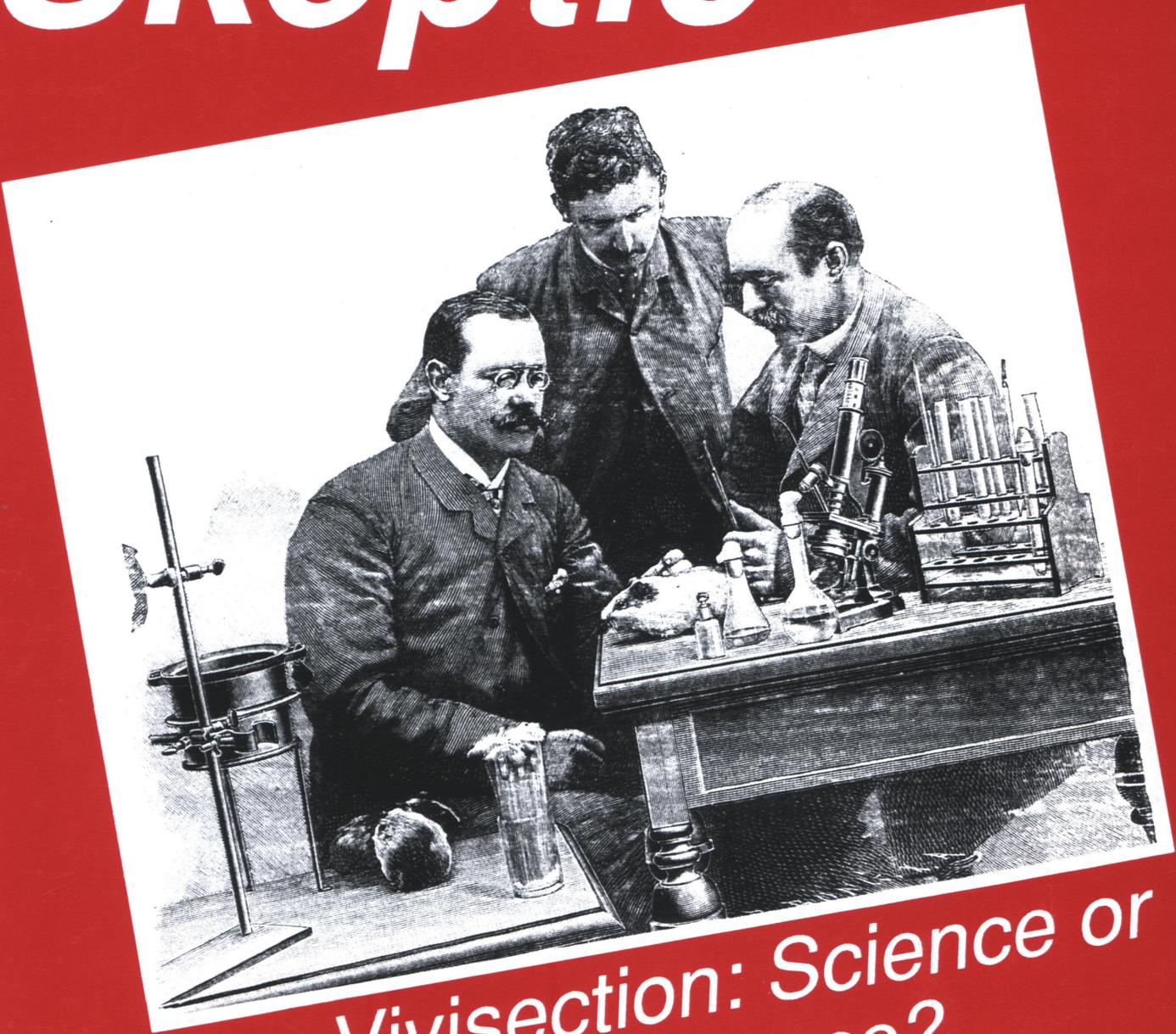


Volume 8 Number 3

The Skeptic



**Vivisection: Science or
Pseudoscience?**

Also in this issue:

Here there be Dragons
The Flying Saucer Myth
Healing waters

£1.85

Hilary Evans' Paranormal Picture Gallery



What the pilgrims hope for: in 1950, Marie-Thérèse Leprêtre leaps up, claiming to be miraculously cured of Pott's Disease. . .



. . .but the priest's parting words to the pilgrim are 'see you here again next year!'

Lourdes, the continuing miracle: part two

What keeps the pilgrims coming to Lourdes is not only the memory of Bernadette's supposedly miraculous experience, but the continuing miracle of the alleged cures. It is an unquestioned fact that a certain proportion of those who come to Lourdes, hoping the Virgin will reward them by healing their physical ailments, do in fact benefit from the trip.

It is equally a fact, of course, that the vast majority do not so benefit. This would not destroy the wonder of the miracles if they actually occur. But this remains very doubtful. Dr Donald West, after assessing the 'best' cases proposed by the medical authorities, concludes that 'the evidence for anything "miraculous" in the popular sense of the expression is extremely meagre'.

But five million pilgrims every year hope to prove him wrong...

Hilary Evans is co-proprietor of the Mary Evans Picture Library, 59 Tranquil Vale, London SE3 0BS

CONTENTS

Volume 8, Number 3

Editors

Dr Steve Donnelly
Toby Howard

Subscriptions and Finance

Dave Martin
Dr Dave Love

Cartoons

Donald Room
Tim Pearce
William Freeman
Malcolm Campbell

Proofreading

Jane Bouscœeld
Daf & Mike Tregear
Angela Cernoculski

Special Consultant

Cyril Howard

Publicity

Chris Nash

Printing

Chapel Press, Stockport

Hits and Misses	4
Steve Donnelly	
Animal Rights: Science or Pseudoscience?	6
Simon Brophy	
Vivisection—The Case Against	9
Lynn Williamson	
Water, Water Everywhere	12
Russell Dear	
Saint George and the Whale	14
Sergio Della Salla	
The Saucer Error	17
Martin Kottmeyer	
Psychic Diary	19
Toby Howard	
Skeptic at Large	20
Wendy Grossman	
Reviews	21
Letters	27

The Skeptic is published bimonthly from PO Box 475, Manchester M60 2TH, UK. Opinions expressed are those of the authors and do not necessarily represent those of the editors.

ISSN 0959-5228

Copyright © The Skeptic 1994

A big thank-you to all our clipping contributors, who for this issue include:

Mark Butler, Arthur Chappell, Jack Cramb, Gerald Fleming, Earnest Jackson, Donald Room, Mike Rutter, Gillian Sathanandan, H Sivyver, Steuart Campbell, Marie Donnelly, Austen Moulden and Brian Slade.

Sorry if we've missed anyone out! Please keep the clippings coming!

Hits and Misses

Steve Donnelly

Words of wisdom

Sometimes the wackiness of the world can be rather difficult to believe even for hardened *Skeptic* columnists. For instance, the idea that so many people really believe that the spirits of the dead babble banalities to mediums in meeting halls throughout the land is hard enough to understand—especially if one has had the privilege of seeing a few mediums in action. But at least the dead persons in question did once possess the ability to communicate with others and perhaps it is an understandable hope that a mere inconvenience such as death should not deprive an individual of that ability. But how can one even begin to understand the mentality of the subscribers to the *Barbie Channeling Newsletter*, a publication in which the spirit of the blonde, large breasted, plastic dolly reveals her intimate thoughts, and answers personal queries? According to the *Sunday Telegraph* on 1 May, the story began when Barbara Bell a New Age channeller, began receiving psychic messages from the miniature blonde bombshell when she noticed a dozen of her daughter's dolls strewn across the floor of her home in San Anselmo, California. 'I thought "What does this doll think?" and Barbie's voice just popped into my head, saying "I need respect."' After 35 years of being stripped naked and decapitated by 10 year old sadists, I'll bet she does. Since that moment it has been difficult to silence Barbie who has had so much to say that her musings on life, the universe and Ken her plastic (but impotent) companion have filled numerous editions of the *Newsletter* which sells at \$3 a copy.

Sadly, publication has been temporarily curtailed by Mattel, the giant toy company that markets the doll. They believe that the connection between Barbie and the psychic world is not good for her (and their) image and have threatened Barbara Bell with a multi-million dollar lawsuit. Mattel spokesperson, Lisa McKendall said: 'We've never heard of anything like this before but we had to stop it, because it's dealing with the occult, and Barbie is a product for children.' Bell has now reluctantly dropped all references to Barbie from her publication but insists that she will continue publishing the profound (but now anonymous) musings of the world's most popular doll.

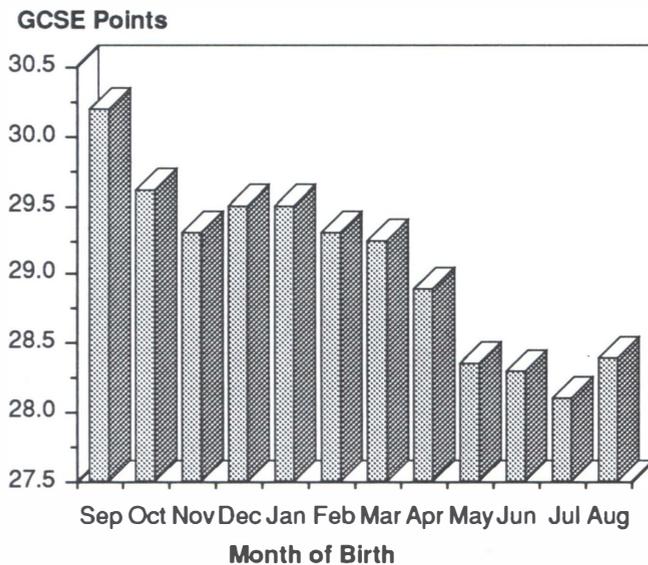
Animal magic

It is easy to believe that it is only in California that craziness on a par with a channelled Barbie could occur but a story in the *Good Weekend* supplement of the Melbourne newspaper *The Age* on 2 April shows that even the denizens of down-to-earth, down-under occasionally produce nonsense of note. Healing of pets using a variety of methods is relatively common, and depressed dogs and constipated cats are no doubt being successfully homeopathically, psychically and holistically healed all over the world. But Susan Scott, a naturopath from the Blue Mountains (an area west of Sydney) has come up with a new slant on the activity. The job of animal-healer is usually made significantly more difficult than that of person-healer by the fact that animals cannot describe their ailments. This is not the case with Susan Scott's patients, however, as she psychically communicates with pets and obtains their advice on suitable herbs and diets to cure their ailments. Her patients to date have included goldfish, birds and recently a pair of ferrets with respiratory tract infections. Although direct contact with the patient is preferred, hair clippings can apparently be used as a gauge of an animal's health (although I would have thought hair clippings of any type would not be a good sign for a goldfish).

Autumn versus summer babies

Readers with long memories will remember, no doubt, that in a letter in *The Skeptic* 3.1, Michael Heap suggested that the fact that the school year begins in September might be expected to result in performance differences between children born in the autumn and those born in the summer. This is as a consequence of the fact that admissions policies in many primary schools result in children born in the autumn starting at age five, whereas those born in summer may only be four and a half when they begin school. Recent research carried out by a number of local education authorities on the correlation between month of birth and GCSE performance





has indicated that Michael Heap's hypothesis may well be correct. For instance the graph above shows the mean GCSE point scores of the 15,000 pupils who took GCSEs in Oxfordshire between 1991 and 1993. (A grade A counts as 7 points, a grade B as 6 points and so on). September-born children are a full two points ahead of July children—a difference that for children at the critical C/D boundary would result in two fewer passes for the July-born. Undoubtedly this data will be used as an argument in favour of good-old sun sign astrology—I just hope that someone in the near future will carry out a similar study for countries with different admissions policies in their primary schools.

In the stars

Authorities in Lithuania are becoming increasingly concerned about the safety of Chernobyl-type reactors at their Ignalina nuclear plant and are seeking expert advice from a variety of sources as to how they can assure their future safe functioning. It will give no reassurance to skeptics either in Lithuania or elsewhere to learn from a recent *Associated Press* report that one of the new safety consultants engaged by the plant, is Mr Pavel Globa, a popular Russian astrologer. Mr Globa, who apparently foresaw the Chernobyl disaster, says he has a 'funny feeling' about one of the reactors and is in the process of drawing up a detailed astrological chart for each reactor. I'm glad such a (sub)critical matter is in safe hands.

Big game

Police with loud hailers cordoned off an area of Enfield recently whilst a helicopter hovered overhead and experts from London Zoo were rushed in with tranquillizer guns to catch a ferocious escaped lion. Unlike the Beast of Bodmin mentioned in a recent *Hits & Misses* (*The Skeptic* 7.6), the dangerous animal this time was not black but sort of lion-coloured—or perhaps tabby or ginger would be a better description. The wild beast, however, turned out to be nothing other than ginger tom cat, Bilbo according to the Enfield, Edmonton, Palmers Green and Southgate *Independent* on 16 March . . . or tabby cat Tiggy according to the

Enfield, Palmers Green, Southgate and Edmonton *Gazette* on 17 March. According to Chief Inspector Bob Barker of Edmonton Police: 'Members of the public were convinced they had seen a lion or a large cat similar in size to a puma. It was right that people should treat the reports seriously'.



Tim Pearce

Submarine Nessie

And finally, the Loch Ness Monster once again made it into most newspapers in the middle of March following the headline-making revelation in the *Sunday Telegraph* on 13 March that the famous 'Surgeon's Photograph'—the best-known Nessie picture of all—was actually a hoaxed photograph of a small model attached to a toy submarine. The photo was attributed to Colonel Robert Wilson, a respectably Harley Street consultant who claimed to have taken the picture on 19 April, 1934. In fact, according to the *Telegraph* article, he was simply the front-man in a hoax perpetrated by Marmaduke Wetherall, a film-maker and self-styled big-game hunter who had been sent by the *Daily Mail* to investigate the monster story. The revelations came from Wetherall's stepson, Christian Spurling, just before he died at the age of ninety last November. Spurling, who was the last of the five people involved in the hoax to die, was a skilled model-maker and claimed to have constructed the model along the lines of a sea-serpent out of plastic wood. It was then taken to Loch Ness and photographed. However, this will not end the legend—for instance, in a letter to the *Scotsman* on 19 March, Nessie expert (and *Skeptic* contributor), Stuart Campbell is sceptical of the model story and asks, 'Why should we believe a claim that cannot be verified and which conflicts in some respects with the evidence?'. Why indeed?

Steve Donnelly is a physicist and a reader in electronics and electrical engineering at the University of Salford.

Animal Rights: Science or Pseudoscience?

Simon Brophy

Do anti-vivisectionists make pseudoscientific claims?

READERS MAY BE AWARE of the recent upsurge in the activities of the animal rights extremists. These groups regularly contribute to the correspondence columns of local papers; they are often seen distributing literature and rattling collecting tins in town centres and they use their extensive funds to lobby parliament and distribute propaganda in schools.

