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NEXUS

NEW TIMES • Vol 8, N° 2

**Animal Testing:
the human cost**

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FEBRUARY – MARCH 2001

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NEXUS

NEW TIMES MAGAZINE

Volume 8, Number 2 FEBRUARY – MARCH 2001

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STATEMENT OF PURPOSE

NEXUS recognises that humanity is undergoing a massive transformation. With this in mind, NEXUS seeks to provide 'hard-to-get' information so as to assist people through these changes. NEXUS is not linked to any religious, philosophical or political ideology or organisation.

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Editorial

Conspiracies and conspiracy theories are subjects which the mainstream media still quickly dismiss as nonsensical, associating them with right-wing extremists as much as possible. But conspiracies, by their very definition, seem to be part of human nature, let alone human history. Brothers and sisters conspire against each other and their parents; businesses conspire against other businesses; politicians conspire against other politicians; and countries conspire against other countries. To believe otherwise is to live in fantasyland. At school we are taught that history is full of conspiring individuals, tribes and nations, but somehow we are led to believe that all significant conspiracies vanished after World War II.

One glaring conspiracy is the cover-up on UFOs. I am convinced that key elements of the military/intelligence community in all industrialised nations are withholding important information on the nature of UFOs. Given the fact that elected (and puppet) governments are fairly transient, I doubt that many politicians are 'in the loop' on the subject. I suspect that the key executive-level public servants of many governments are privy to it, as are key executive officers of most major defence-industry-related companies. Then, of course, there are the UFO witnesses and experiencers who are rapidly growing in number.

The big question in many NEXUS readers' minds is, "Why the silence?" Ironically, the lack of 'official' explanation or even interest in UFOs creates an information vacuum wherein conspiracy theories find nourishment. Opinion polls show that the majority of the world's Western populations now believe that UFOs are likely to be real, and, importantly, that information about them is being suppressed by 'the government'. It is just a matter of time before the number of videotaped encounters increases to the point where an official 'statement' is warranted. I wonder what the 'spin' on that moment will be? Are UFOs just secret government experiments, or do we really have cosmic neighbours? One thing is for sure: the world will change forever on that day. I suspect that the globalisation agenda is of more immediate importance to those who are in the position to decide what UFO information is released and when. I'll wager that soon after we arrive at a globalised, cashless economy with harmonised trading blocks, that is the time when there'll be a major release of UFO information.

In the meantime, we are pleased to present another two months' worth of food for your brain. The Bush-Cheney Drug Empire article will not surprise regular readers. Now that the Bush family, its associates and backers have consolidated their hold in the United States, you can expect some rapid action. Read the article to see what I mean.

We cover several important health-related subjects this issue. One article exposes the global agenda to put irradiated food on our plates, and another discusses beta-glucan, a natural extract which can boost the immune system. The article on animal experimentation shows that, apart from the moral and ethical concerns, there is just *no* scientific basis for using animals to test drugs and products for human use. It is fatally clear that testing on animals ultimately kills thousands of humans. The practice is purely money-driven now, so read the article and then tell companies which test on animals that you will no longer buy their products! Consumers *do* have power—if they use it!

A phenomenon which has teased and tantalised people for centuries is ball lightning. Recently, some US researchers reinterpreted some of Dr Nikola Tesla's notes and worked out how to make their own ball lightning. The details are in Science News this issue.

We are also pleased to give attention to Dr Paul Violette's excellent work—in particular, his research on the periodic explosions at the centres of galaxies. If you think we are not affected by these events, read the article and think again. Scientists and prophecy-watchers alike will find themselves shifting uncomfortably in their seats after reading this.

Readers interested in ancient mysteries and the unexplained will appreciate our new series, starting this issue, on mysterious civilisations and races inside the Earth. Why do so many cultures have legends of subterranean beings, and why are they so alike?

Finally, I must mention the "Garlic is Bad for You" items. Having been alerted to comments made by Dr Bob Beck (of "Beck Zapper" fame), we are now looking around for more on this subject. Read Letters to the Editor first, then the item in Global News, and contact me if you have comments or information to pass on. Till next time...

Duncan

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Letters to the Editor ...

Diet Soda Aspartame Dangers

Dear Editor: I have been ill with unexplained seizures since 6/99. My seizures are not convulsive but, rather, I suffer serious dizziness and vertigo sometimes for hours at a time. The neurologist is baffled, as none of my symptoms is classic for "seizure" or for "migraines".

Firstly, the doctors attributed it to a hormonal imbalance after a miscarriage in 6/99. Then they even wanted to label me as having "panic attacks". Being the patient from hell, I refused the panic attack angle and said, "There is something seriously wrong—so start looking elsewhere, pal!"

We decided to try an antiseizure medication, and my episodes seemed to lessen in frequency. Coincidence, or was the seizure diagnosis wrong in the first place?

I decided to do some more research myself, and realised even the first "petit mal-like seizure" occurred after ingesting multiple daily servings of diet soda. Whenever I would have a "break-through" seizure on the meds, in reflection it was after consumption of multiple diet sodas. My curiosity wondered if it was caffeine or the artificial sweetener.

When reading your article "The Bitter Truth about Artificial Sweeteners" [NEXUS 2/28, 3/01 or website], I wanted to throw up! I began to shake at the simplicity of everything that's been happening to me. This seemed to explain the "unexplainable, non-classic" symptoms the doctors were all baffled with. Didn't they read about this in med school or in their continuing education seminars?

Thank you, thank you, thank you...! This patient from hell is now taking things into her own hands. I have already discontinued drinking my much-loved diet sodas (as they were also causing daily heartburn) and am drinking more water and juices from frozen concentrate. In less than three days, I am already feeling immensely better. I'm going to continue with this, as well as scrutinise other things in my dietary intake. I can't believe the answer could possibly be this simple. I do understand I may be wrong, but cutting this out isn't going to hurt me. I will continue with my

antiseizure med for a while longer, just in case I'm off the mark. The antiseizure med has left me with shaky, weak hands, still some dizziness and unable to work on patients. I am very anxious to discontinue it, instead of increasing the dosage when I have a seizure. (I am a dental hygienist, now doing office administration.) My memory and concentration abilities have been affected.

