand's possum problems, according to Napier Mayor Alan Dick.

He told a meeting of his council's planning committee yesterday he had been assured homeopathic methods suggested by the Biodynamic Farming Association would work.

The method involves the incineration of possum carcases, the ashes from which would be scattered over possum-infested areas. The effect was not to kill the possums, but to drive them away.

Mr Dick acknowledged that would only shift the problem elsewhere, but said it was an option.

The Press, Christchurch

The art of possum "peppering" got further coverage from TVNZ in early February. John Pearce, of the South Kaipara Biodynamic Association, used burnt possum testicles diluted with water to clear his property of possums. MAF were said to be conducting trials of the technique.

Great Skeptics Of History #1

The Crusader Radulph of Caen expressed doubts about the discovery of the Holy Lance of Antioch during the First Crusade. The drawing at left shows Adhemar, bishop of Le Puy, carrying the Lance in battle outside the gates of Antioch.

There arose among Count Raymond's people one Peter Bartholomew, skilled in lies and deception. He told how the angel appeared and told him where to find the Holy Lance that pierced the side of our Lord. When Peter was asked for the place, he indicated that it was behind the altar of St Peter's in Antioch, for so he had invented it, and he advised them to dig. He even composed his features so as to command credence. They dug, but to no avail. But Peter secretly had with him an Arab spear, which he had found by chance and had kept as useful material for deception. Seeing that it was rusty, eroded, old and different from what we were used to in both appearance and size, he judged that with this, credence would be given to his imaginings. Therefore, when a convenient moment arose for his deception, seizing his mattock he jumped into the ditch and turned to the corner saying, 'Dig here. Here lies what we seek.' Then striking blow after blow he fraudulently slipped the Lance down from himself as he dug. At the sound of iron striking iron, the ears of simple people pricked up, and the weaver of lies raised up the lance and filled them with these words: 'See what heaven promised, earth preserved and the angel revealed.'

Astrology On Death Row

How accurate is astrology? Researchers in Kansas City recently went to five professional astrologers with the horoscope of convicted serial murderer John Wayne Gacy. Without knowing to whom it belonged, they described him as having a "well rounded personality", that he could "offer a good role model" and that he would "be excellent for working around young people."

A member of Kansas City Committee for Skeptical Inquiry (KCCSI) went to the astrologers posing as a man interested in working with young people. He gave the astrologers the birth date, birth time and place of John Gacy and asked for advice. The astrologers unanimously encouraged him to pursue youth work, and none could see any problem with this.

The real John Gacy is currently being held on death row at Menard Correctional Center in Chicago. He received 12 death sentences and 21 life terms for the brutal rape, torture and murder of 33 young men and boys. Gacy's astrological chart was selected for the test because it should portray a clear picture of a sadistic sexually motivated killer. If astrologers are able to spot personality traits and destinies in any chart, then this is the one they should have no trouble with.

Each astrologer was given the birth date, birth time and place of Gacy and a computerised natal chart made by an astrologer internationally recognised for accuracy (Neil F. Michelson). They were asked to examine the chart for as long as they wanted before giving their reading.

John Sandbach, a nationally known astrologer, who has authored six books, advised him not to "become weighted down with regrets about how you could have done more in some past situation." He described a "plasticity or lack of aggression" in the chart and encouraged him to work with young people because he could "bring out their best qualities."

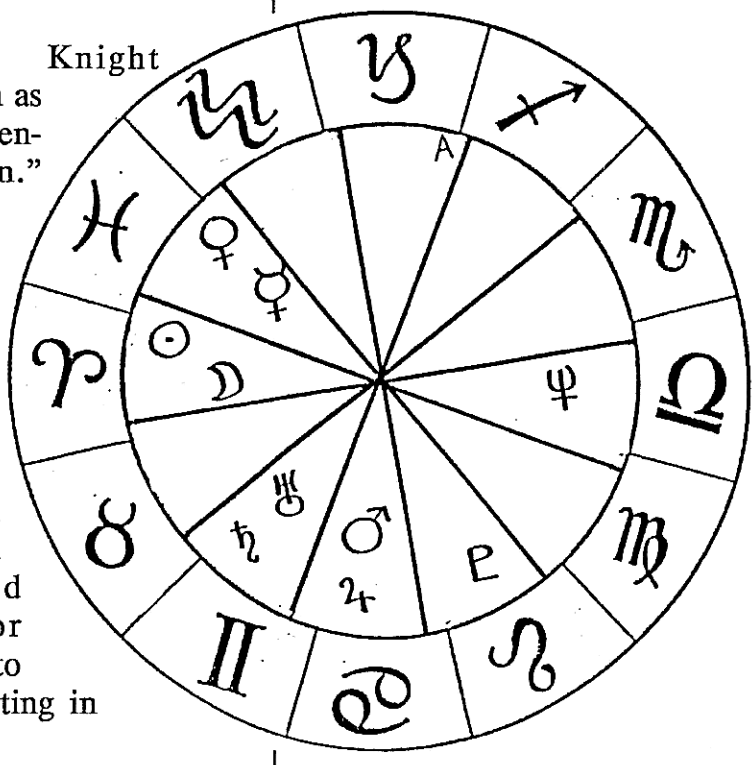
Astrologer Randy Goodman told our substitute Gacy that he was "really born to serve people." He stated that "In the past you have used your energies very well so therefore in this life you have a lot to contribute, and ... your life will be very, very positive."

Norma Knight described him as "a very, very sensitive person." When asked about the youth ministry she replied, "I think that you can be very good with kids and that it might be a good medium for you to learn to be more trusting in the giving and receiving."