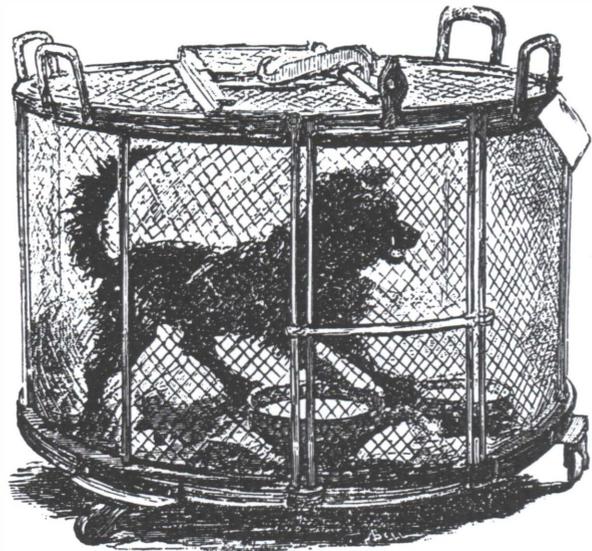
Many people know of groups like the National Anti-Vivisection Society (NAVS) or the British Union for the Abolition of Vivisection (BUAV). Most are not aware that there are a few low-budget organisations that support medical researchers and publicise the facts about animal and medical research. One of these is the Research Defence Society (RDS).

Many animal extremists have sincerely held beliefs about the rights of animals. The issue of animals in research, however, is complex with both scientific and moral dimensions. The moral dimension is highly personal and difficult to prove, but much anti-vivisection literature bolsters its moral arguments with what purports to be scientific evidence. The purpose of this article is to examine the nature of some of these claims.

Promoting theories or beliefs in such a way as to give the appearance of some foundation in science, but without the substance is pseudoscience. Martin Gardner, John Sladek and others have often commented on this practice [1,2,3].

The boldest technique of the animal rights movement is to make an unsubstantiated claim. This is not even pseudoscience, it is simply story-telling. At a public debate last year between the RDS and the frighteningly named 'Doctors in Britain Against Animal Experiments' (DBAE), the representative from DBAE (making at great length the undisputed point that animals have differences from humans) claimed that sheep can eat arsenic and that cats are unharmed by botulinum toxin. With no evidence offered for either of these foolish claims they must be seen simply as breathtaking whoppers. The Radners identify the following features of pseudoscience [4]

1. Anachronistic thinking: This is the re-adoption of ideas that have already been shown to be unworkable, that is, the belief in a state of affairs that has already been superseded by new evidence. This is clearly seen in the attempts by the animal rights movement to attack the basis of animal research by using the 'species differences' argument—an example of this is in the claims made about the use of animals in the development of modern anaesthetics: chloroform is a useful anaesthetic in people but kills dogs [5].



Mary Evans

This is wrong not only because it implies that chloroform is safe for humans, which it is not, and that it is extraordinarily toxic to dogs, which it is not, but also that chloroform is currently useful as an anaesthetic, which it is not. It is doubtful if chloroform has been used in the UK as an anaesthetic for people for more than fifty years. Nevertheless, the NAVS continue to assert this in their literature.

2. Looking for mysteries and paradoxes: There are many things which occur that are currently unexplained or unexplainable. This does not imply the failure of science, and it does not always suggest the need for any great investigation. One example is the ability of some strains of rabbit to consume certain alkaloids, apparently with impunity. This is certainly paradoxical in human terms, although it is possible to speculate about why this ability has evolved in rabbits.

For the antivivisectionist this ability of rabbits to eat atropine-containing plant tissue and survive is enough: humans couldn't do it, therefore the rabbit is nothing like a human, therefore animal-based research is useless. The suggestion is made that it is such a large difference, that rabbits, and by extension all animals, are poor experimental models for human beings.

3. Appealing to myths: This characteristic consists of unearthing an historical or biblical myth, then positing a hypothetical explanation for the event, then saying that the myth explains the hypothesis. There is a hint of this from Robert Sharpe:

The oldest and most widely practised form of medicine in the world is herbalism—the use of herbs and plants to treat disease. Like other alternative therapies, herbal medicine is not based on animal experiments, being tailored to the patient's individual requirements. [6]

And this line of thought continues:

To many, conventional medicine, heavily reliant on powerful, often toxic drugs, now seems a narrow approach to health, unable to cope with the diseases of civilisation. All too often modern medicine actually perpetuates disease by ignoring the causes and simply treating the symptoms.

The myth that Sharpe conjures up is that ancient peoples achieved near perfect health through the use of herbal (that is non-animal tested) medicines. The hypothetical explanation is that these medicines were a more natural approach to health-care and so resulted in better health. The false conclusion is that animal-tested modern medicines contribute to disease, or, in other words, testing medicines on animals causes modern illnesses. The truth is, of course, quite different. People in history lived short lives and often died from infections and preventable illnesses or accidents whether treated with herbal medicines or not. People nowadays mostly die from diseases of old age.

4. The misleading use of evidence: Anti-vivisectionists rely on two strategies when they adduce evidence in support of an argument. They like to give lots of examples that support their case, preferring quantity to quality, in the belief that this makes each individual piece of evidence more substantial. By selecting fragments of conflicting evidence from a huge raft of accumulated scientific fact, they hope to bolster their own argument.

An illustration of this is the way they like to quote lots of different examples of differences between animals and people. The idea being that any one small difference is sufficient to cast doubt upon the knowledge gained from the overwhelming similarities between animals and people.

A leaflet entitled *Vivisection in Britain—the Inside Story* by the NAVS states:

The NAVS shows how animals and people are different and how because of these differences, animal experiments are harmful to people as well as animals. [7]

The NAVS also administers the Lord Dowding fund for Humane Research, and the same kinds of claims are made in a leaflet emotively entitled *Progress Without Pain* for that organisation.

All species are psychologically different in body structure function, and indeed there are often differences between individuals within a species [8].

The BUAV claim, in a leaflet called *Right Disease, Wrong Animal, Wrong Answer* that:

The fact is that animal experiments tell us about animals, not about people. [9]

Every one of these leaflets uses the same bits of 'evidence' and makes the same false claims: morphine calms people but excites cats; penicillin kills guinea-pigs; drugs like practolol and benoxapofen were withdrawn from human use after unacceptable side-effects even though they were first proved safe on animals.

All of these claims choose to ignore the truth of the matter which is that humans and animals are very similar in almost every physiological system. They also ignore the fact that many medicines tested on animals are useful for both animals and humans.

The second example of the way antivivisectionists use evidence is their tactic that the more often a claim is made the more likely people are to believe that it is true. The BUAV and the NAVS consistently claim that penicillin is harmful to guinea-pigs despite the fact that this statement can easily be shown to be incorrect [10,11].

5. Untestable beliefs: Much animal rights philosophy is based on a set of beliefs or values that cannot be tested by any scientific method. This kind of thinking is not scientific, and if untestable statements or values are found in a piece of writing that claims to be scientific then this is pseudo-science. The animal rights supporter believes that animals' lives and human lives are of equivalent value; that animals have the same concern about their lives as humans do about human lives.

There is no way to test this idea. We have no way of communicating an abstract idea like 'The value of life' with an animal and there is no evidence to demonstrate that animals have the capacity to understand concepts like this.

This is not to say that human beings should not place a value on the lives of animals. All life is valuable, and the lives and welfare of animals are protected by several acts of parliament in Britain.

6. Argument from false analogy: We often find animal rights supporters arguing along the lines of: 'If we can put a man on the moon, then surely we can do research without using animals. 'The biggest area of medical research from which these false analogies are drawn is with the so-called alternatives to the use of animals.

Sensitive methods of analysing tiny amounts of drugs, toxins, hormones and other substances have advanced rapidly in recent years, opening the door to safer and better human studies.

Instruments which can recognise substances by their molecular structure with techniques such as high-performance liquid chromatography, gas-liquid chromatography and mass spectrometry, are used to detect the distribution of minuscule, safe doses of new drugs in the bloodstream of human volunteers. [12]

The booklet goes on to list all the wonderful things that these analytical and scanning techniques can do. Unhappily the BUAV fail to point out that these machines are not replacing research animals, and that much of what they tell us about the inner workings of patients has been validated only by extensive animal research. The reader is confused with fancy phrases and complex names, and guided to the false conclusion that 'All this technology proves that we don't need to use animals any more.'

7. Explanation by scenario: Science often makes generalisations of the type: if a particular event happened in such a way, then the general laws of science relating to that subject may explain the occurrence. This only makes sense if the known laws of science apply. An interesting attempt at

this technique is contained in the mischievous NAVS document *Biohazard*:

Calf serum and Mason Pfizer Monkey Virus have certainly come together ... the virus [MPMV] was injected into monkeys, and when they died, tissue from them was once again grown in culture with added foetal calf serum. Calf serum might also contain bovine leukaemia virus—some authorities think this might be the virus which recombined with others to give rise to human AIDS. [13]

The suggestion is that viruses can combine with one another, so AIDS must have been created in the laboratory by the combination of bovine leukaemia virus and MPMV. The reference in the above quote to 'authorities' comes from that well-known scientific journal *The Sunday Express*.

If a pseudoscientist chooses to describe a scenario without regard to the known laws of science, the description becomes mere story telling. The example given above is the classic example: a scenario is postulated which does not fit with any known scientific explanation, but it is offered as if it were scientific evidence, and in a 'scientific' style.

8. Misinterpretation of remarks or writing by scientists: Deliberate misinterpretation of statements by researchers (sometimes called exegesis) is a common ploy of antivivisectionists. Researchers are human beings and occasionally they can be discursive about their work like anybody else. This suits the anti-vivisectionists because they can then use these statements, out of context, as evidence for any unconventional idea that they wish to support.

A member of an animal rights organisation recently said:

According to Dr Smyth—a former chairman of the RDS—cancer research is a field of research which has consumed an enormous number of animals without any tangible results

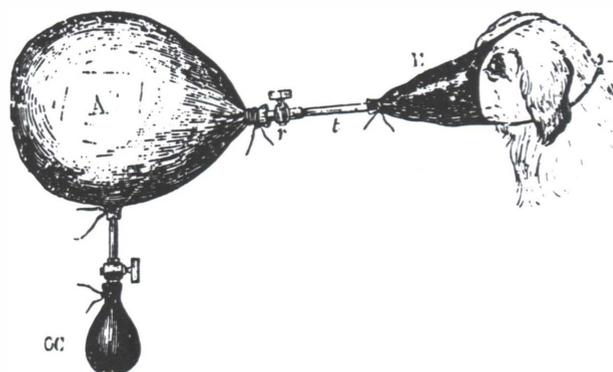
This quote is taken from Smyth's book, and is, admittedly, more or less correct. It is taken wholly out of context, however, as can be seen from the quote when read in its entirety:

If there is one field of research orientated towards this object [alleviating suffering], it is cancer research, and yet it can be argued that this is a field of research which has consumed an enormous number of animals without any very tangible result. Much cancer research has turned out to be useless, not because the intentions were not good, but because the results were not good. The usefulness of all research is only manifest in the results, and this really means that the only reliable way to judge the usefulness of a research programme is by hindsight. [14]

By quoting these words out of context the antivivisectionist attempts to bolster their own arguments by leaning on the words of a highly reputed and eminent scientist.

9. Refusal to revise in the light of criticism: Animal rights activists pride themselves on never being proved wrong, of never admitting mistakes, of never having to revise an opinion. An example of this is the previously mentioned one of penicillin and guinea-pigs. The animal rights movement continues to trumpet this particular piece of nonsense because they 'know' that it is true. The famous quote from Josh Billings seems appropriate here:

The trouble with people is not that they don't know but that they know so much that ain't so.



Mary Evans

In conclusion, we are forced to ask ourselves why antivivisectionists call on pseudoscience to support their arguments. With one or two exceptions antivivisectionists are not scientists and it is fair to assume that many of them are simply ignorant of the overwhelming weight of evidence. In appealing to the public for support it helps to be able to deliver a point of view in a way that makes it sound as though it is based on hard scientific evidence.

Without doubt real science is often difficult to understand and of preparation and study whereas pseudoscience is always easy to understand and provides obvious answers.

The example of argument from false analogy springs to mind here: we can put a man on the moon, it's obvious that we don't need to use animals in research. In reality it's not obvious at all.

Lastly, the antivivisectionists prey on people's fears of technology and the even greater fear of illness and death. The answer is better public education and access to sources of information.

References

1. Gardner M., *Fads and Fallacies in the Name of Science*; Dover, USA: 1952.
2. Gardner M., *Science: Good, Bad and Bogus*; OUP, GB: 1983.
3. Sladek, J., *The New Apocrypha*; Hart-Davis, McGibbon, GB: 1973.
4. Radner, D., Radner, M., *Science and Unreason*; Wadsworth Pubn., USA: 1982.
5. NAVS leaflet, *Animal Experiments: The Facts*. Undated.
6. Sharpe, R., *The Cruel Deception*; Thorsons Ltd, GB: 1988.
7. NAVS leaflet, *Vivisection in Britain—the Inside Story*.
8. The Lord Dowding Fund leaflet, *Progress Without Pain*. LDFI/91.
9. BUAV leaflet, *Right Disease, Wrong Animal, Wrong Answer*. Undated.
10. RDS Newsletter, June 1991, p8.
11. RDS Newsletter, April 1992, p11.
12. BUAV, McIvor S. (ed), *Health With Humanity*; BUAV, 1990.
13. NAVS, Creamer J. (ed), *Biohazard*; NAVS, 1987.
14. Smyth D., *Alternatives to Animal Experiments*; The Scholar Press Ltd, GB: 1978.

Simon Brophy is the Education Manager of the Research Defence Society, 58 Great Marlborough St, London W1V 1DD. This article represents his views and opinions, not necessarily those of the RDS.

Vivisection—The Case Against

Lynn Williamson

Experimenting on animals is an unnecessary evil

WHEN ILL OR INJURED would we consider consulting our local veterinary surgeon? No? Why then are we so prepared to blindly trust veterinary-based research methods? Science is 'knowledge of facts and laws arranged in an orderly system' (*Thorndike Barnhart Dictionary*), the widely-held view of scientific knowledge being that it is reliable because it has been objectively proven (A F Chalmers: *What is this thing called Science?*, 1990). Vivisection is the scientific term for veterinary based research, 'veterinary' being 'of or for (treatment of) diseases and injuries of farm and domestic animals' (*Concise Oxford Dictionary*).