After reading your article, I have no doubt that my symptoms will improve dramatically. I would like to sue the pants off the FDA for allowing this to be marketed without warning labels. I'd have liked to have had the choice of putting my health and career in jeopardy. Thank you again for your very insightful article. You have put the light on at the end of my very long, frustrating tunnel!

Sincerely, K. Quigley, Maine, USA, kdzsquigley@aol.com

Conspiracy of Science?

In NEXUS 8/01 there is an interesting article, titled "Introduction to Applied Aether Energy Science", by Dr Robert Adams. The article is not easy to read, but I got the idea that Dr Adams was forced to give up any attempt to describe his ideas by the use of conventional, highly recondite mathematics, as required by modern theoretical scientists, particularly theoretical physicists.

Finally resorting to his own empirical findings, Dr Adams was able to invent his Adams Thermomotor-Generator, which can only be explained, he says, by the use of Tesla technology ("the skin effect"). In other words, according to Dr Adams, "one must eliminate the notion that electrons are the working gremlins of electrostatic energies". Cheers to Dr Adams. Someone finally has the guts to come out and say in print (thanks to NEXUS New Times) that modern theoretical physics has more holes in it than my screen door.

In my many attempts to find a professional physicist who might be interested in reading my alternative theories about the structure and behaviour of atoms, I got rejection after rejection from university professors who would not even take the time to look at my work. One professor responded in

a telephone conversation: "We get a lot of calls and mail from people who claim to have a new theory. Who do you think you are to question the experts, and why do you think there is a need to question quantum mechanics?"

One answered in a letter that he also had some reservations about quantum mechanics, but that he simply did not have the time to read my manuscript. Another responded that he did not have the time to read my manuscript and that he did not think that current physics needed any revisions, even though "there are obviously open problems". Still another said: "No one has time to examine new theories. They are all too busy writing grant proposals." Then he offered a quote, saying: "For every crackpot who turns out to be a genius, there are a thousand crackpots who will forever remain crackpots."

What they are saying to me might very well be true, but how can they know whether or not my theories are worthless unless they take a moment of their busy time to read my work? I would like to know if any of your readers has also experienced this problem and if anyone else thinks that there might be a professional conspiracy to keep outsiders outside.

Sincerely, Cecil Ross [author of *Logical Physics*, ISBN 0-9649888-1-X], Austin, Texas, USA, jross7@austin.rr.com

Homing in on Hormones

Dear Duncan: It has been almost two years since I departed Australia for the US to continue my lecture tour for my book, *Hormone Heresy*. Here's an update on my progress this year.

Hormone Heresy became a best-selling book in Canada and is in its second printing. It has also been translated into Italian. (Unfortunately, it is presently out of print in Australia.) I have been traversing North America as a popular keynote speaker as well as radio and TV guest, lecturing about the many myths and dangers of hormone treatments for women. It's been quite an exciting time.

More than ever, my message is vital—as the natural cycles of all women continue to be medicalised and pathologised. For instance, PMS is now labelled a medical

condition to be treated with Prozac, and women's menstrual cycles are deemed dangerous and unnecessary (*Time*, September 18, 2000). The cure is simple: just use a continuous low-dose Pill and reduce menstruation to only three or four times a year!

I can be contacted via golight@earthlink.net or www.ssellman.com, or at PO Box 690416, Tulsa, OK 74169, USA.

Best wishes, Sherrill Sellman

Whooping Cough Cover-up

I would like to reply to Donna who is concerned about her son contracting whooping cough.

My two-year-old daughter contracted whooping cough from a child I was babysitting at the time. This other girl, Lindsey, had just recently been vaccinated for whooping cough. In addition, Justine, my cousin's child, about four years of age, had also been vaccinated shortly before she contracted whooping cough. Lindsey and Justine do not know each other and contracted whooping cough from their respective vaccines.

My daughter, who has never been vaccinated, had a milder case and recovered sooner than either of the other girls. Both other girls were on antibiotics (several different types), which did not help at all. That tells me several things:

1) The vaccine does *not* protect your child.

2) Your child's natural immunity is better able to fight off the disease without antibiotics.

3) The milder, shorter version of whooping cough, which my daughter had, was preferable to the longer, harsher cases the other girls had.

4) Had I taken my child to the doctor (which I did not), she most likely would have been diagnosed as having "whooping cough" because she was not vaccinated. The other girls were officially diagnosed as having "croup", since they had been vaccinated. Just another way to cover up actual statistics, and fool the average person into believing that vaccines are safe.

By the way, when my two-year-old had whooping cough, her three-week-old sister never contracted it. There is a lot to be said for breastfeeding and the natural

... more Letters to the Editor

NB: Please keep letters to approx. 200 to 250 words in length. Ed.

immunity it gives. I believe that my second daughter has a lifetime immunity to whooping cough now, because of her exposure as an infant.

Sincerely, Tammy Mokma,
tmokma@juno.com (via
AVN@egroups.com)

Jehovah's Witnesses Spying

Duncan: Where do I start—apart from giving well-deserved praise for your nuggets of info in NEXUS? The varieties of subjects covered in your magazine are so thought-provoking, I never know which article to read first.

Here is my situation. For 18 years I was raised as a Jehovah's Witness and my family was a focal point in the southern England JW family. I was destined to follow my brothers' footsteps to missionaryhood...but I saw things going on that really made my hair stand on end.

It was almost like the JW's had their own covert ops. The 10–12 elders in each congregation actually carry out surveillance, catching out their own and others' spouses/partners in unbiblical actions. My father actually carried out some of these "snoops", as we call them (let me just add that they don't just knock on doors).

So I left this hub and went into a big, unknown, unexplained, scary world (I was taught at home and was in a total bubble for 18 years). After several years of letting my young wild heart and body loose on this "world", I was introduced to two friends of yours, one a Reiki master, and then your magazine came into my life...

What is beautiful about your mag is the non-commercialism of it (the black & white adds to this effect); it's down to Earth and not just full of the usual W.H. Smith magazine crap. For instance, the Promis article in 8/01: out of the blue to me, but now indelibly marked on my mind...

I'd just like to say thank you. You have touched my life, and now a lot of my young friends are ordering NEXUS from their local store as it has become top reading material in my house.

Thanks again, and lie low but shout loud!

Simon S., gingerninja@excite.com

Garlic is Bad for You!