Beverly Farrell lays claim to being an "internationally recognised author, lecturer and teacher of religion, metaphysics, astrology and psychic awareness" with "30 years experience in the field of (the) paranormal." She also encouraged the man behind the chart to go into youth work. She stated that "when you're working with young people, you're not going to have a lot of heavy-duty problems."

The results seemed to indicate that astrologers cannot read a person's character from the positions of the planets at the moment of birth, nor can they see into anyone's past or future, nor do they seem to possess any insights other than the ability to impress their clientele.

Indian Skeptic No 11, from the Kansas City Committee for Skeptical Inquiry



Brother Can You Paradigm?

Barend Vlaardingerbroek

Alternative views of reality exist outside the Western framework of rationalism and science, and these views have an internal logic of their own with their own variety of scepticism.

Consider the following statements, all paraphrased from things I have been told by Papua New Guinean tertiary students:

"There is a strange-looking stone just outside the village. A masalai [malevolent spirit] lives in it. If a woman bears a deformed child, we know that she walked near the stone when she was pregnant."

"We always have to be careful about sorcery being worked on us by jealous wantoks [clansmen or tribesmen]. One of my friends here has marks all over her body. Doctors cannot explain it. It must be sorcery."

"We started using different methods to cultivate traditional crops at my village, and there was serious flooding which destroyed many crops. This was because our tumbuna [ancestral spirits] were angry. We went back to the traditional ways and there has been no flooding since."

Are these statements consistent with sceptical thought? The answer I would like to suggest is "Yes."

But isn't scepticism a philosophical position which challenges claims of the paranormal? Of course, but herein lies an implied challenge to Western scepticism, which defines paranormal in terms of a particular world view and the paradigms which underpin it.

Western science is very much the philosophical progenitor of Western scepticism, and Western science is reductionist. It assumes that the whole is no greater than the sum of its parts, that the isolation of the parts is a valid etological approach, and that anything which does not conform to preconditions specified by its methodological approach is therefore somehow outside the scope of "normality."

Alternative Realities

There are alternative ways of conceptualising reality. There are alternative world views associated with alternative paradigms, resulting in alternative logical frameworks of thought and which, ipso facto, give rise to alternative forms of scepticism.

The acid test is not whether or not such alternative world views are "scientific" (i.e. compatible with Western scientifically derived paradigms) or not; it is whether they are internally consistent or not. For if internal consistency is good enough for Western science and scepticism, then surely it is "cheating" – and maybe just a little intellectually dishonest – to insist that non-Western paradigms must validate themselves against Western ones.

Holisticism, at least in the form of considering all phenomena to be interrelated, is starting to creep into physics. Not that there is anything new about a holistic world view – Papua New Guineans have been conceptualising reality that way for millennia.

World Views

What determines the perceived relevance of a given world view is largely the environment, both natural and cultural, in which that world view operates. Take a traditional New Guinea Highlands situation. The "world" is a fairly small place: an area of bush with a patch of sky above and a chunk of "underworld" below, inhabited by a conceptualisable number of entities – people, animals, plants, rocks, waterholes and so on. These constitute the Whole to which people relate; what is outside that very personal Whole is rather inconsequential, and traditional attitudes towards it tend to reflect Stephen Hawking's attitude towards time before the Big Bang – "of no observational consequence".

...alternative logical frameworks of thought...give rise to alternative forms of scepticism.

It is understandable that such a relevant Whole should be treated as such, and not in a reductionist way. So many entities and events are obviously interrelated that it is a justifiable conceptual extrapolation to posit that all things are related. As it is Man who is at the hub of this natural and conceptual ecosystem, the anthropocentrism of the traditional New Guinean world view is equally comprehensible, given its derivation.

Given these paradigmatic frames of reference, little wonder then that the New Guinean conceptualisation of causality is so different from Western concepts. If the Whole functions as such, and the parts

are subservient to it, the very essence of the idea of "cause and effect" takes on a whole new meaning. Statements like "the rain falls to make our crops grow" make sense in the form that our need for crops to grow is the "cause" of the rain falling. They are logical in that they are consistent with a given set of world view parameters.

In fact, the word "because" in the epistemological sense that we Westerners use it doesn't even exist in most New Guinean languages; hence its adoption into the vocabularies of many indigenous languages from English.

Normal And Paranormal

Returning to a small, manageable whole, it also follows logically that any division between the "natural" and "supernatural," or "normal" and "paranormal," is etologically superfluous, as by definition, there is no such beast as the "supernatural" or "paranormal."

What is, is; and what cannot be observed directly can be inferred from its effects — a statement no Western scientist would reject in principle. While paranormality may not exist, abnormality does, and is defined as a departure from normality (of course); so "what is normal?" is the ultimate question.

To the New Guinean it is for him and his family and pigs and dogs and crops to be healthy and happy. This state of affairs — or a departure from it — is an indicator of the harmonious ticking over of, or disharmony within, the Whole of which he is the principal reference point.

Why then illness, crop failure and so on? "Bad luck" is a meaningless phrase to apply to a world view with no need for the notion of chance, in itself a concept inexpressible in indigenous languages. Something has to give rise to these phenomena, something that we would call a "cause."

The real difference between "cause" as we conceptualise it and "cause" as understood by the New Guinea tribesman is exemplified by Highlands ethnomedical practices. The symptoms of the disease are only signs of problems on a higher plane than the individual, and many treatments are accordingly — and logically — at a sociobiological level rather than paralleling therapeutic practices that we use. (Those wishing to delve deeper into these issues may consult Mayer [1982] and Gardner [1987]).