Approximately three million animals are experimented on each year in Great Britain, and over 250 million are used in experiments per year worldwide. Experiments include non-invasive research such as the deprivation of food, water, oxygen and so on, and psychology experiments including the infliction of stress or anxiety. Other research includes surgery, the injection of human diseases in an attempt to create 'animal models', and the force-feeding (such as the LD50 test) of noxious substances such as cosmetics, toiletries, pesticides, and household and industrial products. In 1992, 68% of all animal experiments were body-system studies, for example medical and dental studies, and 56% of all animal experiments were carried out by commercial concerns (the latest Home Office statistics) [1]. The question then is whether vivisection is a form of science? That is, can vivisection predict, control and repeat results and can these results be used in relation to human health and disease? On these grounds vivisection is clearly not a science. There are simply far too many variable factors between different animals and between animals and humans (species difference) which render these animal results invalid. Moreover, reliance on such misleading animal tests can mean serious damage or death for the human victims of vivisection. It is however scientific fact that not only are there huge anatomical differences but there are many subtle physiological differences between animals and people. Regardless of how similar some animals may be to humans, even the smallest difference can mean that the animal experiment is completely useless and simply not scientific.

Taking the case of drugs, species difference occurs in all five stages of action on the body. That is, there are differences in absorption, distribution, mechanism, metabolism and elimination. A small change in any one of these stages can mean major overall effect discrepancies. Take two

examples: firstly, amphetamines are metabolised by the same route in mice and dogs but by a different route in rats and yet another in guinea pigs. Secondly, phenylbutazone has caused many human deaths. This is because it takes longer for phenylbutazone to be broken down in our system, that is, it takes a human 72 hours to break down half a dose, a rhesus monkey 8 hours, dogs and rats 6 hours, and rabbits 3 hours.

It is ridiculous to insist that drugs must be tried out on animals to determine their toxicity levels. Such research simply does nothing to protect humans, in fact it releases drug companies from the onus of responsibility. There are no laws in Great Britain or the European Community requiring drug companies to test their products on animals. Regardless of the number of animal tests carried out, they cannot be used to predict whether a new drug or medical technique will be safe for humans. Some examples of drugs passed as safe in animal tests which went on to damaged humans follow:

DES (stilboestrol), to prevent miscarriages, caused vaginal cancers in the female offspring and genital defects in the 3rd generation.

- Eraldrin, a heart disease drug, caused blindness, joint pains, growths and digestive tract disorders.
- Clioquinol, an anti-diarrhoea drug, caused blindness, paralysis and thousands of deaths.
- Azauracil, a potential anti-cancer drug, caused central nervous system disorders, such as coma, lethargy, mental deterioration, muscle weakness and hallucination.
- Flamil, for rheumatism, caused loss of consciousness.
- Thalidomide, an anti-morning sickness drug, caused birth defects and foetal deaths.
- Phenacetin, a pain killer, caused kidney damage and red blood cell damage.

Such is the seriousness of drug side effects that iatrogenesis (disease caused by medical treatment) is now one of the leading causes of hospitalisation and one of the commonest causes of disease and death.

And, of course, some side effects could never be calculated from animal studies, for example, nausea, headache, dizziness, amnesia, depression and so on. In addition, many

laboratory factors such as who handles the animals, type of housing and bedding, food source and cage cohabitants can lead to major inconsistencies, so that different results are obtained when an experiment is repeated even in the same laboratory.

A result of animal experiments is that progress is held back. Often vivisection means that procedures will be put on hold due to negative animal results—until it is decided to overlook the animal test results. A few examples of this follow:

- Alpha methyl dopa used to lower blood pressure in humans
- Positive pressure ventilation (blowing air into the lungs to keep them inflated during surgery)
- Introduction of blood transfusions (held back over two hundred years)
- Corneal transplants (delayed almost 90 years)
- Coronary by-pass surgery
- Cage-ball valves to replace damaged heart valves.

Because the reactions of different animals and humans are so variable reliance on animal tests can mean that a life saving medication can be ignored and a human killer drug be used.

It is also well-documented that many human diseases do not affect any other species. And when vivisectionists attempt to artificially induce diseases in laboratory animals the resultant conditions are not the same as in the human form. For example, the cancers of humans (mainly sarcomas) are different to those of the most popular lab animal mice (which develop carcinomas). Arthritis, multiple sclerosis, high blood pressure and many other diseases have no equivalent in the animal world. The tuberculosis produced artificially in animals is very different to that which occurs in humans. Animals do not develop AIDS when given the HIV virus; even the chimpanzee, our closest relative, develops a very different disease (Simian AIDS) from the SIV virus. Indeed Retrovir, one of the first drugs developed in the attempt to combat AIDS, halted the progression of SIV to Simian AIDS in primates but actually accelerated the progression of HIV to AIDS in humans.

Animals, then, are not appropriate models for testing drugs for use on humans. When any substance is tested on different species of animals, a mass of contradictory data will result, from this vivisectionists can choose an appropriate statistic to prove their ideas. But the fact is, they cannot make a prediction as to how the human will react to the given substance.

It is possible, for example, to 'prove', depending on the funding body, that cigarettes do or do not cause cancer (for example, in the notorious smoking beagle experiments the animals did not develop cancer). In studies examining the effect of fibre on rats it has been shown that it both reduces and increases the rate of cancer!

Dr Irwin J Bross has explained how the use of animal-based research allows industries to escape the responsibility they should have to the public [2]; animal research

results can be geared to give any desired conclusion, both disguising the real hazardous effects of substances and preventing compensation claims. For example, while epidemiological studies showed that children living around polluted areas in Southern California had less than 80% of their expected lung capacity compared to those in minimal air pollution areas, the S C Edison Company and the Electric Power Institute paid for research using beagle dogs which concluded that the effect of ozone exposure was 'small and not likely to have major health consequences' [3].

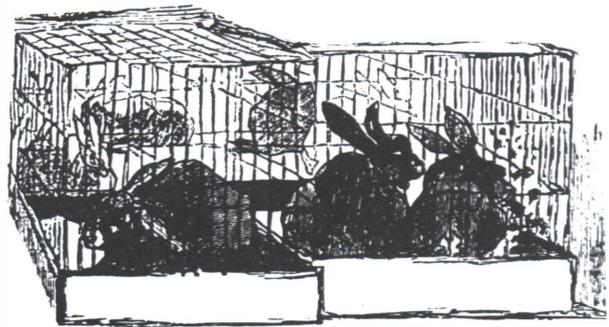
Due to the often severe and deadly effects of drugs on humans, undetectable using animal models, countless drugs are removed from the market each year. Animal testing is a mockery not a science!

It is a common misconception that many useful medical discoveries are the result of vivisection. A study of medical history shows this to be grossly incorrect. Dr. Vernon Coleman states: 'I can't think of a single major breakthrough that was the result of an animal experiment' [4]. Steps forward in medicine, such as the discovery of insulin, penicillin, antibiotics and anaesthetics all owe nothing to animal experiments. Many treatments used by humans were discovered thousands of years ago by folk medicines, for example digitalis (heart drug), quinine (anti-malarial agent), aspirin (pain and fever control) and so on and are now mass marketed in a synthetically changed form by the pharmaceutical industry.

Today, drug companies alter and produce extracts of roots, herbs and weeds as new drugs. And the real advantages to humans of many drugs are discovered clinically, when a treatment prescribed for one ailment alleviates another. For example: Tamoxifen, tested as a contraceptive in rats but which actually stimulates ovulation in women, was found in clinical trials to be useful in fighting breast cancer, although it causes cancer in rats. Mazindol, a diet pill was found to slow the deterioration of muscular dystrophy.

Given that vivisection is not a form of science, as it fails to provide reliable or objectively proven facts, how do we test products and substances for human use and how do we study disease? At present methods are being used which can tell us about human diseases, human reactions and human treatment.

Epidemiology (the study of diseases, their origins and how they spread) has led to the vast majority of discoveries which have helped to save and protect people. Perhaps one of the greatest challenges we face is to address and reverse the present trend of concentrating on disease symptoms and take more seriously the causes of the diseases from which we suffer; then take steps to eliminate these factors. This is



not to say that medical research should stop, of course we must continue to look for treatments and ensure safety, but this could run in conjunction with preventative measures.

Instead of hoping and waiting for magical cures, we could all be taking some responsibility for our own health (and dis-eases) and be working with, rather than against, nature, correcting destructive diets and lifestyles. Take two examples: Heart disease is the biggest killer in the western world (50% of people in Great Britain die of heart disease). Epidemiological studies show the causes of heart disease to be high fat consumption, obesity, smoking, alcohol and high blood pressure (factors which cannot be produced in laboratory animals) but little is done to educate people about their lifestyles and the risks they take. Cancer is the second biggest killer in the western world. The World Health Organisation estimates that 80% of cancer is environmentally related and preventable. From studying people we know that carcinogens include smoking, occupation related hazardous chemicals, some food, alcohol and environmental pollutants. Again few resources are put towards public education and prevention.

Clinical work is another essential element for improved human health and safety. For a disease or injury to be effectively studied doctors must, and do, study those people who have spontaneously contracted the disease or been injured (war and accident victims). Their responses to therapy and treatment are compiled and clinical trials and autopsies and the like are studied.

In vitro methods of testing, that is cell, tissue and organ cultures, can provide invaluable information. Taking human cells or organ tissue (from a part of the body, for example heart, kidney, brain, nervous system or skin) and growing these in culture means drugs and other chemicals can be speedily and accurately tested. Human trials following such *in vitro* work mean that people suffering from diseases are given scientifically valid information about the potential risks and benefits involved in taking the medication. This is surely a major step forward from the use of a completely different species which is more likely than not to give totally misleading pre-human trial information. As an example, a test bed of human muscle tissue cells which can be used to reliably test anti-cancer drugs has been produced by America's Food and Drug Administration.

Computer technology is also adding to the knowledge we have of the human system in many fields. For example, at the Los Alamos lab in America a computer program has been designed to duplicate the complex physiological systems of the human body [5]. This programme means that incredibly accurate predictions can be made and that doctors can learn about diseases and their treatments.

To add insult to injury the atrocities of vivisection are paid for by us. The Government uses our taxes to fund vivisection. Many large companies such as Smith Kline Beecham and Johnson and Johnson have their own vivisection laboratories or fund commercial animal experimentation laboratories [6-7]. Also a large proportion of charities use our public donations to fund veterinary-based research, e.g. Imperial Cancer Research Fund, British Heart Foundation and Multiple Sclerosis Society (although many now

have policies against this practice).

Vivisection is big business and vivisectors have a vested interest in perpetuating this cruel practice. Money is made through breeding animals, producing cages and laboratory equipment and of course working as vivisectors. Animal experiments are permitted by outdated laws and are part of a legal protection scheme for companies (a defence against product liability suits). Veterinary research is used to give the public a misleading sense of security about the safety of products - not to ensure that the products are safe.

Thirty years ago only a small minority strongly opposed veterinary based research. Today, there are many public and professional groups against vivisection; these include Nurses Against Vivisection and Doctors in Britain against Animal Experiments. In a recent survey by the European Medical Journal 88% of doctors agreed that animal experiments can be misleading because of anatomical and physiological differences between animals and humans [8]. Vivisection has become a highly debated topic in our educational establishments and some universities have policies which cater for students who refuse to perform vivisection. There are now 66 MPs and 7 MEPs who are opposed to all animal experiments. Many companies are being forced to produce 'cruelty free' products due to public pressure. In short, growing awareness of the futility of vivisection is creating real change.

As vivisection has tended to be put forward as a science those who oppose this carnage have been frequently portrayed as anti-science. Because the pro-vivisection lobby cry 'Your baby or your dog', anti-vivisectionists have been accused of being anti-human. But the reality of the situation is now coming to light. The question of choice is not between a dog or child—his is a false proposition put forward to play on the fears of the public. A child will not be helped by any number of veterinary based experiments but by real human-based science methods. The choice is not between an animal and a child but between vivisection and science.

The time has come to realise that we are dumping our problems on animals in an attempt to escape the responsibility for our own health and environment. We do not need to tolerate the nonsense of veterinary based research. As consumers we have the right, the power and the responsibility to change the status quo.

References

- [1] *Statistics of Scientific procedures in Living Animals*. HMSO 2356 (1992).
- [2] Irwin D Bross, *How Animal Research Can Kill You*, European Medical Journal 13 (1994).
- [3] *Vivisection: Science or Science Fiction*, Prism Investigative Committee for Consumer Health (1990).
- [4] Vernon Coleman, *Betrayal of Trust* (1994).
- [5] Vernon Coleman, Plan 2000 Booklet (1993).
- [6] *Vivisection in Britain*, NAVS (1991).
- [7] *The Better World Investment Guide*, CEP (1991).
- [8] Vernon Coleman, Plan 2000, Newsletter #1 (1993).

Lynn Williamson works for UNCAGED, 14 Ridgeway Road, Sheffield, S12 2SS.

Water, Water Everywhere

Russell Dear

The pseudoscience of the 'water cure'

A PART FROM THE OBVIOUS, what do Tennyson, Carlyle, Macaulay, Dickens, and Darwin all have in common? Well, they all enjoyed a glass of water, or to put it another way, they all partook of 'water cures' at some time during their illustrious lives. 'What's a water cure?' you may ask. Ah well....

In 1797 the Scottish physician and surgeon, James Currier, wrote a book called *The Effects of Water, Cold and Warm, as a Remedy in Fever and Other Diseases*. It was one of the first on the subject, although earlier physicians had been recommending baths of varying temperatures as efficacious for all manner of complaints, as well as a therapeutic tool to combat illness. The 'Father of Medicine', Hippocrates, used water to reduce fevers, and later the Roman physicians Galen and Celsus recommended particular types of baths as an integral part of their remedies.

In the early nineteenth century, a Polish farmer called Vincent Preissnitz laid the foundations of modern water therapy, or hydropony as it is also called. As an accident-prone youngster he found folk remedies involving water—cold compresses and the like—helpful in relieving pain, and he extrapolated from there. He experimented on local villagers, developing new techniques with immersions, compresses, and douches. His apparent success gave rise to a reputation as a performer of miracle cures and attracted sick people from all parts of the country, so much so that his small village of Grafenberg became a miniature Lourdes. His techniques offended physicians of the time. They considered him a crank and took him to court. However, they lost their case and under the protection of the crown Preissnitz ran a successful clinic attracting visitors from all over Europe.

Although Preissnitz was a success in his lifetime, it was the Bavarian Sebastian Kneipp who popularised hydropony. Preissnitz didn't write down his procedures but others like Kneipp and the Englishman Erasmus Wilson did. Kneipp, as a frail young man, was impressed with Preissnitz's techniques. He claimed to have cured his own recurrent health problems by inaugurating a regime of plunging into an ice-cold mountain stream each morning. He expanded Preissnitz's ideas and developed techniques such as the double compress and the cold water walk. He originated the 'wet nightshirt' as a cure for children's ailments, combining hydropony with his ideas about herbal remedies. Indeed, the nightshirt dipped in herbal solutions such as



hayflower water, pine extract, and marigold petals became the mainstay of his treatment for childhood disorders. Under Kneipp's influence the pseudoscience of hydropony soon spread throughout Europe and the world.