First, I'd like to compliment you on your excellent publication. I've read most of your magazine articles and have supported many of your advertisers.

What I'd like to bring to your attention is an excerpt from an audiocassette tape which I received from Sota Instruments, Canada, when I ordered a "Magnetic Pulsar" from them. The reason I'd like you to follow up on this information is this: I have scoured the Internet for more information on the hazards of garlic and have come up with *nothing!* What I've done for you is transcribe (to the best of my ability) about four minutes of Bob Beck speaking about his research and findings on the subject of garlic and how bad it is for you.

My friends and I have given up garlic since we heard this tape a couple of years ago. I think this information is extremely valuable and that your magazine is the ideal forum. It is controversial, but very similar to the information you have presented on microwaved food, margarine, soy products, etc.

Sincerely, Len Fuller,
Washington, USA, gfps@sunshinecable.com

[Dear Len: Intriguing, especially given the respect that Dr Bob Beck holds. We have put your transcript into this issue's Global News, and I'll be most interested in feedback from readers. Ed.]

Weather Control over Serbia?

During the NATO military operations in Serbia in 1998, witnesses reported weird phenomena.

Weather during the last and the worst bombing campaign around Serbia was very strange. Huge black clouds materialised out of the blue sky, and stayed there until the end of the campaign, which was a couple of weeks. There was no rain falling from the clouds. What did fall on Belgrade was hailstone the size of eggs. You can still see the marks it left on houses.

During that time, witnesses describe strange "lightning" in the sky which lasted for hours but didn't look like anything anybody had seen before. The "thunder" that accompanied the strange "lightning" was equally strange. It

was hundreds of times stronger than any thunder anybody remembers. It was so loud, louder than the sound of bomb explosions. A couple of days before the capitulation of the Serbian Army was signed, a very strong earthquake struck Belgrade.

The weather cleared very soon after the bombing campaign was over. Since then, the climate in Serbia has changed considerably.

Serbia has experienced one of the worst droughts in its history. For the last two years, it's looked as if the rain and snow have been missing Serbia on purpose. Everywhere else around Serbia, the climate is still the same as it ever was. So we cannot talk about global warming or natural climatic changes, because the neighbouring countries to the west, east, north and south are not affected.

Last year, Serbia had eight months without a drop of rain. This continues even as we speak, as Serbia didn't get any snow this year. Even worse, the temperature at the moment is 19°C [66.2°F].

Last week [the first week of January], scientists in Serbia released a report which states that the electromagnetic field over Serbia has been punctured. The hole is almost the size of Serbia. It starts at the border between Kosovo and Albania in the south, and ends near the Yugoslav-Hungarian border in the north.

The reason for conducting the measuring was the strange behaviour of the cloud masses which twice a year come to the Balkans from Libya. Normally they would unload their cargo of water over the Balkans. In the last two years, however, they have hit the southern border of Kosovo and—as a river current flows around an island—the cloud masses have split and completely missed the Serbian territory, leaving an empty hole visible in the satellite pictures.

The first time the scientists noticed this phenomenon was on 28 December 2000. The cloud masses divided into a stronger eastern and weaker western stream and went around the Serbian territory. The same happened on 31 December, when the rain which would usually fall on Serbia went east and caused over 200 ml of rain per square metre to fall on the territories east of Kosovo.

All of this is about to cause possibly the worst drought ever to hit Serbia, and potentially a famine, as the crops will be destroyed if rain or snow doesn't fall in Serbia soon.

Could somebody help me find out if there was anything unusual happening in the electromagnetic world during the final days of the bombing of Serbia, which was in the [northern] summer of 1999? Also, does anybody have any indication that anything unusual happened with the Earth's electromagnetic field on 28 or 31 December 2000?

Yours, Goran Pavlovic, goran-pavlovic@eircom.net

Crop Circles & US Military?

Hello, Duncan: The crop circle photos in 7/06 are certainly thought-provoking, and the crop patterns unable to be done by any ground-bound human, much less in the short time they take to become apparent.

Discounting the attempts at communication by the inhabitants of the UFO phenomenon, it seems to me that a human agency based in the United States is the probable origin. We know that the USA has had many orbital launch missions concealed by a military secrecy ban in the past, and it would be quite easy for a bored ground station operator to use a series of paper-based geometric patterns in his transmitter to the stationary satellite above Europe and, with the particle beam type of weapon up there, turned to lower power and focused on the fields of England and Europe, it would be quite an easy thing to level crops in the fields.

Previous articles in NEXUS, in connection with the levelling of the government building in [Oklahoma City] not too many years ago, pointed the way to the use then of a type of particle beam used to shatter the building under the guise of an ammonium nitrate utility load being detonated by an ex-soldier of the army.

The continuing pattern of a circular layout, not square or rectangular, indicates a satellite transmitter with a circular beam, much like a domestic torch.

Keep up the good work.

Neil Hart, Queensland, Australia

GARLIC: TOXIC SHOCK!

[I am as surprised and shocked as you will be to hear such a respected scientist as Bob Beck telling us that garlic is highly toxic. See Letters this issue for background. Editor]

The reason garlic is so toxic, the sulphone hydroxyl ion penetrates the blood-brain barrier, just like DMSO, and is a specific poison for higher life-forms and brain cells. We discovered this, much to our horror, when I was the world's largest manufacturer of ethical EEG biofeedback equipment.

We'd have people come back from lunch that looked clinically dead on an encephalograph, which we used to calibrate their progress. "Well, what happened?" "Well, I went to an Italian restaurant and there was some garlic in my salad dressing!" So we had 'em sign things that they wouldn't touch garlic before classes or we were wasting their time, their money and my time.

I guess those of you who are pilots or have been in flight tests ... I was in flight test engineering in Doc Hallan's group in the 1950s. The flight surgeon would come around every month and remind all of us: "Don't you dare touch any garlic 72 hours before you fly one of our airplanes, because it'll double or triple your reaction time. You're three times slower than you



would be if you'd [not] had a few drops of garlic."

Well, we didn't know why for 20 years later, until I owned the Alpha-Metrics Corporation. We were building biofeedback equipment and found out that garlic totally desynchronises your brain waves.