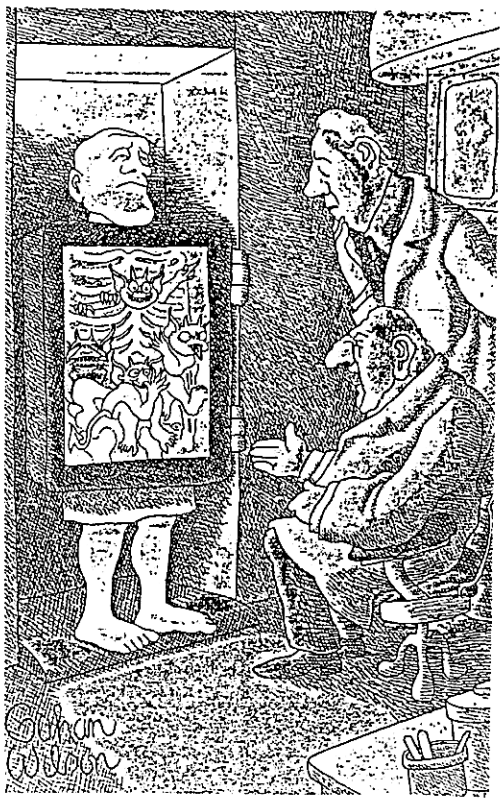
Most causes are, however, what Western skeptics would call the "paranormal" kind — masalais, sangumas (another genre of spirit-being), sorcery, puripuri (magic) and ghosts. But these are not the vacuous zombies which many Westerners envisage when confronted with such terms: they are real, not only in the inferential sense, but often corporeally.

Masalais live in trees, rocks and waterholes, among other sites, and give these natural entities many of their characteristics. Sangumas take on corporeal forms like bats, and may be able to speak through mediums. Ghosts are often visible, and can communicate with the living through dreams. Even a sceptic would regard a dream as "real", albeit outside the scope of scientific instruments, wouldn't he.

There is most certainly as much room for scepticism in a conceptual ecology delineated by the paradigms I have described as there is in one delineated by Western scientifically derived paradigms. As there are rules of logic, so there are ways of evaluating the validity of a claim, which may lead to its being regarded as illogical or irrational.

Paradigms Lost

Problems arise when paradigms are translated from one world view to another. This problem is usually avoided by Western-educated Papua New Guineans adopting a dualistic world view. One set of rules governing reality operates in traditional cultural contexts, and another in non-traditional contexts like a school science laboratory. While conceptual dualism theory generally postulates that each set of rules has its own sphere of influence, it has been found that Papua New Guinean students often apply the same interpretative frames of reference to Western science that they apply to "paranormal" phenomena. (Those with access to *PNGJoE* may wish to refer to Dart [1971] and Young [1977]).



"It's as I suspected—Mr Harding, here, is possessed by demons."

My job is the training of science teachers, and I have taken a step which would raise many a Western skeptical eyebrow: the incorporation of Melanesian ethnoscience and its associated world view into science programs, hopefully starting next year (for details of some of the research leading to this, see Vlaardingerbroek, 1990). Perhaps if Papua New Guinean students can be made to see the holisticism, anthropocentrism and functionalism of Melanesian science – something quite a few are embarrassed about, even though they believe a lot of it – they may be able fully to appreciate Western science's reductionism, objectivism and abstractionism. And it's quite possible that the experience will make them a lot more sceptical about both.

Barend Vlaardingerbroek is a lecturer in science education at the University of Papua New Guinea.

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Maori Science: Hit Or Myth?

By Vicki Hyde

Calls for Maori input in the science classroom are fine for encouraging students in the belief that science is relevant to their lives, but could also be used to cut them off from the international scientific community.

Christian creationists have battled, generally in vain, to have Biblical beliefs taught in school evolution classes. Now scientists and some teachers are worried that another belief system may be pushed into the classroom, as Maori folklore and culture gains attention in the science syllabus.

Five years of intense thought and discussion have gone into the new draft syllabus currently under consideration by the Ministry of Education. The last publicly aired version contained suggestions that teachers need to "acknowledge the beliefs, values and heritage of Maori students". It affirmed the special place of the Maori people as tangata whenua and encouraged the use of Maori language in science.

The reaction of many scientists to these suggestions is one of puzzlement. What relevance, they ask, has this to science teaching? Even the then Minister for Science (DSIR), Clive Matthewson, said he was "a bit surprised" to learn of the recommendations.

"The recognition of any cultural context in a science syllabus only introduces an irrelevance which will inevitably distort and, perhaps, even destroy the very fabric of science education," said Warwick Don, senior lecturer in Otago University's Zoology Department.

Like most scientists, Don considers the universality of science as one of the most important factors distinguishing it from all other human activities. Science deals with the real world and scientific methodology freely crosses cultural boundaries.

Scientists recall with a shudder examples of religious, cultural or political dabblings in science. The Soviet Union's biological sciences are still paying the price for letting Marxist doctrine rule agriculture and genetics. Physiological and psychological studies were used to justify the dominance of one race over another in the United States, Nazi Germany and South Africa.

Ethnoscience

Ethnoscience – the use of a cultural view to explain the observed world – has been gaining ground around the world. At its extreme, it is seen as a means of getting away from white, male-dominated, imperialist attitudes and empowering the cultural beliefs of ethnic minorities.

In the United States, such an approach is being used to teach Hispanic children science from the viewpoint of the ancient Mayan mathematical system and Aztec ethnobotany. This "particularist" approach has been heavily criticised, not least because Spanish-American students would presumably have European science tradition as their heritage, rather than those of South American natives.

Barend Vlaardingerbroek, a lecturer in science education at the University of Papua New Guinea, has long studied Melanesian ethnoscience. He disputes the suggestion that science per se has racist or imperialist underpinnings.