Hydropony seems to rely on the prevalence of water as its *raison d'être*. Like oxygen, which has itself spawned a range of holistic health remedies, the fact that water is an obvious necessity of life leads it to be thought of as a cure-all. Tie that in with the twin ideas of the sea as our ancestral home and the human foetus nurtured in amniotic fluid and you have a potent, almost mystical, motivation for thinking of water as the fount of all health. The basic beliefs of hydropony are that cold water is restorative and re-energising, and helps build resistance to disease, while warm water is sedating and useful to reduce inflammation and pain.

Like many pseudosciences, hydropony relies on jargon and often argues by spurious analogy. It uses poorly-defined terms such as 'energy-flow' and 'toxins'; Some examples: 'In restoring the energy flow water helps the body heal itself'; 'Water rids the body of accumulated toxins that may be the start of disease'.

Bold statements are made with authority but little explanation, such as: 'One of the reasons water is so effective in natural healing is that it stimulates the body by producing an *action* which in turn produces a *reaction*', 'Wearing a cold, double wet stocking decongests the head

or chest during a cold' or 'An ice bag placed between the thighs reduces pelvic congestion'.

Any explanation of the mechanism involved in producing an effect is dubious at best: 'Cold water acts on the skin to stimulate nerve impulses that travel to nearby organs and hence round the body...'

Hydropathic techniques are varied. They include the cold mitten massage claimed to be effective against gout, tennis elbow, and sciatica; walking in cold water or on cold wet grass, which is said to be good for cold feet, insomnia, nervousness, and bronchial conditions; and cold double compresses good for nervousness, fever and effective as a tonic. Sebastian Kneipp invented the double compress, which consists of a wet cloth completely covered by a dry one—not dry for long surely! It is said to stimulate the circulation.

Poor Charles Darwin was troubled by ill health through much of his life. There was the suggestion that he picked up a disease while on his voyage around the world in *HMS Beagle* but this has not been substantiated. Some biographers think his problems were psychosomatic in origin. Whatever the reason there is no doubt that recurring severe indigestion and flatulence caused him much agony. He also had more than his share of colds, and the occasional irruption of boils. Perhaps the most inhibiting symptom of his illness was the acute depression from which he periodically suffered and the lack of energy that often went with it.

After trying a variety of treatments Darwin eventually decided to investigate the efficacy of hydropathy. In 1849 he took his family, servants, and a good share of his possessions to Malvern, the site of an old spa where Doctors Gully and Wilson had set up a fashionable hydropathic clinic. James Wilson had helped found the establishment after seeing others in Europe, but James Gully actually ran it. It took over 100 patients each summer and most stayed for a six-week course of treatment. Darwin found the regimen hard-going. His average day began at 6.45 am with a violent rub-down in a cold bath for two or three minutes, followed by a 20-minute walk. He wrote: 'I have a washerman, a very nice person, and he scrubs behind, while I scrub in front'.

During the day, apart from two hours after midday lunch, he wore a cold double compress on his stomach, 'regularly refreshed'. After lunch he had a cold feet-bath for ten minutes, then a walk and an hour's sleep. At 5 o'clock the feet-bath and walk were repeated. Occasionally the routine was interrupted with a hot-and-cold treatment—one and a half hours wrapped in a blanket, his feet on a hot water bottle while his upper body was rubbed with a wet dripping sheet.

Darwin lasted longer than most, and after sixteen weeks pronounced himself cured and went home. His symptoms stayed with him for the rest of his life, however, and he continued the water treatment with varying degrees of enthusiasm at home. In his garden he had built a wash-house where he soaked in cold water every morning and was then vigorously towel-rubbed by his butler. He indulged in regular sweating sessions with heat lamps and blankets, and experimented with other cures such as 'elec-

tric chains' and ionized water. Darwin kept it up for almost three years. It helped him cope with his symptoms, except when he was feeling really depressed.

Today hydropathy still has its adherents, mostly in the United States, but is far less popular than it once was. Cold compresses for sprains, warm showers for the removal of dirt, and water to cure a thirst are perhaps the only vestiges of this once popular health treatment—for most of us anyway.

Bibliography

1. Peter Brent, *Charles Darwin* (Hamlyn, 1983).
2. Dian Dincin Buchman, *The Complete Book of Water Therapy* (E.P. Dutton, 1979).
3. Adrian Desmond and James Moore, *Darwin* (Michael Joseph, 1991).

Russell Dear lives in Invercargill, New Zealand, where he teaches and writes about mathematics.



The Sixth European Skeptics Conference

Call for contributions

The Sixth European Skeptics Conference will be held in Belgium, in the seaside resort Ostend, 23-25 September 1994. The event will be hosted by SKEPP, the Belgian skeptical organisation.

The main theme of the conference will be 'Science, Pseudoscience and Environment'. Suggestions for subjects include: earthrays, pyramid forces, electrosmog, but also more generally the influence of occultism and pseudoscience on the environmental movement. Several aspects of the New Age come to mind: the so-called bio-architecture, environmental alarmism, and resonance therapy for forests.

Contact address: SKEPP, Academisch Centrum Huisartgeneeskunde, Laabeeklaan 103, B-1090 Brussels, Belgium, tel 00-31-2-477.78.18, fax 000-31-(0)2-477.43.01, email wsadjw@wrc.tue.nl

Saint George and the Whale

Sergio Della Salla

Remarkable proof of the reality of dragons

Very like a whale

— Shakespeare, *Hamlet*, Act 3, Scene 2

BERGAMO is a lovely, wealthy, and bigoted city in the north of Italy. It is a city of contrasts. Its inhabitants are so prudish that they cannot bear to look at things with their naked eyes. In its neighbourhood there are several churches and monasteries in which true dragons' bones are exhibited (see Figure 1) to remind future generations of the holy victories of saints over these, and other, ferocious and horrific monsters. Of course there are many other similar relics scattered around Italy; for a comprehensive review see [1].

Unfortunately, some doomed skeptic nihilists—people without hope—insist that these, and other relics [2,3], from the many examples of Saint George's arms [4] to St Vitus' guitar, are false. Indeed, they go as far as to say that these are simply the costal bones of *whales*, used to fool the foolish [Ramaccini and Rossetti, personal communication; see also 5]. This article deals with the refutation of such absurd denials of the obvious—the obvious being that the bones are certainly those of dragons. To endorse this hypothesis I shall, like many of the skeptics, provide logical reasoning, cogent arguments, and experimental data.

Dragons did and still do exist

Anecdotal evidence for the existence of dragons is overwhelming [6,7]. But, strangely enough, skeptics maintain that the onus is on the person making the assertion, and that before posing a supernatural explanation one must first rule out all possible natural causes [8]. This is despite of the fact that influential authorities, such as the International Society of Cryptozoology, have confirmed the veracity of these facts. The skeptics call themselves 'rational', but as a matter of fact, it is commonly agreed that to 'rationalise' simply means 'to behave arbitrarily but in accordance with some arbitrary system' [9]. These wiseacre, sciolist and pompous skeptical 'thinkers' strongly and dogmatically believe that to 'believe' is irrational. They pretend to use evidence skilfully and impartially (see, for example [8]), ignoring the fact that even scientists often know next to nothing about fields outside

their own [10]. Therefore, if we have to discuss dragons let us hear what experts on dragons have to say. As an example (one of the many) it would suffice to recall that David Attenborough reported in his book *Zoo Quest for a Dragon* that he spotted in far east islands of Indonesia, enormous ferocious lizard-shaped dragons with monstrous claws, fearsome teeth and fiery reddish (fire!) tongues (for a thoughtful discussion see [11]). The scientific explanation is that dragons chew phosphine-bearing rocks, thus producing an internal gas which ignites on contact with oxygen [12,13]. I have also seen these creatures (see Figure 2)

Thus, even the most ingrained skeptic will allow that since *natura non fecit saltus* ('nature does not make leaps', Linneo, *Philosophia botanica*, Chapter XXVII) and *omne vivum ex ovo* ('every living thing comes from an egg', Harvey G., *Exercitationes de generatione animalium*) these

animals should have some mediaeval ancestors.

The bones cannot be whale-bones

The skeptics [Rossetti and Ramaccini, personal communication] went to a natural history museum, and took a few pictures of big whales' costal bones. Since, admittedly, these show *prima facie* some resemblance to the relics, the skeptics infer that as they

are similar (even remarkably so, to the point of being practically indistinguishable) the bones must belong to the same animal. Dear me! Even a skeptic should know that all that glitters is not gold.

It is not hard to argue against this counter-intuitive and specious point. A generally-held belief is that in a fight the winner takes the mortal remains of the defeated, and rarely does the opposite occur. The data gleaned from the literature (see Table 1) clearly show that when men fought dragons they won, while they were less successful in their struggles against whales.

This difference is statistically significant (Chi squared: 20.30, DF = 1, $p < .001$). Moreover, from Figure 1 it is clear that the bone cannot be a whale's costal bone since in the whale's skeleton, unlike all other creatures, including drag-



Figure 1: The dragon's costal bone hanging from the ceiling of St George's Church of Almenno San Salvatore, Bergamo

Man/dragon victories

- Apollo against Python
- Attilius Regolus
- Cadmus
- Eracles against Ladon
- Giason
- Indra against Vritra (Hindu)
- King Lludd (Celtic)
- Marduk against Tiamat (Babylonian)
- Minurta against Asag (Sumerian)
- Monkey [14]
- Saint Michael
- Seth against Apophis (Egyptian)
- Sigfrid against Fanfir
- St. George [15] against Stihjia
- Tesup against Ilujankas (Hittite)
- The Young [16]
- Umberto Visconti [17]
- Verethraghana against Keresapa (Persian)

Man/dragon defeats

- Beowulf (German)

Man/whale victories

- None found

Man/whale defeats

- Ahab
- Commodore Preble (see Melville)
- Jonah
- 'Ndrja Cambria (Horcynus Orca, D'Arrigo)
- Pinocchio
- Ruggero (see Aristo, Orlando Furioso, canto X)

Table 1: Instances of man's victories and defeats in combats against dragons and whales.

ons, the costal bones are connected to the Transverse Process and not to the body of the vertebrae (see any encyclopedia). There is no trace of this characteristic site of articulation in the the dragon bone.

The bones are dragons' bones

The curvature of the bone (see Figure 1) demonstrates that it belonged to a creature that could sit up, as can a dragon, which is a reptile, but this feat is somewhat difficult for a cetacean.

Furthermore, dragons do not drag their bodies along the ground [18], but rather, as is accepted knowledge [19, 20, 21], they can fly. It is for this reason that the bone is on the ceiling of the church and not in the holy water font (Alan's Law).

If the above arguments do not suffice to persuade skeptical readers, they should perhaps consider that the geographical area where the dragon bones are exposed was a notorious dragons' habitat [1]. In any case, whales tend to be few and far between on the plain. Conversely it is uncommon to encounter dragons' bones in churches located in areas (such the Arctic or the Northern Pacific Oceans) where whales are a common sight!

Experimental evidence

Osteocalcin, a protein strongly bound to bone minerals, is preserved in fossils [22] and has proved to be characteristic of large reptiles such as dinosaurs but not of animals living in water [23]. It has not been possible to obtain direct evidence, for instance by means of reversed-phase liquid chromatography, of the presence of osteocalcin in the bone hanging from the church ceiling. (as is the case for most relics, it was not possible to obtain samples for analysis). Nevertheless, from indirect evidence, see Figure 1, it is quite clear that the bone is characterized by its presence.

Furthermore, we analysed quantities of dust from the floor below the bone. We found, among other substances, a

small quantity of boron (of the type used by old pious spinsters to powder themselves) whose presence can only be explained by an imperceptible crumbling of the bone. In fact the presence of boron and calcium points to a strong endoskeleton which allows the dragon to stand comfortably upright. How would the skeptics explain this for a whale?

Future directions

DNA sequences have been recovered from fossils [24, 25]. We will take advantage of the recent advances enabling the determination of the protein sequences from dinosaur bones [23] by means of the polymerase chain reaction technique [26] to study the dragon bones.

The idea of cloning a dragon using its DNA is therefore now more than just a whim [27], as proven by Ping's impressive technique of genetic manipulation [12] in producing five-digit claw dragon embryos.

Conclusions

Quae seu vera seu falsa sunt, Druidi draconem maxime timent et venerantur ('whether any of this be true, the Druids both fear and respect the dragon') [28] and this is mainly because they, as well as we, simply need to believe [29].

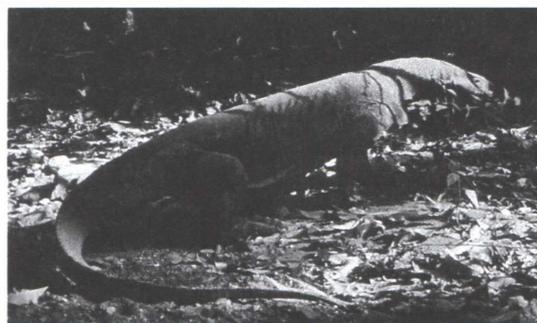


Figure 2: Dragon spotted by the author on the island of Komodo, East Indonesia

Acknowledgements

Unfortunately, the study was not supported by any grant. I wish to thank my skeptical friends Franco and Laura, who addressed the phenomenon, interpreted it and did not want to sign the paper, heartily discouraging me to put it in print. Special thanks go to my friend and teacher Hans, who taught me not to seek power at the price of liberty (F. Bacon, *Essays*, XI: 'Of great place'), so destroying my career. I would also like to thank my father, who purchased the encyclopedias used for this study, and my mother, who innocently served 'dragon's eyes' for Christmas Eve dinner. Furthermore, I am grateful to Ms G Jarvis who allowed my anglophilia to manifest itself in words, to Antonio who provided fairy tale books, to my friend Grasdor for not kicking me too often under the table whilst I was interviewing the parish priest, and last but not least to the anonymous (I am tracing them, though) referees, for their sterile, but nonetheless, very welcome comments ('we are afraid we can't publish it, but we could shred it for you') [30] on a previous, almost identical, version of the paper.