So I funded a study at Stanford and, sure enough, they found that it's a poison. You can rub a clove of garlic on your foot—on the sole of your foot—and you can smell it shortly later on your wrists. So it penetrates the body. This is why DMSO smells a lot like garlic: that sulphone

hydroxyl ion penetrates all the barriers including the corpus callosum in the brain.

Any of you who are organic gardeners know that if you don't want to use DDT, garlic will kill anything in the way of insects.

Now, most people have heard most of their lives that garlic is good for you, and we put those people in the same class of ignorance as the mothers who at the turn of the century would buy morphine sulphate in the drugstore and give it to their babies to put 'em to sleep.

If you have any patients who have low-grade headaches or attention deficit [disorder], they can't quite focus on the computer in the afternoon, just do an experiment—you owe it to yourselves. Take those people off garlic and see how much better they get, very very shortly. And then let them eat a little garlic after about three weeks. They'll say: "My God, I had no idea that this was the cause of our problems." And this includes the de-skunked garlics, Kyolic, some of the other products.

Very unpopular, but I've got to tell you the truth.

(Source: From a lecture by Dr Robert [Bob] C. Beck, DSc., given at the Whole Life Expo, Seattle, WA, USA, in March 1996)

US SCIENTISTS PUT OESTROGEN & ULTRAVIOLET RADIATION ONTO CARCINOGEN LIST

The US National Toxicology Program advisory committee recently voted 8-1 that steroidal oestrogen—a type used in postmenopausal treatments and birth control pills—should be listed as a carcinogen because of its associations with endometrial cancer and breast cancer.

Another type of postmenopausal oestrogen, conjugated oestrogen, is already on the federal carcinogen list.

Doctors already know about the cancer link, and that's the reason why postmenopausal oestrogen is given together with another synthetic hormone, progestin; the combination lowers the risk of endometrial cancer.

The committee of scientists advises the NTP, a branch of the National Institutes of Health, which every two years updates the federal list of proven and suspected cancer-causing substances.

The panel also voted to add ultraviolet



radiation to the official carcinogen list.

UV radiation can damage the eyes and skin. It comes in three forms, ranging from the relatively long-wavelength UVA to the shortest wavelength UVC. UVA accounts for most of the solar UV radiation because it is not absorbed by the atmosphere. UVB is mostly absorbed by the ozone layer and UVC is totally absorbed.

(Source: Associated Press, Washington, DC, 18 December 2000)

POWER OF PRAYER TO FIGHT POWER OF THE CHURCH?

It is likely that the residents of Cesano, a northern suburb of Rome, have been praying for divine intervention in the face of increased cases of cancer.

It is reported that they are experiencing an incidence of tumours 30 per cent above the national average. This has resulted in 7,500 deaths over six years, leading to an official investigation.

It would appear that the culprit is the Vatican, which broadcasts all over the world from a forest of antennae at Santa Maria di Galera, near Cesano.

Vatican Radio's electromagnetic pollution, according to a separate enquiry by the Lazio region, is almost three times the legal limit. But reducing the radio emissions will not be easy. The Vatican's legal representatives argue that those who exercise Vatican activities are not punishable by Italian law, and the 1951 accord recognises the extra-territoriality of the radio transmitting complex.

It remains to be seen whether the prayers of local people will prove to be more powerful than the legal might of the Roman Catholic Church.

(Source: Life & Soul magazine, UK, no. 19, Summer 2000, www.lifeandsoul.com)

A THIRD-WORLD VIEW OF FIRST-WORLD DEMOCRACY

Imagine that we read of an election occurring anywhere in the Third World, in which the self-declared winner is the son of the former prime minister [or president], and that former prime minister [or president] is himself the former head of that nation's secret police (CIA).

• Imagine that the self-declared winner lost the popular vote but won based on some old colonial holdover (Electoral College) from the nation's pre-democracy past.

• Imagine that the self-declared winner's "victory" turned on disputed votes cast in a province governed by his brother.

• Imagine that the poorly drafted ballots of one district, a district heavily favouring the self-declared winner's opponent, led thousands of voters to vote for the wrong candidate.

• Imagine that members of that nation's most despised caste, fearing for their lives and livelihoods, turned out in record numbers to vote in near-universal opposition to the self-declared winner's candidacy.

• Imagine that hundreds of members of that most-despised caste were intercepted on their way to the polls by state police operating under the authority of the self-declared winner's brother.

• Imagine that six million people voted in the disputed province and that the self-declared winner's "lead" was only 327 votes—fewer, certainly, than the vote-counting machines' margin of error.

• Imagine that the self-declared winner and his political party opposed a more careful by-hand inspection and re-counting of the ballots in the disputed province or in its most hotly disputed district.

• Imagine that the self-declared winner, himself a governor of a major province, had the worst human rights record of any province in his nation and actually led the nation in executions.

• Imagine that a major campaign promise of the self-declared winner was to appoint like-minded human rights violators to lifetime positions on the High Court of that nation.

None of us would deem such an election to be representative of anything other than the self-declared winner's will-to-power. All of us, I imagine, would wearily turn the page, thinking that it was another sad tale of pitiful pre- or anti-democracy peoples in some strange country elsewhere.

(Source: Via Conspiracy-Theory@egroups.com, from an article circulating on the Internet, in which a Zimbabwe politician is quoted as saying that children should closely study events surrounding the recent US election, for they show that election fraud is not only a Third World phenomenon.)

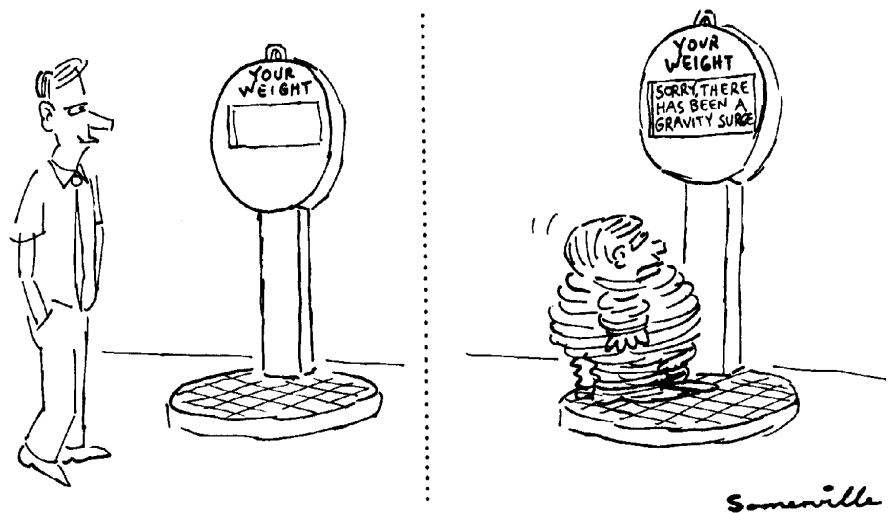
SINGAPORE TO PHASE-IN CASHLESS ECONOMY

It could prove to be the death-knell of I notes and coins. Singapore is to phase-in e-money and force all its businesses to accept it as legal tender by 2008.