"[To educated Papua New Guineans] science is not generally see as 'white man's science' but as a form of knowledge accessible by all peoples whatever their cultural background, for the benefit of everyone. Science education as a form of cultural imperialism was laughed off so often that it became an embarrassment for me," he avers.

He is concerned that teaming traditional science with a single culturally specific ethnoscience in a multicultural society like New Zealand would "do justice to neither and be deleterious to an understanding of both".

Meaningful Context

Beverley Bell, who has worked hard on developing the syllabus revision, sees the recommendations as less radical than they might appear. The use of Maori concepts and beliefs is intended to provide a meaningful context in which students can relate science directly to their own experiences. By applying a Maori perspective, it is hoped to encourage more Maori students to take up science and to feel less alienated from science.

Pauline Waiti, of the University of Waikato, echoes those thoughts. In the *NZ Science Teacher* journal she outlined ways in which teachers could take a fresh look at science to make it more relevant for Maori students. Thus the unit on "Science and Me" ('Ahau') could start with "Whakapapa" ('Genealogy') to acknowledge the importance of the past. From there, the science units could go on to look at the body, growth and development and so on. Waiti sees the science as being the same, with only the teaching approach being made more appropriate.

She did warn that "we have to be careful that in contextualising content we do so sensitively and accurately, and we must make sure that all the necessary information is passed on. After all, we do not want to 'ghettoize' Maori education."

The recommendations are part of a general move towards greater emphasis on context and learning experiences. The "science for all" approach aims to produce students who are scientifically literate and who find science topics personally and socially relevant.

"We haven't advocated a separate science, a Maori science," Bell says. "We're saying that perhaps the context needs to be looked at differently."

Radical Extreme

A more radical approach is advocated by Helen McGregor, a Lincoln University lecturer, and endorsed by teachers attending her session at this year's Science Teachers' Conference. McGregor contends that there should be no separation between Maori culture and Maori science.

In her approach, the wanderings of Ruaumoko, the goddess of volcanoes, are used to explain earthquakes and the movement of tectonic plates. Whales are classed as mammals because Tane Mahuta, god of the forests, claims them for his realm.

"Mythology is very much a part of scientific analysis," McGregor says. It is not part of her culture to single out any particular area of study. There is no need to teach students distinctions between what is believed scientifically and what concepts have their basis in non-scientific beliefs.

Teachers at her session appeared to have no difficulty with this and, when asked, affirmed that creationism was an equally valid approach for European science students. One teacher recalled work by a geology professor which suggested that the Maori were explaining geological processes when they told legends of wandering mountains. The group speculated that perhaps they were recalling actual events in the geological history of New Zealand. McGregor sees this as providing validation and legitimacy for mixing mythology and science.

The geology professor, John McCraw, Professor Emeritus at Waikato University, says he does not go along with this idea. He's used legends in his Stage I classes to get students interested in the subject and give them a context in which to place the science.

"In no way will I go along with any suggestion that legends should replace 'pakeha science'", he states. "The legends could make at least a small contribution to the integration of Maori culture and pakeha science that the new school science curriculum says is so desireable," McCraw concludes.

Teachers agree that the deplorably low numbers of Maori students in science studies obviously demands more effective measures to gain their attention and interest. The draft syllabus goes some way to addressing those demands; its implementation as suggested by Helen McGregor goes a great deal further.

Vicki Hyde is editor of the *New Zealand Science Monthly*. This article first appeared in the September 1990 issue.

Even Psychics Can Only Be Medium

Gordon McLauchlan

Englishwoman Doris Stokes was a medium – by which I don't mean that her dress size was between small and large. She claimed she spoke to people "on the other side," to use the euphemistic jargon of the darkened drawing-room. She was a sort of cosmic Telecom operator, only I suspect her charges were a good deal higher than 99c a minute plus GST.

I use the past tense because Doris herself has moved on into the spirit world with which she had so long claimed to communicate. Nothing has been heard from her since she died, which I think is pretty contemptuous of her fellow media (the plural of medium).

Doris became world famous and made a lot of money travelling around linking people up with restless ghosts, using what often sounded like an old country-town party-line system. You could never be quite sure who would answer the call or whether some celestial storm had brought the line down.

Doris Stokes was a professional name. She was born Marilyn Dashing in London but her first manager pointed out that if she wanted to make money bringing messages back from the other side to suckers on Earth, most of the clients would be ordinary and wouldn't trust anyone who looked and sounded smart or had intellectual pretensions. So Doris changed her name, burned her grammar school diploma, threw away her tight skirts and blouses and bought half a dozen knitted cardies and several strings of paste pearls.

Doris, or Marilyn as she was then, knew she wanted to be a medium from the first moment she heard the rustle of a pound note being dropped into the jar on the hall table as a donation because she couldn't legally take a fee.

How do I know all this? Vibrations.

I remember some years ago when Doris was in New Zealand promoting a book, a radio interviewer asked her if anyone on the other side had described in detail for her what heaven was really like. Doris shocked me to the very soul by verbally painting a setting and ambience almost exactly identical to an inner suburb of Christchurch on a fine Sunday morning. I was gripped by a deep spiritual crisis, wondering if trying to be a good bloke was worth it after all.

...a psychic can deliver the truth about as often as a prostitute can provide true love at work.

Memories of Doris flooded back when I read in last Saturday's Herald the story of the young Auckland prostitute Leah Stephens, who has disappeared without a trace and left those who love her bewildered and grieving. Police suspect something awful has happened to her.

Her Aunt Rosalie paid money to a psychic to get some idea what had happened and was told Leah was still alive and "she [the psychic] could see water associated with her." The distressed aunt added: "One of these days when I can save up enough money I'll go to another and better psychic. That's what I'll do."