References

1. Cordier, U. (1986) *Guida ai Draghi e Mostri in Italia*. Milano: Sugarco Edizioni.
2. Calvin, J. (1543) *Traite des reliques*. Geneve.
3. Garlaschelli, L., Ramaccini, F. and Della Sala, S. (1991) Working bloody miracles. *Nature*, 353: 507.
4. Bentley, J. (1985) *Restless Bones: The Story of Relics*. Constable: London.
5. Satolli, R. (1993) Le Balene di Castell'Arquato. *Alisei*, 4, p. 137.
6. Corliss, W.R. (1976) *Strange Life*. The Sourcebook Project: Glen Arm.
7. Bergier, J. (1977) *Il libro dell'Inesplicabile*. Edizioni Mediterranee: Roma
8. Baker, R.A. and Nickell, J. (1992) *Missing Pieces*. New York: Prometheus Books.
9. Storr, G. (1982) The fairly concise New Scientist Dictionary. *New Scientist*, 23/30 December 1982.
10. Pool, R. (1991) Science Literacy: The Enemy is Us. *Science* 251: 266–267.
11. Cumming, J., Fortsyth, S., Noble, J., Samagalski, A., Wheeler, T. (1990) *Indonesia. A Travel Survival Kit*. Victoria: Lonely Planet Publications.
12. Nye, J.L. and McCaffrey A., (1989) *The Dragonlover's Guide to Pern*. New York: Del Rey Book.
13. Nye J. L. (1988) *Dragonfire*. Tor Books: New York.
14. Wu Ch'eng-en (XIV cent.) *Monkey*. Trad. A.Waley 1942. George Allen and Unwin: London.
15. Budge W. (1888) *The Martyrdom and Miracles of St. George*. London.
16. Asbjornsen C. and Moe J. (1842–1866) Norwegian Fairy Tales. Italian translation 'Il giovane che si trasforma in leone, in falco e in formica'. Kodansha-Mondadori, 1983
17. Maragnani, L. and Fava, F. (1990) *Leggende e Storie Milanesi*. Milano: Libreria Milanese.
18. Howgate, M. (1992) What makes a dinosaur? In S. White (Ed.) *Dinosaurs, a celebration. Terrible claws and tyrants*. Marvel Comix: New York, pp. 6–7.
19. Abel O. (1923) *Die vorweltlichen Tiere in Maerchen, Sage und Aberglaube*. Karlsruhe.
20. McCaffrey A. (1968) *Dragonflight*. New York: Del Rey Books.
21. Boraes J.L. (1978) *El libro de los Seres Imaginarios*. Buenos Aires: Emece Editores.
22. Ajie, H.O., Hauschka, P.V., Kaplan, I.R. and Sobel, H. (1991) Comparison of bone collagen and osteocalcin for determination of radiocarbon ages and paleodietary reconstruction. *Earth and Planetary Science Letters*, 107: 380–388.
23. Muey, G., Sandberg, P., Knapen, M.H.J., Vermeer, C., Collins, M; and Westbroek, P. Preservation of the bone protein osteocalcin in dinosaurs. *Geology*, 20:871–874.
24. Paabo, S., Higuchi, R.G. and Wilson, A.C. (1989) Ancient DNA and the polymerase chain reaction: The emerging field of molecular archaeology. *Journal of Biological Chemistry*, 264: 9709–9712.
25. Golenberg, E.M., Gianassi, D.E., Clegg, M.T., Smiley, C.J., Durbin, M., Henderson, D. and Zurawski, G. (1990) Chloroplast DNA sequences from a Miocene Magnolia species. *Nature*, 344: 656–658.
26. Saiki, R.K., Gelfand, D.H., Stoffel, S., Scarf, S.J., Higuchi, R., Horn, G.T., Mullis, K.B. and Erlich, H.A. (1988) Primer-directed enzymatic amplification of DNA with a thermostable DNA polymerase. *Science*, 239: 487–491.
27. Crichton, M. (1990) *Jurassic Park*. Ballantine Books: New York.
28. Woodruff, U. *The Expedition Journal of Pliny the Elder*. *Inventorium Natura*, 1979, p.115.
29. Gazzaniga, M. (1985) *The Social Brain*. Basic books: New York.
30. Donegan (1984) *Punch*, July 4, p. 63

Sergio Della Salla is a Professor of Psychology at the University of Aberdeen, and a member of CICAP, the Italian Committee for the Investigation of Claims of the Paranormal.

London Student Skeptics (LSS)

Unfortunately, due to administrative problems many members were not informed of the meetings for 1994. However, the LSS is still operating and meetings should resume as normal in October 1994, on alternate Monday evenings in the ULU building in Malet Street.

Members who have been to the last couple of meetings will be notified of next term's activities in due course. Anyone else who would like to be kept informed, whether a member or not, should contact Bill Harman (see 'Skeptical Contacts', page 15).

Please also get in touch if you would like to help man the LSS stand at the 1994–5 Freshers' Fair in early October.

The Saucer Error

Martin Kottmeyer

The myth of the flying 'saucer'



UFOLOGISTS FROM TIME TO TIME express the sentiment that UFOs just can't be a myth. Look at them. That shape. How do you explain where it came from. Space travel was supposed to involve rockets, not these disc-shaped marvels. The whole phenomenon is just so, well, alien from what you'd expect.

J Allen Hynek, one of the leading ufologists of his time, put it this way: Why flying saucers? Why not flying cubes or flying pyramids, or for that matter, why not flying pink elephants or even flying buildings, reported from a hundred different countries? Indeed if UFO reports were entirely the result of excited imaginations, why not hundreds, possibly thousands, of totally and radically different types of reports as people of different cultures let their locally conditioned imaginations loose? (*Hynek UFO Report*, Dell, 1977, p. 28)

John Prytz, who has defended the extraterrestrial hypothesis against psychosocial interpretations of the UFO phenomenon in a fascinating series of articles, devoted a whole article ('UFO Genesis' *MUFON UFO Journal*, September 1982, pp. 10-14) to exploring this conundrum. There weren't any 'sci-fi films' playing in 1947 and the serials before that date, *The Purple Monster Strikes* and *Flash Gordon*, only involved rockets. He checked the newspapers of the period and couldn't find anything in the cultural environment which could have stimulated the saucer phenomenon. The period was boring. He concluded, 'The timing of the genesis of the modern UFO phenomenon, which cannot be logically accounted for, is yet another forceful argument for the external nature of, and external intelligence behind, the UFO, and yet another nail in the coffin of the pro-internal-intelligence advocates.'

UFO historian David Jacobs has echoed Prytz in his paper, 'The New Era of UFO Research' (*Pursuit*, #78, 1987) and more recently in *Secret Life* and asserted there was no precedent for the saucer configuration in popular science fiction films, popular science fiction, or popular culture in general. The objects seemed 'well beyond that produced by the technology of 1947 and it became immediately apparent that the witnesses were seeing something that could be entirely unique.'

There is a trivial sense in which Prytz and Jacobs are simply wrong. Disc-shaped spacecraft have a number of precedents in popular culture. They appear in the well-known and widely distributed *Buck Rogers* comic strip as early as 1930. *Flash Gordon* was battling a squadron of deadly 'space-gyros' in 1934 in his strip. Even better, they can be seen dangling around, thanks to the gloriously crude

special effects of 1938 Hollywood, in the *Flash Gordon* movie serial, 'Rocketship' based on that strip. Science fiction illustrator Frank R Paul repeatedly used disc-shaped space vehicles in his art for the early pulps. Others followed his example. I regard these as trivial however because I accept them as coincidences inevitable in a large body of artistic creativity. Artists utilized every geometric form they could think of and when imagination failed them they preferred to fall back on the convention of the rocket. If the images of science fiction were the determinant of what people should have been imagining in 1947 we should have had a wave of ghost rockets, not flying saucers. So what was the determinant?

Oddly enough, we got flying saucers because of a journalist's error. 1947 was an exciting time in aviation history. New advances and innovations were turning up regularly and speed records were being broken as pilots aimed to break the sound barrier. Chuck Yeager would win that prize on October 14, 1947. Four months earlier, on June 24, 1947, Kenneth Arnold surprised the world by reporting nine objects flying by Mount Ranier at the incredible speed of 1,200 miles per hour. It was an incredible mystery and was such a sensation that it made front page news across the nation. Soon everyone was looking for these new aircraft which according to the papers were saucer-like in shape. Within weeks hundreds of reports of these flying saucers were made across the nation. While people presumably thought they were seeing the same things that Kenneth



Mary Evans

Arnold saw, there was a major irony that nobody at the time realized.

Kenneth Arnold hadn't reported seeing flying saucers. In a memoir of the incident for the First International UFO Congress in 1977 Arnold revealed the flying saucer label arose because of a 'great deal of misunderstanding' on the part of the reporter who wrote the story up for the United Press. Bill Bequette asked him how the objects flew and Arnold answered that, 'Well, they flew erratic, like a saucer if you skip it across the water.' The intent of the metaphor was to describe the motion of the objects not their shape. Arnold stated the objects 'were not circular.' A look at the drawing he did for his report to the Air Force shortly after the incident confirms the truth of that statement. It is hard to describe in a word or two; beetle-shaped is the best I can come up with. However you describe it, one thing is clear. It is not the elegant alien geometric perfection we have come to know and mystify ourselves over.

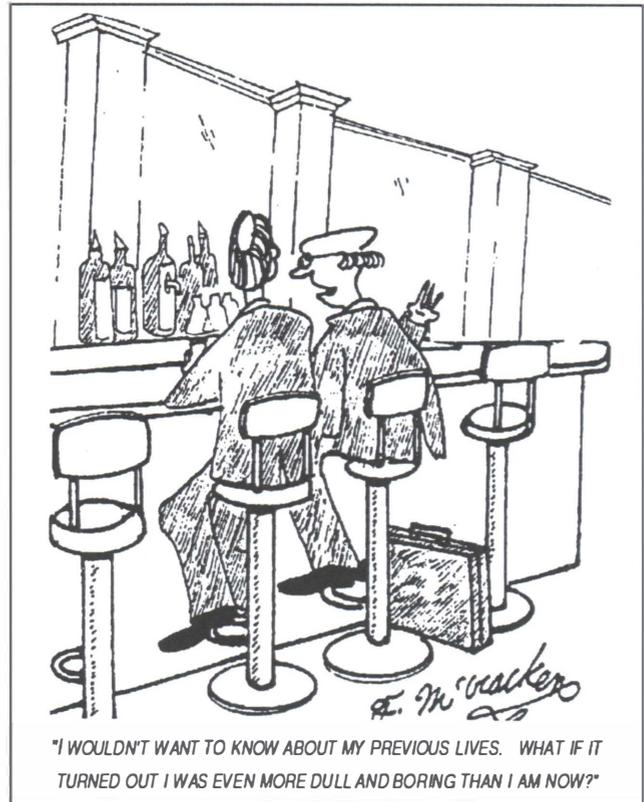
We can from these facts derive the answers to Hynek's questions. The reason excited imaginations didn't come up with hundreds of radically different variations is that they were constrained by Bequette's description of the objects. The phrase 'flying saucers' provided the mould which shaped the UFO myth at its beginning. As time progressed people would draw them, looking as they sound like they look. They in turn shaped hoax photos and the imagery of films like *The Flying Saucer* and *The Day the Earth Stood Still* and dozens of alien invasion films and TV shows in the decades that followed. It remains the stereotype to the present day. By one tally 82% of the craft descriptions in alien abduction reports fall into the flying saucer category. It can be found in nearly all the well-known cases: Betty & Barney Hill's interrupted journey, Herb Schirmer, Travis Walton, the Andreasson affair, Whitley Strieber.

Prytz's and Jacobs' arguments miss the mark because one doesn't need to look beyond Bequette's error to understand the unambiguously cultural genesis of the saucer mystery. Arnold's report was itself the source of excitement in the otherwise almost boring period of 1947. The speed of the objects caught everyone's attention and guaranteed that the whole world would add the phrase 'flying saucers' to their vocabulary within a matter of days. Science fiction had nothing to do with this; the interest in fast planes was the determinant.

Bequette's error may not prove to be the ultimate refutation of the extraterrestrial theory for everyone. But it does leave their advocates in one helluva paradox: Why would extraterrestrials redesign their craft to conform to Bequette's mistake?

Martin Kottmeyer regularly writes articles on 'alien abductions' for skeptical groups in the USA and UK, and lives in Carlyle, Illinois.

This article originally appeared in The REALL News, the official newsletter of the Rational Examination Association of Lincoln Land (May, 1993), and is reprinted with kind permission.



"I WOULDN'T WANT TO KNOW ABOUT MY PREVIOUS LIVES. WHAT IF IT TURNED OUT I WAS EVEN MORE DULL AND BORING THAN I AM NOW?"

SKEPTICAL CONTACTS

U.K. Skeptics

Committee: Susan Blackmore, Steve Donnelly, Wendy Grossman, Ian Rowland, Chris Nash, Mike Howgate, Richard Mather, Michael Hutchinson.
10 Crescent View, Loughton, Essex, IG10 4PZ.

London Student Skeptics

Convenor: Bill Harman
21 Manville Road
London, SW17 8JW.

Wessex Skeptics

Secretary: Martin Hempstead
Optoelectronics Research Centre
Southampton University, Highfield
Southampton, SO9 5NH.

Electronic Mail

For information on skeptical information by E-mail or for subscription, back issues, or other magazine enquiries please contact:

Toby Howard: toby@cs.man.ac.uk

The Skeptic now also has World Wide Web pages, at:
<http://www.cs.man.ac.uk/aig/staff/toby/skeptic.html>

Psychic Diary

Toby Howard

The inside story of a strange cult

READERS OF THE SKEPTIC will, I'm sure, be familiar with the phenomenon of the cult. Whether or not to label a particular congregation of people a cult is a matter largely dependent on your outlook, analogous to the sometimes arbitrary choice between 'terrorist' and 'freedom fighter'. Although cults are almost always skeptically viewed as evil by everyone except their members, this need not necessarily be the case.

For many years one cult has permeated the very fabric of our society, and affects many families. Its members practice their rituals in public places with religious fervour. Traditionally, they have scribbled with pencils in notebooks, but today we see the hi-tech trappings of dictaphone, video camera, and the laptop computer. This group of individuals has a hierarchy of members, often a highly-respected 'leader' figure, a secret jargon, and a shared set of values. I speak with confidence because I am going public with the confession that I am an ex-member of this cult. Dear readers, I used to be a trainspotter.

Now that I am 'out', allow me to lay to rest once and for all the calumny that trainspotters are invariably spindly-legged geeks with ill-fitting spectacles and anoraks. This is pure spotterism. I, for one, certainly never wore an anorak.

The vast majority of spotters are interested solely in the registration numbers of diesel and electric locomotives, but some expand their horizons to include multiple-units and passenger carriages. Others specialise in tracking the movements of the red and yellow permanent-way maintenance machines, alien craft from the same planet as those incomprehensible vehicles which scurry across the

tarmac at airports, and which appear to have been built with the plans upside down. Yet others wish to take the number of every single goods wagon in the country. And some actually manage it.

There are several strata in the complex social structure of the trainspotter cult. At the apex are those who have not only spotted every number possible, but they have done so several times over. Such people are addressed in hushed tones. They are the Zen masters of the art, dispensing sage words to those inquiring the type of engine expected to haul the 1755 Football Special from Dundee. Lower in the hierarchy are the souls whose enlightenment hinges on locating just one or two elusive numbers, and so on. But there is no ultimate goal. If you have all the numbers, you just start again.