Financial transactions will be made using money stored on computer chips. Cash will be superseded as money will change hands electronically via digital pulses transferred through mobile phones, hand-held computers and even watches.

A shopper will be able to point a mobile phone at an item to register the price. The phone would check the shopper's bank balance on the Internet and deduct the money from the account if it were told to buy the item. Singapore's government says the move will save a small fortune on the labour, security and transportation costs involved in making and moving notes and coins.

"The physical notes and coins will be a



... GLOBAL NEWS ...

thing of the past," said Low Siang Kok, currency director at Singapore's Board of Commissioners of Currency. "There's no point in fighting technology."

"If you want to give your kids pocket money, you pass it to them by phone. They can use it for bus fares, in the school cafeteria, or whatever. E-money will differ from credit or debit cards, which are commercial products issued by banks," he said, arguing that it would also be safer to carry around and could be protected by passwords, codes and other security features.

Singapore's government is a strong believer in e-commerce and is setting up a high-speed broadband Internet network to link all homes, schools, businesses and government offices electronically.

(Source: Metro, UK, 20 December 2000)

DOCTOR'S GROUP OPPOSES MANDATORY VACCINATIONS

Members of the Association of American Physicians and Surgeons (AAPS) passed a resolution at their 57th Annual Meeting in St Louis, calling for an end to government-mandated childhood vaccinations. It was passed without a single "no" vote. (The fact sheet outlining the resolution on mandated vaccines is posted at www.aapsonline.org.)

"Our children face the possibility of death or serious long-term adverse effects from mandated vaccines that aren't necessary or

that have very limited benefits," said Jane M. Orient, MD, the Executive Director of AAPS.

"This is not a vote against vaccines," said Dr Orient. "This resolution only attempts to halt blanket vaccine mandates by government agencies and school districts that give no consideration for the rights of the parents or the individual medical condition of the child."

Forty-two US states have mandatory vaccine policies, and many children are required to have 22 shots before first grade. On top of that, as a condition for school attendance, many school districts require vaccination for diseases such as hepatitis B, primarily an adult disease, yet children under 14 are three times more likely to suffer adverse effects (including death) following the hepatitis B vaccine than to catch the disease itself.

In late October, students in Utica, New York, were sent home from school and told they could not return until they'd received hepatitis B vaccinations. Further, parents were threatened by Child Protective Services with possible seizure of their children, based on "education neglect".

"It's obscene to threaten to seize a child just because his parents refuse medical treatment that is obviously unnecessary and perhaps even dangerous," said Dr Orient. "AAPS believes that parents, with the advice of their doctors, should make deci-

sions about their children's medical care—not government bureaucrats. This resolution affirms that position."

(Source: www.healthmall.com/newsletter.cfm, 2 November 2000)

VIRTUALLY REAL 3D IMAGING

Surgeons and designers could soon be manipulating 3D moving images floating in mid-air rather than on computer screens, say engineers at DERA, Britain's soon-to-be-privatised defence research laboratory. They say designers will be able to extend a car's bodywork just by waving a stylus, and almost instantly see what it looks like; or surgeons could twist a brain-scan around to locate an injury.

"We can create a real image floating in 3D space," says Chris Slinger, head of holography at the Defence Evaluation and Research Agency in Malvern, Worcestershire.

Working in a joint venture with the Ford Motor Company, DERA says it plans to have its first products based on advanced computer-generated holography (CGH) on the market in 2003.

Unlike other techniques, such as stereography or virtual reality, CGH doesn't require people to wear cumbersome headgear to see the image, and prolonged use doesn't lead to any ill effects. Users manipulate images using tools which exist partly as real objects and partly as virtual tools. It is like nothing else we have seen before, claims Slinger.

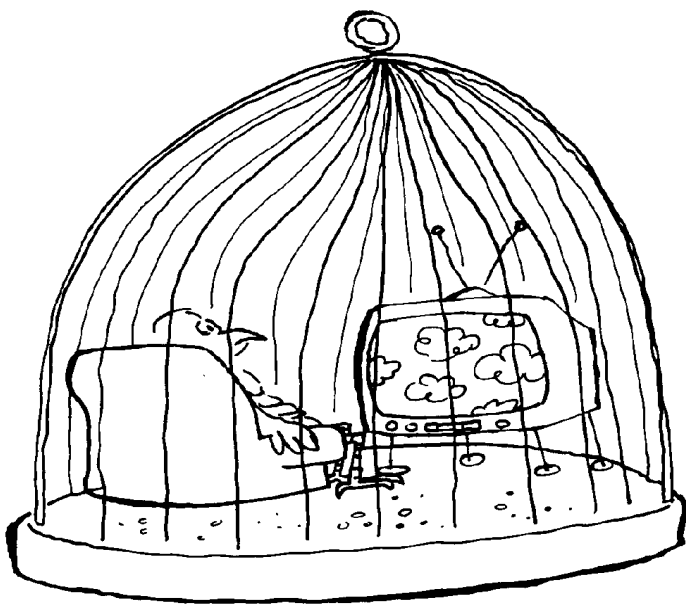
(Source: New Scientist, 16 December 2000, www.newscientist.com)

DNA-POWERED COMPUTERS TO REVOLUTIONISE INTERNET

Bell Laboratories says that artificial DNA, operating tiny computer processors 100,000 times smaller than the head of a pin, could revolutionise the Internet and e-commerce. The technology, still in its infancy, has the potential to speed up Internet processing and offer encryption devices so complex that they cannot be penetrated by hackers.