When you come to think about it, a psychic should have as good a chance of anyone of finding a missing prostitute because they're basically in the same business – in the sense that a psychic can deliver the truth about as often as a prostitute can provide true love at work.

The philosopher George Santayana once wrote: *Scepticism is the chastity of the intellect.* I've not much bothered about chastity before, but I do like the intellectual sort.

You sense I feel strongly about this? I can't understand why people aren't outraged by the ripping off of Aunt Rosalie. When quacks cash in on the desperation of people terminally ill, everyone gets angry. When psychics and fortune-tellers cash in on grief, everyone sits down and looks away.

According to the Summary Offences Act, it is illegal to pose as a medium with the intention to deceive, and the Fair Trading Act could probably be invoked as well. But the law wouldn't be needed if it wasn't for the thousands of people – mainly women in my experience – who should know better but who suspend their normal common sense and reuse to apply their rigorous intelligence when con-

fronted by the occult. They play with this nonsense, refuse to discuss subjects like astrology and the so-called paranormal in the same questioning way they discuss others.

Actor Shirley MacLaine and other Americans made millions of dollars from the New Age nonsense that swept this country a couple of years ago. Remember the crystals? The crystal cranks are no doubt off on something else now.

Scientists may be flawed as people, just like the rest of us, and science may take us down cul-de-sacs from time to time, but when science and the occult clash, the occult always, I repeat, always loses. I challenge any who will do so, to write down these great enligthenments they've had from psychics and fortune-tellers and hear how absurd they sound when they read them back. Send them to me, if you dare.

Whenever I've said this before, the only reply I've ever had is the retort that I have a closed mind. But a closed mind is one that wraps itself around every hairy hypothesis, one whose imagination is satisfied with flat and prosaic images such as Doris Stokes's heaven, one that encourages phonies to take money from our grieving Aunt Rosalies.

Life is rich enough with real mysteries to engage the most marvellous imaginations without having to do business with cheap phonies.

Star Sunday, 2/9/90

'Wilson's Almanack'

About this time every year some diligent journalist trawls through all the year's events that made news and matches them against a list of predictions published a year earlier.

The ensuing article enthuses over how accurately some far-sighted mystic was able to predict great events.

The most recent example of this art form came after Iraq invaded Kuwait and America despatched first its army, and then Bob Hope, to show Saddam Hussein the error of his ways.

Inevitably a journalist somewhere resurrected the ghost of the 16th century astrologer, Nostradamus, and his much publicised prophecies, delved into the quatrains and pulled out a passage relating to a war in the Middle East.

"Nostradamus foresaw this war!" the scribes screamed, knowing that even if they got the quotes wrong, Nostradamus wasn't about to drag them before the Press Council.

The precedent for this was his reference to a tyrant named Hister which by the time it got into print had become Hitler and so Nostradamus was regarded as the man who predicted the rise of the Nazis 400 years before even Adolf Hitler thought up the idea.

Nostradamus wasn't the only astrologer who did a sideline in predicting the future. Various other blokes with unpronounceable names, aware there was little profit in casting horoscopes for peasants that predicted they would live miserable, squalid lives and die forgotten, hatched on to the scheme that peasants, even poor ones, were still fascinated by what the future held, or would hold.

Better still, they would pay money for a yearly almanac, a sort of "Best Predictions of 1566". And so was born a new publishing venture that endures to this day.

Every year or couple of years one of these old almanacs is dusted off and analysed with the benefit of hindsight so that some obscure remark like "And dust shall swirl and the land echo to the cry of constipated camels" is interpreted as an incredibly astute prediction of some big event that's just happened in the Middle East.

This, of course, ignores the fact that there are always wars in the Middle East. Always have been, always will be.

And therein lay the kernel of an idea, an idea to produce an almanac of predictions relevant to today's readers, written in an easy to comprehend language, and containing predictions that, like Edmond's baking powder, are sure to rise, and always be relevant.

So welcome to the first ever, collector's edition of "Old Wilson's Almanack", sub-titled "Events that will occur in the next 12 months, predicted here so that ye may plan your life and holidays around them".

I've dispensed with the bizarre French verse favoured by Nostradamus and, unlike him, I've not written it backwards with the aid of a mirror. Mind you, working with a computer is similar. Anyway, on with the predictions:

1) There will be conflict in the Middle East. People who dwell in arid lands will find it in their hearts to target hulking great missiles on other dwellers in other arid lands. They, in turn, will target their hulking great missiles on the first lot of arid land dwellers. Do not take a holiday near arid lands.

2) Great riches will be won by folk who do not suspect their imminent wealth is quite so imminent. They will learn of this wealth on a Saturday night and get legless on spirituous liquors upon learning of their fortune. The other two million people with losing Lotto tickets will gnash their teeth and think foul thoughts of the lucky sod with the six numbers.

3) Beware ill tidings that may arrive without warning and induce within the recipient feelings of great anxiety. They will pass. But, like the sunrise and taxes, there will be another bloody rates bill in two months.

4) The man who believes that his technology is infallible will be rudely awoken, and suffer great embarrassment at the hands of intolerant fellow citizens. Society has not yet invented the motor car that never breaks down.

5) There will be conflict in the Middle East. Not the conflict mentioned in (1), but another stoush, also involving dwellers in arid lands. As a result, the arid lands are definitely off the holiday list.

6) Cats and dogs will continue to despise each other.

7) Young men will continue to be fascinated with fast cars, booze and women, not necessarily in that order, although a select few manage to combine all three.

8) The Government will invoke harsh new measures to save money while at the same time promising the peasants a glorious future. All the peasants have to do is find the cash to survive the next 20 years.

9) The Sun and the Moon shall align and exert influences upon deepest space. Actually this doesn't mean a damn thing for someone trying to find the money for next week's groceries, but all the astrologers throw in a reference to the Sun and the Moon, if only to prove that they've heard of them.