A cursory glance at the eager hordes at the end of the longest platform at any large main-line station reveals that spotters are almost exclusively male. Why? I have heard it suggested that the psychological motivation for trainspotting derives from the deep urge of mankind to be a hunter-gatherer. Perhaps, but what a comedown from arriving back at the hut with two bison pelts and a bag of berries.

As with cults in general, there is more to trainspotting than this simple explanation. Despite their grime, delays, noise, smells, cancellations, strikes, tattiness, unreliability, ugliness, tedium, poor catering, high cost and general unpleasantness, railways are romantic. And this is perhaps the greatest mystery of all.

Toby Howard is a lecturer in computer graphics at the University of Manchester.



Skeptic at Large

Wendy M Grossman

A skeptical voice in a new novel

A NUMBER OF FAY WELDON'S NOVELS have hovered on the edge of science fiction. There was *The Lives of a She-Devil*, in which a woman slowly reconstructed her body and then her life to match those of her husband's mistress. In *The Cloning of Joanna May*, another beleaguered wife was cloned, so that when she was in middle age she had four young clones. Now Weldon has wandered into the realm of skepticism with her latest book, *Affliction*, in which a wife of ten years finds her husband mysteriously becoming hostile and peppering his speech and habits with unfamiliarities.

Amanda, the wife in *Affliction*, is the victim of an unscrupulous therapist who has gotten hold of her husband and started feeding him a mish-mash of astrology, New Age gobbledegook, hypnotherapy, and probably the Cult of the Goddess and a few more I simply didn't recognize. The husband in question, Spicer, accepts without apparent difficulty the notion that he has a blood pressure problem that can best be solved by this means. There are points in the story where he flips back and forth between his new and old personalities, but almost always these are when he wants to get something, usually a concession from Amanda. There are no points in the story where he stands back and wonders who he's becoming.

Since its publication, *Affliction* has been taken up somewhat by various groups who are becoming known as a sort of anti-therapy movement. This all comes at the same time as criticisms are surfacing of the False Memory Foundation, the US organization founded by parents whose children accused them of incest based on so-called recovered memories, that is, memories that only surface under treatment by a therapist, usually a specialist in hypnotic regression. It's worth noting that one recent critical article, published in the *Guardian* and written by Linda Grant, raises some serious questions about the people involved in the FMS and how it has presented its case, but nowhere tackles the central question: can memories of trauma be so buried that they are hidden to their owner until they are released by hypnosis? The jury is still out on that question, and criticizing the FMF won't make it reach its decision any faster.

Weldon's book is a relatively simplistic one. The marriage goes steadily downhill, and the wife, who is pregnant with their first child (although each has a largely invisible child from a previous marriage, both living with the couple), finds herself under siege. All kinds of unpleasant truths emerge, either between the couple or in confidence to their best friends or therapists: affairs he had, affairs she had. I find it hard to believe that a real couple could be shattered so

easily; I find it hard to believe that the husband wouldn't go through a more genuine flipping between states before settling permanently into his final one. How many people do you know who have been through therapy and have actually done anything they didn't already want to do? Those I know who've been through it rarely seem so much changed: greater ease at living with themselves, yes, but dramatic, external changes, rarely. If those seem to take place, it seems to be more often that the therapy has merely given them the courage and understanding to do something they already wanted to do but were afraid of.

Mind you, Amanda does very nearly flip out, and that's absolutely believable. I should know: I was in fact briefly married to someone who had been through Lifespring (loosely a 'human potential' training with similarities to est) and seriously believed he was able to heal headaches. He told one of my closest friends he was deeply convinced that aliens had landed at one time on the planet and were keeping a benign eye on us even to this day. Last I heard, he was practicing Tai Chi. When you live with those beliefs they do indeed rub off on you—you may not (I didn't) accept the notion of the benevolent aliens watching over us, but I did take on board a certain number of somewhat lesser notions, more or less out of good will. After the marriage ended, it took me some time to sort through the various things I'd picked up in the three years we knew each other and work out which ones I thought were bullshit. Amanda seems to me to recover awfully fast.

What Amanda does have in common with the FMF folks is a deep-seated belief that her marriage was more or less idyllic until the evil therapist came into it, just as the FMF folks tell stories of idyllic families until the accusations of abuse surfaced. I think both of these must be fantasies, although Weldon certainly never gives any indication of it. Partly, this is because of my belief in the limitations of the kinds of changes therapy can make. But partly, this is because, in the real-life cases, for an adult child to be so easily persuaded that her (usually) parents have abused her there must have been some dysfunction in the family to begin with. Most of these adult children are already troubled people: they typically have eating disorders or other problems that send them to the therapist in the first place. You would think, therefore, that somewhere under Amanda's complacency would be lurking memories of older troubles that had been papered over. But apparently not.

Wendy Grossman is the founder of *The Skeptic*, a member of the UK Skeptics, and a writer and folksinger.

Reviews



Myths of miracles

Joe Nickell, *Looking for a Miracle: Weeping Icons, Relics, Stigmata, Visions & Healing* (Prometheus Books, 1993, £19.99, hardback, 253 pages)

'Do miracles exist?', asks Joe Nickell. Are modern-day 'miracles', such as weeping icons, the Shroud of Turin, faith healing, and speaking in tongues, really 'miraculous'? Do these phenomena transcend the bounds of nature, and show supernatural forces at work in the world today? In *Looking for a Miracle*, Joe Nickell builds a low-key but devastating case that no rational evidence supports the existence of miracles, even though 'claims of the miraculous continue to pour in.' [page 235].

This book provides a broad, but shallow coverage of many contemporary 'miracles': 'relics' such as the Shroud of Turin, 'weeping' icons, 'appearances' of the Virgin Mary, faith healing, and 'charismatic' behaviour, such as 'speaking in tongues'. This broad view reveals the similarities and patterns that would not be apparent from examining a single case. For instance, he recounts the not very ancient or honourable story of the shrine of Lourdes. The waters of this famous French shrine are said to have miraculously cured thousands, and you might think the site would be very ancient. In fact, the spring at Lourdes was first 'discovered' to have 'miraculous' curative powers in the 1850's. Of course, there is no evidence that any miracle has ever take place at or because of Lourdes. Nevertheless, thousands of pilgrims visit each year, and dozens of other healing shrines have sprung up in the last century, each (consciously or unconsciously) strongly resembling Lourdes. It is interesting to see how many 'miracles' crop up again and again, manifesting key features of previously successful (that is to say, *popular*) 'miracles'.

Nickell's carefully documented investigations find no evidence of any supernatural occurrence in the alleged miracles he examines. In some of cases, there is no evidence that the 'miraculous' events even took place! In other cases, the supposed 'miracle' has been shown to be a pious (or otherwise) hoax. (The hoaxes by faith healers are particularly damnable—they may easily cause suffering and death for the duped.) In all cases, a key ingredient is credulity on the part of the believer. Combinations of mundane circumstances are transformed by human desire and social circumstances into the 'miraculous'. When you want to see a miracle bad enough, it seems, your mind (or your neighbour) will be able to produce one for you. Although there is no evidence that miracles occur, there is plenty of evidence that people deeply *want* miracles to occur, which generates the determined will to find miracles

where there are really none.

Probing religious claims is a tricky business. One must take great care not to criticize based only on personal prejudice, and to strive to criticize irrational claims without attacking the character of those who might mistakenly believe them. Many skeptics, including myself, generally avoid any attempt to debunk religious claims at all, because they are seldom amenable to rational examination or discussion. Not Joe Nickell. He is not afraid to take on this tough job, and his understated, but uncompromising style is a model of rational investigation for all to follow. I particularly like the way he marshals the arguments of religious believers who have recognized alleged 'miracles' not as the work of the God they believe in, but of human chicanery and human psychology. It is important to recognize that credulity and skepticism are found in members of every religious group, and one can attack nonsense without attacking the religion in whose name it is put forward.

—Robert E McGrath

The world according to Kurtz

Paul Kurtz, *Towards a New Enlightenment: The Philosophy of Paul Kurtz*, edited by Vern L. Bullough & Timothy J. Madigan. (Transaction, 1993, hardback, 376 pages, \$39.95)

Professor Paul Kurtz will need no introduction to readers of *The Skeptic*. This new collection of some of his most recent papers is offered by way of a tribute on his retirement from academic life, a sort of lazy festschrift, in which the great scholar is made to do the bulk of the work!

Although Professor Kurtz is retiring from mainstream academic life, I hope that his activities as a thinker and debater will not be curtailed. When the history of late twentieth century critical thinking comes to be written, Professor Kurtz's name will deserve an important chapter. His work in founding CSICOP and *The Skeptical Inquirer* guarantee the perpetuation of his memory, and, as if this were not enough, he can look upon his contributions to the Prometheus Press, the American Humanist Association, and academic life as a very substantial monument.

This work collects together thirty two papers, mainly from magazines and journals, but there are also some that were presented at conferences and meetings, and which are hitherto unpublished. The collection is divided into six sections, each prefaced by a brief editorial introduction of a couple of pages. Parts One and Two tackle topics in moral and political philosophy, from a humanist perspective. Part Three is devoted to skepticism, Four to religion, and Five to love and death. Part Six, intriguingly entitled 'On the barri-

cedes', shows Kurtz in combative mood. The book concludes with a select bibliography of the writings of Paul Kurtz: books, articles and reviews, running to 530 items in total.

Those who are familiar with Kurtz's work will find no surprises here, and some may find that the repetition of the same arguments and ideas, no matter how much they agree with them, can be somewhat wearisome. This is a book to be sampled, then, rather than read from cover to cover.

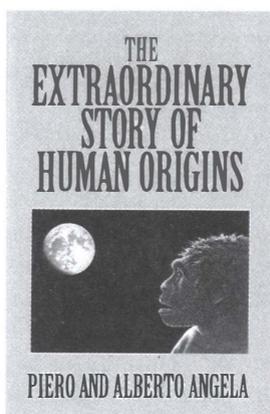
Skeptics will naturally focus their interest on pages 119 to 162, the section devoted to 'Skepticism: science & antisience', which reproduces four articles (one previously unpublished). These discuss general issues surrounding the reasons why science tends to reject the paranormal, and the other reasons why in spite of (and sometimes because of) this rejection, the paranormal continues to flourish. But skeptics will also find food for thought in essays elsewhere in this collection, covering specific topics rather than broad theoretical matters, such as bigfoot, faith healing, and the near-death experience. There is, for instance, a delicious vignette of the televangelist, Ernest Angley, and his method of working, based (literally) on an eyeball-to-eyeball confrontation. There is also much that is good on education in schools and universities, and, though the American experience is very different in many ways from the English one here, the reader may notice one or two intriguing parallels.

Paul Kurtz is a civilized, rational, thoughtful human being. This book is a testament to his search for truth, and it sets an example for all skeptics to follow.

—John Lord

Back to the egg

Piero and Alberto Angela, *The Extraordinary Story of Human Origins* (Prometheus, 328 pages, 1994, hdbk, £23)



From the first paragraphs of the introduction, in which the reader is invited to contemplate the tracing of his own origins through a family tree, the authors provide a thoroughly readable and engaging story of early man. And it is indeed an 'extraordinary' one.

For a reader of skeptical literature, accustomed to seeing deductive science defend itself against myriad argu-

ments of a superstitious or psychic nature, it is particularly pleasing to discover that the book contains no condescending nod, nor self-conscious apology, to any of the non-scientific explanations of human origins. Beginning with a pair of descriptive analogies, in which the 'sediments, footprints, and fossils that petrified in the folds of the earth' are described as the 'evidence' that researchers, like criminal detectives, will examine and make calculated deductions from, and as the 'record' by which the 'genealogy' of the

human race can be traced, the authors assume from the outset the validity of the deductive method. Though they are careful throughout to make the reader aware that anthropological investigations merely provide approximations of evolutionary history, and frankly admit that the specific answers to some intriguing questions is 'we will probably never know', the evidence they present is so well described and carefully assembled that one can forgive the admitted haziness of fine details in an undertaking so vast. Written with a charmingly natural style, and interspersed with imaginative and descriptive narration of what life *may* have been like for various early human and pre-human species, the book is neither dry nor burdened with overbearing terminology. It would not be out of place in the hands of a young, intelligent adolescent, yet it holds the interest of a thoughtful adult. There will be no new revelations to one possessing an in-depth knowledge of contemporary anthropology, but to the curious layman, the story is informative and thought-provoking. The occasional traces of warm and gentle humour included in the narration add to the book's charm. In addition, the reader is treated to a very human view of the scientists themselves, through anecdotes such as how the skeleton of a female hominid who lived some two million years ago came to be named 'Lucy'. One criticism of this book is that it lacks an index, which would have made it more useful as a reference; without an index it would be a rather clumsy and time-consuming task to dig out specific facts from the more than three-hundred pages of material. However, the book does include a rather extensive bibliography, for those interested in pursuing the 'extraordinary story' in greater detail, in addition to four appendices describing the specific methods by which reasoned conclusions can be drawn from a few teeth, bones, and stone tools. Another minor criticism is the occasional lack of skepticism in relating certain conclusions. After describing the famous 'Piltdown Man' hoax, perpetrated some eighty years ago, in which an unusual skull was purported to be the then-sought after 'missing link' between humans and apes (but was in fact an elaborately constructed fake), the contention is made that such hoaxes would be impossible today because of advances in laboratory and field tests. What is not said is that for every advance in the science of detection comes a corresponding advance in fakery. Though a hoax of the same nature as Piltdown Man may be impossible, it should be admitted that the possibility exists that a more sophisticated modern hoax could be developed. Also, in their enthusiasm for their subject, the authors sometimes lapse into descriptions of events as 'probably' happening in a certain way without providing evidence for why such a conclusion is probable. But such lapses are atypical in the text. The book is aptly titled, for the authors set out to tell a story, and they have done so in admirable fashion. Credit also goes to translator Gabriele Tonne, who made the story accessible to readers of English, and to Valter Fogato, whose excellent illustrations add to the book's appeal. For those with a layman's interest in the earliest entries in their human 'family tree', the Angelas' book is a fine introduction.

—Jerry Cosyn

Alien adventures

Jim Schnabel, *Dark White* (Hamish Hamilton, 1994, hardback, £6.99, 304 pages)

For centuries, strange craft have been seen in our skies. A hundred years ago they took the form of airships; in 1947 Kenneth Arnold described his sighting of 'flying saucers', and in 1953 George Adamski claimed to have travelled to Venus in one. Later 'close encounters' became more bizarre, with Earthlings gathered for examination like biological specimens, or treated as breeding animals. Women were artificially inseminated and their hybrid embryos subsequently removed for incubation by alien scientists. At present, thousands of people in the United States alone are known to have been abducted by creatures from Zeta Reticuli, the Hollow Earth (Lemuria), or the Outer Reaches of the Cosmic Mind. Or have they?