Speaking at *Gitex*, Hari Haran, vice-president and chief technical officer for Europe, the Middle East and Africa at Lucent Technologies and Bell Labs Innovations, said the new research had the potential to revolutionise computer technology.

"The artificial DNA is chemically created in a lab to mirror human DNA. The idea is to make the processors work more



Somerville

like a brain, which operates chemically. Because the processors' functions are caused by chemical rather than mechanical reactions, they can be far smaller than any other technology, which means we can use more of them and make them more powerful. The Internet we have today is nothing compared to the system we will have tomorrow," Mr Haran said.

(Source: Gulf News, Dubai, UAE, 31 October 2000, www.gulf-news.com)

RISK OF vCJD FROM BSE-INFECTED VACCINES

Questionable cattle products have gone into baby food, pet food, beauty preparations, health supplements and vaccines. Only last November, British health authorities withdrew supplies of polio vaccine after discovering they were cultivated from British bovine serum produced when BSE, or mad cow disease, was at its height. Eleven million children and travellers have received the oral vaccine. Vaccines against measles, mumps, rubella, diphtheria and whooping cough also were made from British-sourced bovine material until at least 1993.

The government said that the risk of contracting variant Creutzfeldt-Jakob disease from vaccine was "incalculably small", but this is not what was said by Sir Richard Southwood, author of the first major British mad cow investigation. He warned in an internal memorandum that the danger of infection from vaccines was "moderately high", and recommended that the removal of bovine material from vaccines should be a priority area for action.

Estimates of eventual deaths from Creutzfeldt-Jakob disease range from "several dozen", according to the French health secretary Dominique Gillot, to 250,000, as in a recent British Government study.

"We might be seeing an epidemic that involves hundreds of thousands of people," said John Collinge of the UK's advisory committee on spongiform encephalopathies. "Let's hope that is not the case, but it's still possible."

John Kent, a professor of statistics at Leeds University who has tried to quantify the crisis, said that the mathematical models were not to be trusted because scientists do not know how to determine what is an infectious dose and do not know how many people have eaten infected meat.

(Source: The International Herald Tribune, UK, 7 December 2000, www.ihf.com)

SECRET PLAN TO SPY ON ALL BRITISH PHONE CALLS & E-MAILS

Britain's intelligence services are seeking powers to seize all records of telephone calls, e-mails and Internet connections made by every person living in the UK. The document, circulated to Home Office officials and obtained by *The Observer*, reveals that MI5, MI6 and the police are demanding new legislation to log every phone call made in this country and store the information for seven years at a vast government-run "data warehouse" with a supercomputer that will hold the information.

The secret moves, which are expected to cost millions of pounds, have been condemned by politicians and campaigners as a sinister expansion of "Big Brother" state powers and a fundamental attack on the public's right to privacy.

"We are sympathetic to the need for greater powers to fight modern types of crime. But vast banks of information on every member of the public can quickly slip into the world of Big Brother," said Lord Cope, the Conservative peer and a leading expert on privacy issues.

Maurice Frankel, a leading campaigner on personal data issues, called the powers "sweeping" and a cause for worry.

The document, which is classified "Restricted", says new laws are needed to allow the intelligence services, Customs and Excise and the police access to telephone and computer records of every member of the public. It suggests that the Home Office is sympathetic to the new powers, which would be used to tackle the growing problems of cybercrime, the use of computers by paedophiles to run child pornography rings, as well as terrorism and international drug trafficking. When contacted by *The Observer*, the Home Office admitted that it was giving the plans serious consideration.

Every telephone call made and received by a member of the public, all e-mails sent and received and every web page looked at would be recorded. Calls made on mobile phones can already be pinpointed geographically, as can those made from land lines. The police would be able to use "trawling" computer techniques to look through millions of telephone and e-mail records. Campaigners say innocent people could have highly personal information accessed.

The document admits the moves are controversial and could clash with the Human Rights Act which gives people the right to privacy, with European Union law, and with the Data Protection Act which protects the public against official intrusion into private lives.

"A clear legislative framework needs to be agreed as a matter of urgency," says the document, which is dated 10 August 2000 and is thought to have been sent to Home Office Minister Charles Clarke.

"Why should data be retained?" it asks. "In the interests of justice, to preserve and protect data for use as evidence to establish proof of innocence or guilt. For intelligence- and evidence-gathering purposes, to maintain the effectiveness of UK law enforcement, intelligence and security agencies to protect society."

The document is written by Roger Gaspar, the Deputy Director-General of the National Criminal Intelligence Service (NCIS), the government agency which oversees criminal intelligence in the United Kingdom. Gaspar, as head of intelligence for NCIS, is one of the most powerful and influential men in the field. The report says it is written "on behalf of ACPO [the Association of Chief Police Officers], HM Customs and Excise, Security Service, Secret Intelligence Service and GCHQ [the Government's secret listening centre based at Cheltenham]".

Gaspar argues telephone companies should be ordered to retain all records of phone calls and Internet access. At the moment, many telephone and Internet service providers keep data for as little as 24 hours.

"In the interests of verifying the accuracy of data specifically provided for either intelligence or evidential purposes, CSPs [communication service providers such as telephone and Internet companies] should be under an obligation to retain the original data supplied for a period of seven years or for as long as the prosecuting authority directs," the document says.

"Informal discussions have taken place with the Office of the Data Protection Commissioner. Whilst they acknowledge that such communications data may be of value to the work of the agencies and the interests of justice, they have grave reservations about longer-term data retention."

The document says that the new data warehouse would be run along similar lines to the National DNA Database of profiles of known criminals.

A spokesman for NCIS refused to be drawn on the report. "I am not going to comment on a classified document that is in unauthorised hands," he said.

(Source: The Observer, London, 3 December 2000, www.observer.co.uk)

THE BUSH-CHENEY DRUG EMPIRE

The Bush family's involvement in drug-running is an open secret, but Dick Cheney's direct link to a global drug pipeline through a US construction company is less well known.

by Michael C. Ruppert

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FROM MEDELLIN TO MOSCOW WITH BROWN & ROOT

Halliburton Corporation's Brown & Root is one of the major components of the Bush-Cheney Drug Empire. The success of Bush Vice-Presidential running mate Richard Cheney at leading Halliburton, Inc. to a five-year, US\$3.8 billion "pig-out" on federal contracts and taxpayer-insured loans is only a partial indicator of what may happen, now that the Bush ticket has won the US presidential election.