10) There will still be conflict in the Middle East. As a result, travel agents trying to market holidays in arid lands will go broke and join the queue at the Lotto outlet, hoping like hell that prediction #2 applies to them.

Because it's pretty grim, I've left the worst prediction till last.

11) All through the land, the peasants shall find that their meagre savings are exhausted and still they crave more funds for urgent needs. Christmas is only 358 days away. Happy New Year!

—DAVE WILSON

The Press, Christchurch
December 31st, 1990

Medical Roundup

Dr John Welch

In Issue 16, I reported on an AIDS treatment scam run by a British doctor, James Sharp, and an Iraqi vet. This had been exposed as such by an investigative journalist.
Lancet Vol 1 No 8642 p856

An article in the *British Medical Journal* highlighted the circumstances which led to Sharp being struck off the Medical Register by the General Medical Council. The GMC was appalled by Sharp's behaviour as he had "sought to take advantage of particularly vulnerable patients and their relatives". The GMC was criticised for its reactive role and the article questions "the unwillingness of doctors to report colleagues whose ethics are questionable."
BMJ Vol 299 9 Dec 1989 p1418-1419

We have had a similar episode in NZ (see The Milan Brych Story *NZ Skeptic* No 18) where a recent survey found that one third of Auckland GPs practised at least one form of alternative medicine, ranging from massage to moxibustion, acupuncture to anthroposophical medicine. Unless the medical profession can demonstrate a progressive and scientifically based supervision of medical practice, we will find such controls applied from outside the profession.
NZ Medical Journal 103: 213 1990

Vega machines are essentially a Wheatstone bridge measuring the potential difference between a hand-held electrode and the patient's left middle toe, a recognised acupuncture point. A Dr Steeper extended this "test" on a 16-month-old child by "directing questions from his own subconscious mind to the subconscious mind of the patient." As well as allergies, the testing revealed "inherited chronic miasms from ancestors who may have had venereal or mental diseases, but which could be removed from the child by appropriate homeopathic treatment."

The two other patients reported in the article were also subjected to equally fantastic diagnoses which prompted the Medical Practitioners Disciplinary Committee (MPDC) to find Dr Steeper guilty of professional misconduct.

The MPDC accepted that some patients are not fulfilled by orthodox medical treatment and consult with alternative practitioners. However, they went on to say if that was the case "then the doctor should not operate under the guise of orthodox medicine." The only part of the report that I disagree with is where it stated "unorthodox or alternative medicine was not on trial". I say why not? I maintain that possession of a medical degree implies an understanding and acceptance of general science. Doctors who consistently demonstrate ignorance in this respect should be forced to either abandon what the MPDC called "foolishness" or give up their Practising Certificate and join the alternative camp.

The ruling of the MPDC does nothing to quell the use of these Vega machines although they stated "that this bioenergetic system was operator dependent and not amenable to critical evaluation or examination". Operator dependent simply means that the delusion of "Vega diagnosis" is in the mind of the operator.

This article is well worth reading in its entirety as it is a good illustration of current professional medical attitudes towards unorthodox medicine which, in my opinion, are too lenient.
NZ Med J 1990; 103: 194-195)

L-tryptophan is an essential amino acid, harmless in the doses found in natural foods. It has been marketed in NZ for the treatment of insomnia, premenstrual tension and depression and is not registered as a medicine.

From all over the world, reports are coming in of the eosinophilia-myalgia syndrome caused by L-tryptophan in either tablet or capsule form. The symptoms of the disorder include severe muscle and joint pains, weakness, fever and skin rash.

This is a classic example of the dangers of taking untested drugs not subject to the normal controls of a licencing authority.
Circular Letter to Medical Practitioners, Dangerous Diets, *Lancet* Dec 16 1989 p1466, *NZ General Practice* April 24 1990, *New Scientist* 7 July 1990 p6, *BMJ* Vol 300 10 March 1990 p692.

The latest quack remedy is germanium, used as a "cure" for myalgic encephalomyelitis (ME), AIDS and other chronic diseases. Japanese doctors are reporting both deaths and irreversible renal damage from its use.
Lancet Sep 23 1989

This, and the L-tryptophan tragedy has lead the UK-based Campaign Against Health Fraud (CAHF) to call for the banning

of the sale of germanium. CAHF has formed sub-committees to prepare position statements on such topics as *Candida albicans*. Their address is in the article in *The Practitioner* 8 October 1989, Vol 233 p1329-1330.

The substance "Tach" is the latest AIDS "cure" to come out of China. Made from 300 herbs, the substance comes in four colours, dealing with different aspect of the disease. The white form is for opportunistic diseases associated with AIDS (unfortunately there is no type for opportunistic treatments); the yellow attacks the "clinical symptoms" of the illness itself; the red helps the patient's overall recovery (well red?); and the green is for carriers of the AIDS virus who had not yet developed the full-blown disease.

Is there no end to human desperation and foolishness? In the UK, a recent court ruling could lead to higher licensing fees for "natural remedies". The judge was Mr Justice Pill!
NZ Doctor 3 Sep 1990

Cholesterol blood tests may be dangerous to your health! People with moderate levels of blood cholesterol may wrongly conclude that they are "all right". This may interfere with population-based strategies aimed at getting an overall reduction in the consumption of saturated fat, which is metabolised by the liver into cholesterol.

Those people with higher cholesterol levels may be put on long-term drug treatment with new cholesterol-lowering drugs which have unknown long- term side effect profiles. These drugs can also be very expensive.