Before evaluating these claims (and there are plenty of them documented here), you should know that many psychologists believe that these and other similar phenomena (Night Terrors, Hypnagogic imagery, the Old Hag) are produced by disturbances in the temporal lobe and adjacent limbic lobe of the brain—they may well be visitations from Inner rather than Outer Space, triggered by stress, fatigue, or even by electrical discharges from the ground ('Earth lights'), in people who are by no means mentally disturbed, but who may have fantasy-prone personalities, perhaps reflecting childhood trauma.

The traditional view involves alien spacecraft from across the Galaxy, observing us for their own, no doubt nefarious, purposes. Experts differ as to how many sightings can be explained away as hoaxes or misidentifications of (for example) a weather balloon or the planet Venus, but many believe that hard evidence is available, albeit governmentally hushed up, in the form of crashed saucers and their (living or dead) occupants.

Philip J. Klass (not to be confused with S-F writer Philip Klass, a.k.a. William Tenn) believes that many UFO sightings are really due to plasma discharge around power lines. Similar theories (put forward by Paul Devereux, Michael Persinger and John Derr) point to electrical and magnetic phenomena associated with tectonic strain in the ground ('Earth lights') as another possible source.

The question arises whether such phenomena can account for reports of abduction, levitation, telepathic communication, medical examination, and so on, put forward by so many witnesses. As hypnosis is often used in therapy, these details may represent unconscious confabulation (fake memories taken to be completely real) prompted by the therapists' questions.

On the other hand, many such reports are both spontaneous and apparently sincere, with their own internal consistency and a startling similarity to some traditional folklore accounts. In the past, people were abducted, ravished, and given messages of hope or warning by supernatural beings—elves from Magonia, demons, angels, and even the Virgin (at Fatima and elsewhere). Is there perhaps an occult explanation for the UFO phenomenon?

Another viewpoint accepts the similarities, but posits an inner source for such experiences. Fantasy-prone personalities, dissociated states, and stimulation of brain structures such as the amygdala and the hippocampus can produce *déjà vu*, paralysis, feelings of anxiety or eroticism, mystical and out-of-body experiences, missing time and sense of alien presence, ecstatic visions and voices, and shamanic healing journeys. 'Earth lights' (still a controversial concept) may provide the trigger for temporal lobe transients giving rise to some UFO abduction reports.

Jim Schnabel, while clearly skeptical of much of the abduction phenomenon, eschews polemic, and simply presents without critical comment the views of the different factions in their own terms. His accounts of the developing rift between Hopkins and Strieber, and of the ordeals gone through on a regular basis by various abductees, are sympathetic and mind-blowing, not to say extremely funny in a sad kind of way. If you only ever read one UFO book, read this one!

—Mike Rutter

Evolution observed

Jonathan Weiner, *The Beak of the Finch: A Story of Evolution in Our Time* (Alfred A Knopf, New York, New York 1994)

The Beak of the Finch is not a pro-evolution book. As the author points out, there is no pro- or con- about it: evolution is a fact. It is occurring all around (and inside) us everyday. Creationists often claim, among other things, that evolution has never been observed in action and that natural selection is a non-scientific, *ex post facto* explanation of biological diversity. This may have been true in the days of Darwin and Huxley, but today it is flat out wrong. There are hundreds of studies that directly demonstrate natural selection in the wild.

Taken together, these new studies suggest that Darwin did not know the strength of his own theory. He vastly underestimated the power of natural selection. Its action is neither rare nor slow. It leads to evolution daily and hourly, and we can watch. [page 9]

This book centres on a leading group of evolution watchers, Princeton Professors Rosemary and Peter Grant, their students and colleagues. These researchers have been living among and studying the Galapagos Finches for the last twenty years. This intense and sustained field work has documented the life of the finches nearly down to the last individual finch, egg, nest, and ounce of finch food. The isolation of the Galapagos and the painstaking labour of the naturalists have produced what may be the most complete picture of a natural ecosystem ever.

What do you see when you really look at a living ecology? Evolution! Not the abstract, palaeontological 'evolution of the horse' over millions of years, but measurable change in a few short years and decades. The remarkable variability of the beaks of the finches has been a biological mystery since Darwin's day.

The manifest diversity of the finches on the Galapagos is held up as a canonical example of an adaptive radiation. Evolutionists theorize that the descendents of a few birds that accidentally arrived on the islands have evolved to fill the empty habitats available on the islands. The Grants' work makes clear that this natural selection is not some abstract, unique, historical event, it is a continuous process down to today. In the last twenty years of drought and drench, they have seen, measured, and recorded how the finches have changed in response to selective pressures.

The creation of new species is one of the toughest questions for evolutionists to explain: how can something new emerge from something old, simply by chance? On the Galapagos, natural selection is, in fact, leading to the emergence of a new species of Finch. The case is actually stronger than that. The Grants have shown how the cycle of wet and dry years has selected the existing species, they have uncovered the mechanisms by which populations split and join, and they show how recent climate changes will, in time, create a new species of Finch.

Was Darwin right? Actually, Darwin was badly mistaken about several key aspects of evolution. He was stuck with the archaic notion that 'species' are fixed types ('specimens'), walled off for ever from each other. In fact, a 'species' is a dynamic, fluctuating gene pool, which overlaps with similar 'species', possibly diverging and converging again and again.

The Galapagos finches show how misleading the entire idea of a 'species' is: there is great diversity among the finches, but it is very difficult to separate out the different 'species'. Not only do members of the 'different species' of finches strongly resemble each other, they interbreed, and produce intermediate forms of finch. Perhaps the 'origin of the species' lies, not in nature, but in human psychology. Organizing the world into a set of categories based on types is a well known mental strategy. Such categories lie in the human mind, but not necessarily in nature.

The most exciting—and scariest—part of the book is the demonstration of the great speed with which evolution really works. To give an intimate example: your body contains dozens of types of bacteria, which are evolving hour by hour as your physiology changes. A single dose of antibiotic results in you body filling with resistant strains of bacteria. When the selective pressure of the drug is removed, a new genetic mix will evolve in your internal ecology. Similarly, the use of pesticides swiftly produces resistant strains of insects and weeds. These are cases of evolution at work on the time scale of hours and days. Life adapts rapidly to humans and human activities. Anyone who claims that 'no one has ever seen evolution happen' is not just mistaken, they are wilfully ignorant of the facts.

This book is mostly not about the theory of evolution, it is mostly about practising naturalists. The scientists discussed in this book have invested their whole life into the close up study of one tiny piece of nature. They are not likely to get rich or famous, and most of the people they meet 'don't believe' in evolution. Their work must be its own reward. One could lead a worse life. I salute them.

—Robert E McGrath

Pains in the neck

Jean Marigny, *Vampires: The World of the Undead* (Thames & Hudson, paperback, 144 pages, 1994, £6.95)

This is the latest in Thames & Hudson's recently launched 'New Horizons' series: compact little paperbacks, lavishly illustrated, which explore particular topics in culture, civilization, and the history of ideas. The treatment is an attractive combination of scholarship and popularization. When it comes to vampires, Jean Marigny, who teaches English at Stendhal University, Grenoble, is admirably fitted to his task, not least because he 'directs a research centre for studies in fantasy and horror' there. Nice work if you can get it ...He offers an engaging essay in the history of the concept of the undead in Western civilization, beginning in Ancient Greece and the Middle East, and taking in the Black Death, Gilles de Rais, Vlad the Impaler, the European witch craze, and Countess Erzsebet Bathory, whose home in the Carpathians was the model for Count Dracula's castle in Bram Stoker's novel. Throughout, the author is firmly matter-of-fact, yet clearly fascinated by the potency of the Dracula myth, which he refers to as a 'collective psychosis' in certain parts of late mediaeval Eastern Europe.

Marigny then turns his attention to the modern era, charting the debates and opinions that were freely indulged by the pious and the learned. It is in this period that the main elements of the vampire myth as we know it begin to knit together. The first key date in the discussion is 1760, when the great French naturalist Buffon gave the name of 'vampire' to the blood-sucking bats of the Americas. From then on, the myth of the undead was to be re-shaped. The second key date is 1819, which saw the publication of Dr Polidori's short story *The Vampyre*. Thirdly, in 1897, Bram Stoker published the classic treatment of the legend. The rest, as they say, is history, and Marigny captures the salient points in between. We are taken on an excursion through the Romantic movement, and on into the wild excesses of the Gothick. Marigny concludes his essay with a brief look at the vampire in the twentieth century, appearances that are, predictably, limited to the cinema and to comic strips. Proper attention, but not quite enough in my view, is paid to Murnau's classic 1922 film *Nosferatu*, starring the aptly named Max Schreck, who gives the appearance of being 'only marginally human'. This is surely one of the most terrifying films ever made, and deserves another showing on British television.

There are many excellent illustrations throughout, including paintings, woodcuts, and cinema stills. The book concludes with a series of excerpts from other works on the subject, and a filmography and a bibliography.

This is a neat little book, and one that would make an excellent introduction to vampirism for anyone interested in the concept as a cultural phenomenon. Other readers may have their own peculiar reasons for buying it (one sub-heading: 'How does one become a vampire?') I found particularly eye-catching). It would make an ideal present for a loved one, and who knows, you might even receive a peck on the neck by way of thanks.

—John Lord

Buddha for beginners

Samuel Bercholz & Sherab Chodzin Kohn (Editors), *Entering the Stream: An Introduction to the Buddha and His Teachings* (Random House, pbk, 330 pages, 1994, £9.99)

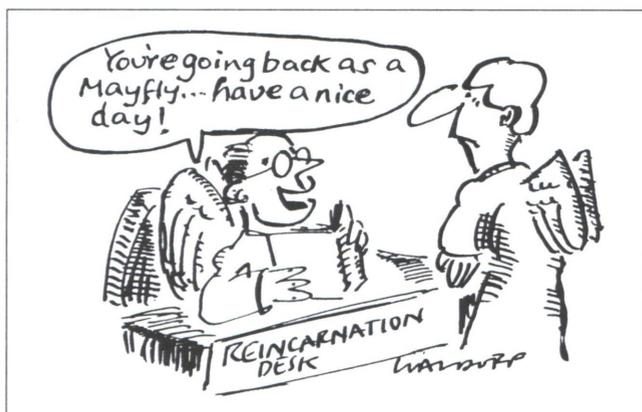
Buddhism is one of the major world religions to have the interesting attitude of not requiring belief in a creator God, and is sometimes regarded as the eastern counterpart to psychoanalysis, albeit usually more complex.

Entering the Stream is the companion reader to Bernardo Bertolucci's recently released film *Little Buddha*, the final part of his 'oriental' trilogy. The film is not an account of the life of the Buddha, rather, it is the story of a boy in Seattle who is believed by monks to be the reincarnation of a lama. Bertolucci goes to great lengths to ensure authenticity, and there is a significant involvement of Tibetan scholars and teachers in the making of the film.

Given the 'official book of the film' background the inevitable expectation is that of a glossy marketing product full of shots of extras, and interviews with the dolly grip and gaffer's best mate. However this is a far more serious effort than that, which is something of a surprise. Beyond the two-page foreword by Bertolucci, the film is not actually referenced at all.

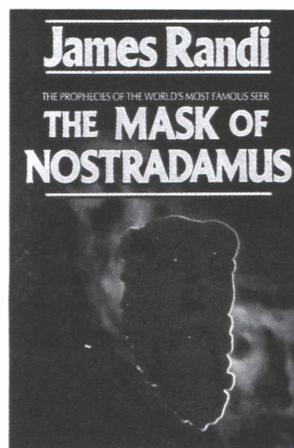
The book really is a 'companion reader' to the film, as claimed on its cover, and presents a wide range of material covering the Buddhist background in which the film is set. It is rather like going to see *Rambo*, or *Lethal Weapon*, and leaving the cinema feeling that certain subtleties were not sufficiently explored—only to find that the programme you purchased contains articles by Freud and Jung on the natural human tendency to acts of extreme and senseless violence. In all there are some thirty essays and excerpts, all by respected authorities within the Buddhist tradition covering the various aspects of its teachings. It is unusual to find this range in a single volume. The material is logically laid out, with a historical perspective and the approaches of the major schools. Facts and representative opinion are presented from authoritative sources—with good factual biographies of the contributors. Anyone interested in the ideas behind the film is thereby provided with a clear set of material from which to gain some understanding of what it is about, rather than a collection of hearsay and marketing hype. Surely for the cause of true open-minded skepticism this is encouraging.

—Adrian West



Seeing behind the mask

James Randi, *The Mask of Nostradamus* (Prometheus Books, 1990, paperback, 256 pages, £14.50)



More than 400 years after his death, Michel Nostradamus is famous as a prophet who correctly predicted, among other things, the death of Charles I, the French revolution, and the rise of both Napoleon and Hitler. He is also said to predict the end of the world, real soon now. The story of this man and his remarkable poetry, the 'Centuries', is familiar from hundreds of books, articles, and broad-

casts. Who was Nostradamus? What did he really do and write? Did he really predict the future with uncanny accuracy?

In *The Mask of Nostradamus*, the renowned magician and nonsense-basher James Randi critically examines the fact and fiction surrounding Nostradamus and his prophecies. Extensive research and hard work resulted in a story somewhat less than miraculous. 'Twas ever thus. Unlike the vast majority of Nostradamians, Randi sought out first hand information: the original writings of Nostradamus (in archaic French), contemporary records of his life and of his times. This allowed Randi to construct a picture of Nostradamus, the man and his work, and to discern the layers of mistakes, mythology, and outright forgery that have built his reputation over the years.

Nostradamus was a real man (this was not a forgone conclusion!), a physician and astrologer, and was famous in his own day as a prophet. Randi reveals something of the character of the man, including a little suspected inclination to Protestantism—a lethal leaning if publicly known in his time. The principal work of Nostradamus are the 'Centuries', some 940 four-line 'quatrains' of obscure verse, written in sixteenth century Provincial. These works were intended to be prophetic, and are, as Randi says, typical of prophecy: vague, 'symbolic', and voluminous.

Most of the writings attributed to Nostradamus are his (again: not a forgone conclusion!), although a few forgeries and many errors have crept in. Some of Nostradamus' predictions are clear, and these proved inaccurate. The majority of Nostradamus' quatrains are so cryptic that the 'prophetic meaning' is only apparent by diligent interpretation. Diligent interpreters have found (what they see as) clear references to historic events. This is done by interpreting the 'symbolism' in the verses, and by rearranging letters and words to 'reveal' the 'true' meaning which Nostradamus supposedly disguised in anagrams. Actually, it seems that it is also fair to add and delete letters, to change punctuation, and to juxtapose lines from disparate parts of the work. As you might imagine, the result bears little resemblance to the original text, and has an unknown relationship to

Nostradamus' intentions. Such manipulations do, with sufficient ingenuity and disregard for historical facts, yield remarkable matches with alleged historical events.