A closer look at available research, including an August 2, 2000 report by the Center for Public Integrity (CPI) (www.public-i.org), suggests that drug money has played a role in the successes achieved by Halliburton under Cheney's tenure as CEO from 1995 to 2000. This is especially true for Halliburton's most famous subsidiary, heavy construction and oil giant Brown & Root. A deeper look into history reveals that Brown & Root's past—as well as the past of Dick Cheney himself—connects to the international drug trade on more than one occasion and in more than one way.

Last June, the lead Washington, DC, attorney for a major Russian oil company connected in law enforcement reports to heroin smuggling, and also a beneficiary of US-backed loans to pay for Brown & Root contracts in Russia, held a \$2.2 million fundraiser to fill the already bulging coffers of presidential candidate George W. Bush. This is not the first time that Brown & Root has been connected to illegal drugs, and the fact is that this "poster child" of American industry may also be a key player in Wall Street's efforts to maintain domination of the half-trillion-dollar-a-year global drug trade and its profits. And Dick Cheney, who has also come closer to illegal drugs than most suspect and who is also Halliburton's largest individual shareholder (\$45.5 million), has a vested interest in seeing to it that Brown & Root's successes continue.

Of all the American companies dealing directly with the US military and providing cover for CIA operations, few firms can match the global presence of this giant construction powerhouse which employs 20,000 people in more than 100 countries. Through its sister companies or joint ventures, Brown & Root can build offshore oil rigs, drill wells and construct and operate everything from harbours and pipelines to highways and nuclear reactors. It can train and arm security forces and it can now also feed, supply and house armies. One key beacon of Brown & Root's overwhelming appeal to agencies like the CIA is that, as it proudly announces from its own corporate web page, it has received the contract to dismantle ageing Russian nuclear-tipped ICBMs in their silos. Furthermore, the relationships between key institutions, players and the Bushes themselves suggest that under a George "W" Administration the Bush family and its allies, using Brown & Root as the operational interface, may well be able to control the drug trade all the way from Medellín to Moscow.

Originally formed as a heavy construction company to build dams, Brown & Root grew its operations via shrewd political contributions to Senate candidate Lyndon Johnson in 1948. Expanding into the building of oil platforms, military bases, ports, nuclear facilities, harbours and tunnels, Brown & Root virtually underwrote LBJ's political career. It prospered as a result, making billions on US Government contracts during the Vietnam War. The *Austin Chronicle*, in an August 28, 2000 Op-Ed piece entitled "The Candidate from Brown & Root", labels Republican Cheney as the political dispenser of Brown & Root's largesse. According to political campaign records, during Cheney's five-year tenure at Halliburton the company's political contributions more than doubled to \$1.2 million. Not surprisingly, most of that money went to Republican candidates.

Independent news service Newsmakingnews also describes how in 1998, with Cheney as Chairman, Halliburton spent \$8.1 billion to purchase oil industry equipment and

drilling supplier Dresser Industries. This made Halliburton a corporation that will have a presence in almost any future oil drilling operation anywhere in the world. And it also brought back into the family fold the company which had once (also in 1948) sent a plane to fetch the new Yale graduate George H.W. Bush to begin his career in the Texas oil business. Bush the elder's father, Prescott, served as a managing director for the firm that once owned Dresser: Brown Brothers Harriman.

BROWN & ROOT'S SPECIAL OPERATIONS

It is clear that everywhere there is oil there is Brown & Root. But increasingly, everywhere there is war or insurrection there is Brown & Root also. From Bosnia and Kosovo to Chechnya, Rwanda, Burma, Pakistan, Laos, Vietnam, Indonesia, Iran, Libya, Mexico and Colombia, Brown & Root's traditional operations have expanded from heavy construction to include the provision of logistical support for the US military. Now, instead of US Army quartermasters, the world is likely to see Brown & Root warehouses storing and managing everything from uniforms and rations to vehicles.

Dramatic expansion of Brown & Root's operations in Colombia also suggests Bush preparations for a war-inspired feeding frenzy as a part of "Plan Colombia". This is consistent with moves by former Bush Treasury Secretary Nicholas Brady to open a joint Colombian-American investment partnership called Corfinansura for the financing of major construction projects with the Colombian Antioquia Syndicate, headquartered in Medellín (see *FTW*, June 2000).

And expectations of a ground war in Colombia may explain why Brown & Root, in a 2000 Securities Exchange Commission (SEC) filing, reported that in addition to owning more than 800,000 square feet of warehouse space in Colombia, it also leases another 122,000 square feet. According to the Brown & Root Energy Services Group filing, the only other places where the company maintains warehouse space are in Mexico (525,000 square feet) and the United States (38,000 square feet).

According to the website of Colombia's Foreign Investment Promotion Agency, Brown & Root had no presence in the country until 1997. What does Brown & Root—which according to Associated Press (AP) has made more than \$2 billion supporting and supplying US troops—know about Colombia that the United States public does not? Why the need for almost a million square feet of warehouse space which can be transferred from one Brown & Root operation (energy services) to another (military support) with the stroke of a pen?

As described by AP, during the "Iran-Contra" era Congressman Dick Cheney of the House Intelligence Committee was a rabid supporter of Marine Lt Col. Oliver North. This was in spite of the fact that North had lied to Cheney in a private 1986 White House briefing. Oliver North's own diaries and subsequent investigations by the CIA Inspector-General have irrevocably tied him directly to cocaine smuggling during the 1980s and the opening of

bank accounts for one firm moving four tons of cocaine a month. This, however, did not stop Cheney from actively supporting North's (unsuccessful) 1994 run for the US Senate from Virginia—just a year before he took over the reins at Brown & Root's parent company, Dallas-based Halliburton, Inc., in 1995.

As the Bush Secretary of Defense during *Desert Shield/Desert Storm* (1990–91), Cheney also directed special operations involving Kurdish rebels in northern Iran. The Kurds' primary source of income for more than 50 years has been heroin smuggling from Afghanistan and Pakistan through Iran, Iraq and Turkey.