Rather than screening whole populations, it makes more sense to test individuals at higher risk, such as those with a family history of high cholesterol, and persevere with a population-based reduction in fat intake to no more than 35% of food energy.
New Scientist 23 June 1990

Animals are unfortunately not immune from being caught up in human health delusions. Bears are believed to be able to eat anything without becoming ill, with their gall bladders detoxifying substances ingested. Because of this, unfortunate bears are being forcibly and fatally deprived of their gall bladders so that Korean herbalists can prepare a "powerful all-purpose tonic". These simplistic, medieval beliefs are creating a demand which has led to the near extinction of many animal species.
The Economist April 1990 p37

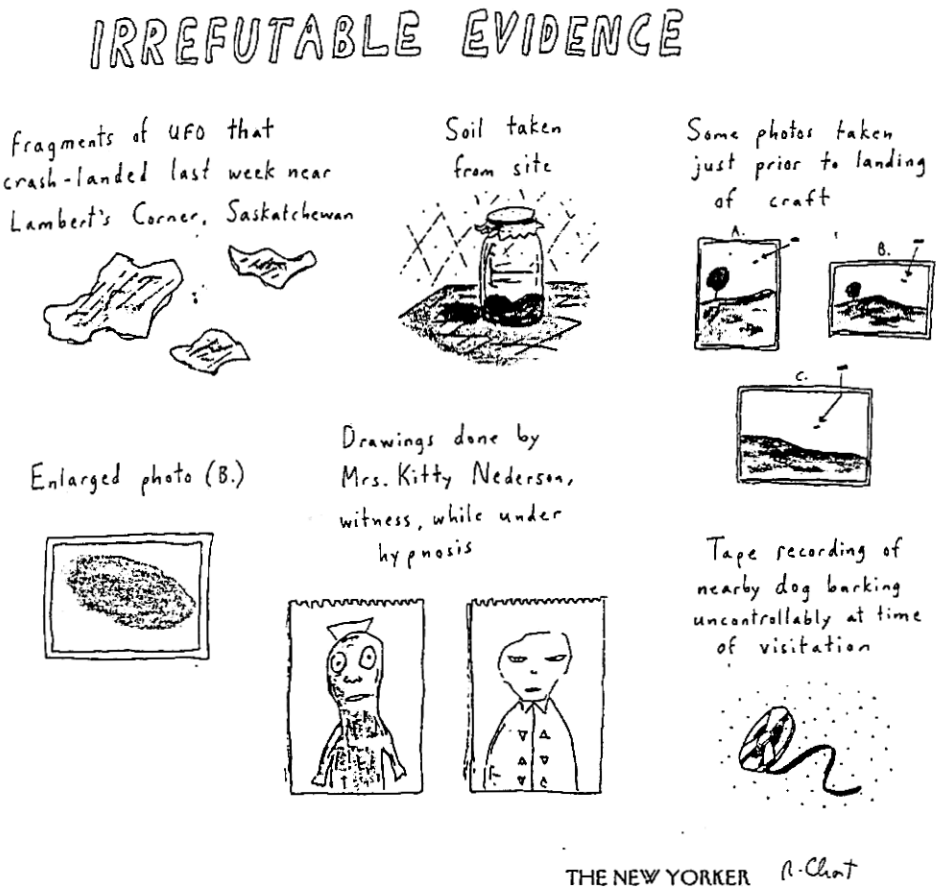
A Fishy Tale?

On a lighter note, a Filipino woman claimed to have given birth to an 18cm mudfish which has been named Angeline Dyesebel. This was confirmed by her husband who reported hearing it say "ik ik" shortly after the delivery. We are not told whether the birth was attended by a gynaecologist or an ichthyologist, but Angeline is doing swimmingly well in the local mayor's aquarium. Armed guards were stationed to control the crowds whose numbers appeared sadly deficient in skeptics. As the mother tried to bottle-feed the fish the crowd insisted, "it's sucking, it's sucking".

The fish will enjoy a Roman Catholic baptism if the local priest can be persuaded to go along with it. However, a doctor (spoilsport!) who had examined the mother prior to the delivery was "convinced that she had never been pregnant".

The mother is 45 and, in addition to the fish, has had 11 children.
Marlborough Express Wednesday October 17th 1990

Dr John Welch is a medical officer with the RNZAF.



Book Reviews

Magnetic Healing and Other Realities, by Colin Lambert. Moana Press.

Reviewed by David Riddell

Colin Lambert is a magnetic healer from Waihi, and in this book he tells his story. Brought up as a Baptist, and a former painter and paperhanger who left school at 14, his background could not be more ordinary. Today, however, his occupation and philosophy of life are utterly remarkable.

Lambert's book is the fullest presentation I have ever read of the beliefs which have come to be lumped together under the label "New Age".

Under this philosophy, anyone can strive to find his or her own level of enligthenment by any number of paths, be it through astrology, alternative medicine, aura reading, telepathy, reincarnation, palmistry, astral projection, spiritualism or whatever. As yet, it is a rather amorphous grab-bag of ideas, but it seems to be developing into a religion for 20th-Century Westerners who are disillusioned with materialism.

Ironically, Lambert spends a chapter ripping into religion in general, and fundamentalist Christianity in particular, yet many New Age beliefs parallel those of Christian fundamentalism very closely. The Bible is replaced by "New Age Teachings" and other bodies of wisdom "channelled" through mediums from long dead sages, "space people" or something called "I am consciousness."

These say that there is a time coming when the world will be destroyed in a great holocaust, but those who have achieved enligthenment will first be beamed up to the space people's orbiting ships. Afterwards they shall be returned to a cleansed Earth to dwell in the New Golden Age.

New Agers (some at least) believe in possession, too, only the possessing entities are not demons, but the souls of dead materialists. Unable to come to terms with spiritual existence, they try to return to physical life through another person. Curiously, Lambert also believes in reincarnation.