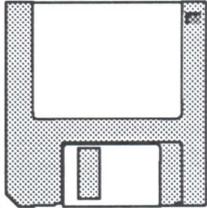
Randi documents some of the more spectacular (mis)interpretations of Nostradamus, and shows them to be completely bogus. Not content simply to show the silliness of others, Randi provides a few interpretations of his own. He shows the most famous 'predictions' (such as the quatrains that supposedly predicted the rise of Hitler) are most likely references to events in Nostradamus' own time (always the easiest predictions to get correct!) or so vague as to be unidentifiable.

This book has one minor and one major shortcoming. Randi writes as I suspect he lives—with great energy in many directions at once. One could wish for a more focused style, with fewer digressions. The major flaw in this book is the near total lack of citations. It is clear that Randi drew on many sources, collaborating with competent scholars and including his own original research. But it is impossible to tell what the sources of specific claims are and which work is his own original contribution. It is a shame that proper citations were not included, even though the book is clearly intended to be popular rather than scholarly.

The great merit of this book is, of course, that it was

written. Nostradamus' extraordinary powers are almost universally accepted, without the least attempt to critically evaluate them. Now there is at least one book where one can learn a lot about the real Nostradamus, and separate the man from his myth.

—Robert E McGrath



Calling contributors old and new!

The Skeptic welcomes articles, cartoons and illustrations for possible publication. Please send your contribution, together with an SAE if you require it returned, to The Skeptic, PO Box 475, Manchester M60 2TH. PC and Mac disks are welcome.



Prometheus Books Prize Crossword

by Skepticus

Across

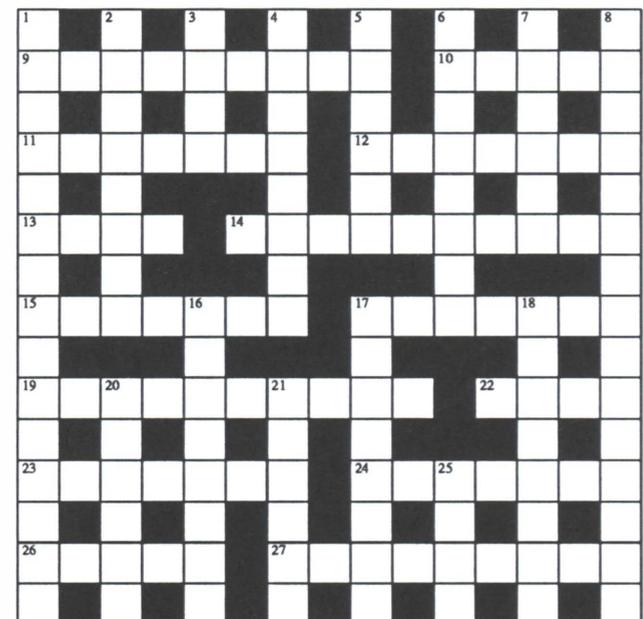
- 9 Pine after a backwash which is long lasting (9)
- 10 Profit from what sounds like a face covering (5)
- 11 Her neat mixture results in baked clay (7)
- 12 Sick, I cite endlessly 'It's illegal' (7)
- 13 A Spanish hero causes upset stomach (4)
- 14 Out-maneuvre an officer who is not desk bound? (10)
- 15 Mixed-up loud elf is dismally sad (7)
- 17 Lag gone astray forever (7)
- 19 Heartless coy friend takes brief click, endlessly repeating (10)
- 22 Find an inflamed swelling in saddest yeti's eye (4)
- 23 Confused I realise, pointlessly, I am middle-eastern (7)
- 24 Back car (company) on animal (7)
- 26 Inside many lonely aliens is a synthetic substance (5)
- 27 Sausage is pathological (woodless) mess (9)

Down

- 1 Kidnappings by foreigners in 5 7s? (5,10)
- 2 I learnt I was about inactivity (7)
- 3 City is a suitable place for a dive (4)
- 4 Ultimately resulting from net value? (8)
- 5,7 Result of throwing a pot, but not on a potter's wheel (6,6)
- 6 Average weapon, in a way of speaking (8)
- 7 See 5
- 8 Leprechaun, pilot of 5 7? (1,6,5,3)
- 16 Neat if an untidy idler is puppet (8)
- 17 Sensitive to confused ill grace (8)
- 18 It is not compulsory to pot a lion in a mess (8)
- 20 See 25
- 21 A bit of a pie in one (6)
- 25,20 Cut short a ring to produce a corny pattern? (4,6)

The sender of the first correct solution, whose name appears on *The Skeptic's* Ouija Board, will win a copy of Joe Nickell's book *Psychic Sleuths*. Send your entry to **The Skeptic (Crossword)**, PO Box 475, Manchester M60 2TH, to arrive no later than 15 September 1994.

Prometheus Books specialises in skeptical books about the paranormal. For a free catalogue, write to Prometheus Books, 10 Crescent View, Loughton, Essex, IG10 4PZ.



Letters



Objective honesty?

It is interesting to note that Gilbert Shapiro made no mention in his article 'Science and Nonsense' (*The Skeptic*, 7.6) to the 'Mars Effect' found by Gauquelin in which several top scientists were drummed out of CSICOP for deliberately distorting the results in their replication. Unfortunately this blinkered attitude continues with the inability of so-called objective scientists in conceding that the 'Mars Effect' is a fact and not a bizarre anomaly that can be conveniently ignored.

Recently French Skeptics kindly collected a sample of 1076 athletes for Professor Suitbert Ertel which again produced a significant result. Interestingly those athletes with at least one citation showed a more pronounced Mars Effect than those without. Not surprisingly considering the result, the French Skeptics have shown no interest in analysing the

sample despite their hard work in collecting it. This attitude would seem to contradict the objective honesty that Gilbert Shapiro ascribes to the sceptical scientific fraternity; his assertion has not been borne out by experience either in the past or the present.

**Greg Young
Manchester**

Imperfect science

Skeptics tend to scoff at the belief systems of other people whilst placing an unreasoning belief in the tenets of science. But science is just another belief system—there is no philosophical basis for the assumption that ideas that are central to the scientific method such as testability should be applicable in all circumstances. Isn't it time that skeptics (and scientists) acknowledged that there may be

other ways of looking at, and interacting with, the universe than by means of the fairly limited toolkit that the scientific method offers?

**James R Gordon
London**

Fantasy v reality

I'd like to express my agreement with Wendy Grossman's comment in her *Skeptic at Large* column in *The Skeptic* 8.1 that 'if being unable to distinguish fantasy from reality is the hall mark of mental illness, large parts of society are clearly in danger of needing to be institutionalized for its own safety'. They may not seem as eccentric as UFO abductees or people who regularly converse with ghosts but don't let's forget the large numbers of people who send expensive wedding gifts to fictitious characters in TV soaps.

**P G Andrews
Glasgow**

UFO Conference

Where? Blackpool at the Station Hotel

When? Bank Holiday Weekend 27/28 August

SATURDAY

Philip Mantle, Director of Investigations for BUFORA, and MUFON representative for England, will be discussing cases he has investigated in the North of England.

Dr Serena Roney-Dougal, head of the PSI research centre in Glastonbury, will be looking at the UFO-pineal connection. Albert Budden, one of the U.K.'s leading UFO researchers will be presenting his latest findings on the link between UFO's and electronic pollution.

Mike Dave Oran is yet another witness to the UFO's apparant ability to interact with human consciousness. Moved to encapsulate his experiences in music, he formed the Cosmic Folk Band *Story Teller* which will be playing in the evening.

Refreshments available throughout the day. Information about the wide range of accommodation available and directions etc. will be sent with tickets. Price of tickets includes free admission to live band, *Story Teller*.

Further information from: Joe Dormer, 293 Devonshire Rd, Blackpool, FY2 0TW. Tel: 0253 356821.

Ticket prices: both days £9; Saturday only £5; Sunday only £5.

From: Sam Wright, 15, Knaresboro Ave, Marton, Blackpool, FY3 9QW. Please make cheques payable to 'LAPIS'.

Organised by LAPIS.

SUNDAY

Jenny Randles, author of over 20 books on the subject and UFO consultant to Jodrell Bank will be looking at alien communications and their significance.

Lucy Pringle, a founder member of the Centre for Crop Circle Studies, will be showing us what crop formations have appeared this year, and examining some strange effects associated with them.

Arthur Tomlinson who has chronicled all the UFO events of the past half century, will describe his own encounter with the phenomenon.

XXXXXX who, because of the sensitivity of his material, has asked for his identity to be concealed until the day.

Subscribe to *The Skeptic*

The Skeptic is published bimonthly; a year's subscription covers 6 issues. Postpaid rates are shown below—please make cheques/P.O.'s (£Sterling only, please) payable to **The Skeptic**.

Postal area	Sub. (1 year)	Back issue
UK	£12	£2.10
Europe (airmail)/		
Rest of world (surface)	£15.50	£2.70
Rest of world (airmail)	£28	£4.50

From: **The Skeptic (Dept. B), P.O. Box 475,
Manchester, M60 2TH, U.K.**



Back issues

Volume 1 (1987) Out of print.

Volume 2 (1988)

1,2,3,4,5 Out of print.

6 **Bristol psychic fair**; The incredible Mr Newman; Predictions for 1989; Joe Nickell on the Shroud of Turin.

Volume 3 (1989) Out of print.

Volume 4 (1990)

1,3,4,5 Out of print.

6 **The man who invented UFOs**; The new demonology; Reflections on past life regressions; What is scientology?; Polywater.

Volume 5 (1991)

1 **Paul Daniels interview**; Canals on Mars Nostradamus and the Middle-East crisis; Potty training; The case for super-skepticism; Skeptical predictions.

2 **The New Age and the crisis of belief**; The Mary Celeste mystery—solved? N-rays; Wet and dry skepticism; 1991—the final crash of the UFOs.

3 **Why not to test a psychic-1**; Speaking in tongues; Passing the torch; Another look at Scientology; Sharp blades or sharp practice? .

4 **James Randi interview**; Why not to test a psychic-2; The inside-out cosmos; The Freethinker: 1881–1991; More light on Medjogorje; Dualism, ESP and belief.

5 **The documentation of a miracle?** (Dr Peter May); Psychics and semantics (Mike Rutter); Smith and Blackburn: homswagglers extraordinaire (Martin Gardner); Spirits at large (Lucy Fisher); Thicker than water (Bernard Howard).

6 **The summer of '91** (Martin Hempstead); Seeing is believing? (Susan Blackmore); Ask Professor Mesmo; Assessing evidence (John Lord); Alternative medicine in Europe (Wim Betz); Review of 3rd EuroSkeptics conference.

Volume 6 (1992)

1 **Paranormal trends in the USSR** (Tim Axon); Faking an alien (Ole Henningsen); Where do we file flying saucers? (Hilary Evans); Psychic questing (Lucy Fisher); Future imperfect (Robert Sheaffer); Bands of hope (Lewis Jones).

2 **Brainwashing a skeptic** (Arthur Chappell); Arguments to design (Anthony Flew); Dianetics: From out of the blue? (Jeff Jacobsen); Taking it all too far (Michael Heap); Who invented the Loch Ness monster? (Steuart Campbell); The medium, not the message (Terry Sanderson).

3 **Premanand: Scourge of the Godmen** (Lewis Jones); Women and the New Age (Lucy Fisher); Do-it-yourself UFOs (Dave Mitchell); Chapman Cohen: freethinker (Ean Wood); Ice in the sky (Loren Petrich).

4 **Physics and the New Age—Part 1** (Tim Axon); A short course on homeopathy (Jan Willem Nienhuys); Ball lightning and one other (Frank Chambers); The science of miracles (Eric Stockton); Pyramid power (Jerome L Cosyn); Hoaxers on trial (Robin Allen).

5 **The Man Who Died Twice** (Frank Koval); Vampires in Cumberland (C M Drapkin); In no hurry to go (Charles Ward); Is light getting slower? (Donald Room); Euro-cerealogy (Ernest Jackson); Physics and the New Age—Part 2 (Tim Axon).

6 **Great balls of fire** (Steuart Campbell); Quackupuncture (H B Gibson); Cold comfort for Cold Fusion (Malcolm Glasse); The fasting woman of Tutbury (Tom Ruffles); Skeptics and scoffers (Tad Clements).

Volume 7 (1993)

1 **The theft of the tarot pack** (Daf Tregear); Across the great divide (Rebecca Bradley & Tso Wung-Wai); 1993 Skeptical predictions (Marjorie Mackintosh); Obituary: Charles Honorton (Susan Blackmore); A healthy dose of sasarilla (Jerome Cosyn); A test for reincarnation (Val Dobson); Tunnel vision (Brian W Haines).

2 **The myths of meditation** (Arthur Chappell); Vicious circles (Robin Allen); The Cyril Burt affair (Ray Ward); What hath Carlos wrought? (Robert McGrath); All that glisters is not gold (Paul Munro & Dave Mitchell); Skepticism—1895 style (Tom Ruffles); Equine pseudoscience (Russell Dear).

3 **Cold-fusion heats up** (Chris Tinsley); Rajneesh: the failed guru (Brian Morris); Beyond the near-death experience (Rory MacCallum talks to Susan Blackmore); Meditation: skepticism or cynicism? (Adrian West); Spirit guides and after-images (Colin Sutherland).

4 **The face on Earth** (Robert McGrath); Neural networks and NDEs (David Bradbury); Francis Galton: A skeptical traveller (Russell Dear); Cyril Burt reconsidered (John McLachlan); It's all in the mind (Arthur Chappell); The computer conspiracy (Andrew Bulhak).

5 **The mysteries of creativity** (Margaret Boden); At the frontiers of science (William Corliss); A Supernatural IQ? (Andrew M Colman); The Big Bang controversy (Taner Edis); Write your own pseudoscience (Bob Bassalla).

6 **Science and nonsense** (Gilbert Shapiro); The Mary Celeste 'mystery' (Brian Haines); Who's that on the line (Robert E McGrath); Close encounters of the cult kind (Arthur Chappell).

Volume 8 (1994)

1 **Crop circles: the full story** (Robin Allen); Parapsychology in the UK (Tony Lawrence); Crystal dangers (Ian Plimer); Skeptical predictions for 1994 (Marjorie Mackintosh); Hello, Earth talking! (Robert McGrath); Far too green by half (Russell Dear).

2. **The Creation: what really happened?** (Mike Walsh); Crop circles: the full story, Part 2 (Robin Allen); Freud and the Occult (Rebecca Drayer).



This document has been digitized in order to share it with the public through AFU's project, running since 2010, to share files donated/deposited with the AFU foundation. Please consider making single or regular monetary donations to our work, or donations of your files for future preservation at our archival centre.

Archives for the Unexplained (AFU) · P O Box 11027 · 600 11 Norrköping, Sweden · www.afu.se

Paypal: afu@ufo.se

IBAN: SE59 9500 0099 6042 0490 7143

BIC: NDEASESS – Nordea/Plusgirot, Stockholm

Swish (Sweden only): 123 585 43 69