So, do unenligthened souls wander forever in limbo trying to possess a living body, or are they reborn as babies? On different occasions, Lambert says both.

The scientific content of some of the channelled messages reproduced by Lambert is ludicrous. I particularly liked the bit about how, on other planets where beings have trouble as a result of "disassociating the elements" (splitting the atom), they have solved the problem (with help from the "higher realms") by putting the elements back together again!

The implausibility of such things is lost on Lambert, however, as he has not the slightest idea of what science is about, and is proud of the fact. In his view "what we term 'science' is a path towards the total destruction of mankind."

Throughout, he confuses science with the technology that science makes possible, and fails to grasp that science is about ideas, not hardware. It is, in effect, a procedure for developing and refining our understanding of the world around us, and that in itself can be no bad thing. With understanding, however, comes an expansion of our human potential, and that potential is unfortunately increased for evil as well as for good. We must all take responsibility for this, rather than blaming "the scientists" when things go wrong.

I think it is Lambert's total rejection of reason that I find most objectionable about this book, though his condescension towards those of us who are not as enligthened as he can be irritating enough. He says (while attacking religion again) that a few hundred years ago, people with his healing powers would have been burned as witches.

Things are different now, though, precisely because of the rise of science and reason. Yet Lambert would see this world view overthrown and replaced by a "positive", "true" or "holy science" in which new knowledge is gained entirely by intuition or from "channelled" messages. Such is not the path to a New Age, but back to the Dark Ages.

What of his healing powers? His procedure is to run his hand over the patient until it meets "resistance". Then, he scoops up the invisible poison, or badness, at that spot, and drops it off the edge of the couch. Most of the patients he treats this way have nonspecific complaints which orthodox doctors cannot identify, and with these he claims considerable success. He also writes of curing a badly sprained ankle al-

most immediately, and a pinched sciatic nerve over a few days.

He claims to be able to cure cancer, but most of the "tumours" he removes have never been diagnosed as present in the first place. Of the three diagnosed cancer patients he writes about, two died soon after treatment, and in the third case, all he did was remove the "radiation" from a patient successfully treated by radiotherapy. A terminal leukaemia patient did, however, have a complete recovery after a treatment by Lambert, he claims. Spontaneous remissions are known with this disease, however. Is this such a case? Has he had other successes with leukaemia? How about failures? Many questions remain unanswered.

The same goes for his experiences with AIDS patients. He mentions treating four, but no more is said of the progress of three of them after treatment. The fourth improves considerably. Again, this is a disease which advances in cycles, with periods of remission between bouts of serious illness. What is this patient's condition today? If he is cured of this invariably fatal disease, why have we not heard more about it?

With multiple sclerosis, he admits he can do little, but he does claim to have diagnosed it in a young girl at a stage much earlier than orthodox doctors could detect. Has this girl since developed this disease, or was it never there?

Reading this book left me with so many unanswered questions. It would be very interesting to talk with some of Lambert's patients, particularly if they were treated more than a few months ago for some previously diagnosed condition. Failing that, my feeling now is that magnetic healing, along with so many New Age ideas, is an illusion. This book reminds me a lot of one I saw about 12 years ago about the psychic surgeons of the Philippines. The same miracle cures, the same enthusiastic testimonials from cured patients. Colin Lambert has, in fact, worked alongside one of them and never questions that they're genuine. Yet that particular bubble burst, for most people, long ago. Tests showed that the tumours the surgeons were "removing" were pig fat or other non-human material, and now the psychic surgeons, once the wonder of the age, are just another chapter in the history of human gullibility.

Not that I'm suggesting Lambert is a fraud. I'm sure he genuinely believes in his own "reality" as he describes it, but I think there may be other realities which fit the facts better. No doubt Colin Lambert would feel deeply sorry for me.

♦ ♦ ♦

Secrets of Science. By Graham Phillips. Pan, 1990. 168pp. $9.95 (paperback).

Reviewed by Denis Dutton

Will animals ever be able to talk with humans? Australian astrophysicist and science journalist Graham Phillips points out that there has been much wishful thinking in experiments to show that animals can use language. Koko, the gorilla taught to use sign language by California researchers, is a famous case. Among her reported feats was to look at a horse with a bit in its mouth and sign "sad horse." When asked why, she signed "teeth."

But careful studies of videotapes show that Koko and her simian cousins in other experiments randomly produce many signs when they want a banana, a hug, or something else. Their doting trainers tend to read more intelligent intent into this than is actually there. Anyone who has watched, or been, an overenthusiastic parent will understand.

Animal language is just one of the topics of this entertaining book. Phillips ranges over Atlantis, evolution, extraterrestrial life, lasers, the next ice age, quasars, cholesterol confusion, space elevators, time travel, nuclear radiation and many other topics. Each of the 40 short chapters presents a single scientific curiosity.

For instance,, you may be interested to know that if you commit suicide by jumping off the Empire State Building, you'll hit the pavement at 190 km per hour. This, however, is the same as jumping out of an airplane at 10,000 metres, because of air resistance. At exactly that speed, air resistance cancels out gravity for a falling body that is spread out. Keep yourself straight upright, Phillips says, and you can add to your speed. Perhaps he ought to have forewarned readers that this will decrease life expectancy by a second or two. Now consider the moon, where there is no air. A feather dropped from 3,000 metres on the moon would hit the ground at an explosive 360 km per hour. Imagine an astronaut sliced in half by a falling feather.

No, don't imagine it. Think instead of what happened to an elderly Australian couple who were sucked out of their car by a tornado in 1976. Their bodies were found stripped naked, 60 metres from their car, which had