Having had some personal experience with Brown & Root, I noted carefully when the *Los Angeles Times* observed that on March 22, 1991 a group of gunmen burst into the Ankara, Turkey, offices of joint venture Vinnell, Brown & Root and assassinated retired Air Force Chief Master Sergeant John Gandy.

In March 1991, tens of thousands of Kurdish refugees, long-time assets of the CIA, were being massacred by Saddam Hussein in the wake of the Gulf War. Saddam, seeking to destroy any hopes of a successful Kurdish revolt, found it easy to kill thousands of the unwanted Kurds who had fled to the Turkish border seeking sanctuary. There, Turkish security forces—trained in part by the Vinnell, Brown & Root partnership—turned thousands of Kurds back into certain death.

Today, the Vinnell Corporation (a TRW company) is one of the three pre-eminent private mercenary corporations in the world, along with the firms MPRI and DynCorp (see *FTW*, June 2000). It is also the dominant entity for the training of security forces throughout the Middle East.

Not surprisingly, the Turkish border regions in question were the primary transshipment points for heroin produced in Afghanistan and Pakistan, destined for the markets of Europe.

A confidential source with intelligence experience in the region subsequently told me that the Kurds "got some payback against the folks that used to help them move their drugs". He openly acknowledged that Brown & Root and the Vinnell Corporation both routinely provided NOC (non-official cover) for CIA officers. But I already

It would be correct to say that there is a direct linkage of Brown & Root facilities—often set up in remote, hazardous regions—with every drug-producing region and every drug-consuming region in the world.

knew that.

From 1994 to 1999, during US military intervention in the Balkans—where, according to *The Christian Science Monitor* and *Jane's Intelligence Review*, the Kosovo Liberation Army (KLA) controls 70 per cent of the heroin entering Western Europe—Cheney's Brown & Root made billions of dollars supplying US troops from vast facilities in the region. Brown & Root support operations continue in Bosnia, Kosovo and Macedonia to this day.

Dick Cheney's footprints have come closer to drugs than one might suspect. The Center for Public Integrity's August 2000 report brought them even closer. It would be correct to say that there is a direct linkage of Brown & Root facilities—often set up in remote, hazardous regions—with every drug-producing region and every drug-consuming region in the world. These coincidences, in and of themselves, do not prove complicity in the trade. Other facts, however, lead inescapably in that direction.

A DIRECT DRUG LINK TO DICK CHENEY

The CPI report entitled "Cheney Led Halliburton to Feast at Federal Trough", written by veteran journalists Knut Royce and Nathaniel Heller, describes how, under five years of Cheney's leadership, Halliburton, largely through subsidiary Brown & Root, enjoyed \$3.8 billion in federal contracts and taxpayer-insured loans. The loans had been granted by the Export-Import Bank (EXIM) and the Overseas Private Investment Corporation (OPIC). According to Ralph McGehee's CIA Base, both institutions are heavily infiltrated by the CIA and routinely provide NOC to its officers.

One of those loans, to Russian financial/banking conglomerate

The Alfa Group of Companies, contained \$292 million to pay for Brown & Root's contract to refurbish a Siberian oil field owned by the Russian Tyumen Oil Company. The Alfa Group completed its 51 per cent acquisition of Tyumen Oil in what was allegedly a rigged bidding process in 1998. An official Russian Government report claims that The Alfa Group's top executives, oligarchs Mikhail Fridman and Pyotr Aven, "allegedly participated in the transit of drugs from Southeast Asia through Russia and into Europe". These same executives, Fridman and Aven, who reportedly smuggled the heroin in connection with Russia's Solntsevo mob family, were the same ones who applied for the EXIM loans that Halliburton's lobbying later safely secured. As a result, Brown & Root's work in Alfa Tyumen oil fields could continue—and expand.

After describing how organised criminal interests in The Alfa Group had allegedly stolen the oil field by fraud, the CPI story—using official reports from the FSB (the Russian equivalent of the FBI), oil companies such as BP-Amoco, former CIA and KGB officers and press accounts—then established a solid link to Alfa Tyumen and the transportation of heroin. In 1995, sacks of heroin disguised as sugar had been stolen from a rail container leased by Alfa Eko and sold in the Siberian town of Khabarovsk. A problem arose when many residents of the town became "intoxicated" or "poisoned".

The CPI story also stated: "The FSB report said that within days of the incident, Ministry of Internal Affairs (MVD) agents conducted raids of Alfa Eko buildings and found 'drugs and other compromising documentation'.

"Both reports claim that Alfa Bank has laundered drug funds from Russian and Colombian drug cartels.

"The FSB document claims that at the end of 1993, a top Alfa official met with Gilberto Rodriguez Orejuela, the now imprisoned financial mastermind of Colombia's notorious Cali cartel, 'to conclude an agreement about the transfer of money into the Alfa Bank from offshore zones such as the Bahamas, Gibraltar and others'. The plan was to insert it back into the Russian economy through the purchase of stock in Russian companies.

Under five years of Cheney's leadership, Halliburton, largely through subsidiary Brown & Root, enjoyed \$3.8 billion in federal contracts and taxpayer-insured loans.

"...He [the former KGB agent] reported that there was evidence 'regarding [Alfa Bank's] involvement with the money laundering of...Latin American drug cartels'."

It then becomes harder for Cheney and Halliburton to assert mere coincidence in all of this, as CPI reported that Tyumen's lead Washington attorney, James C. Langdon, Jr, at the firm of Aikin Gump, "...helped coordinate a \$2.2 million fundraiser for Bush this June. He then agreed to help recruit 100 lawyers and lobbyists in the capital to raise \$25,000 each for W's campaign."

The heroin mentioned in the CPI story originated in Laos, where longtime Bush allies and covert warriors Richard Armitage and retired CIA ADDO (Associate Deputy Director of

Operations) Ted Shackley have been repeatedly linked to the drug trade. It then made its way across Southeast Asia to Vietnam, probably the port of Haiphong. Then the heroin was shipped to Russia's Pacific port of Vladivostok, from where it was subsequently bounced across Siberia by rail and then by truck or rail to Europe, passing through the hands of Russian Mafia leaders in Chechnya and Azerbaijan. Chechnya and Azerbaijan are hotbeds of both armed conflict and oil exploration, and Brown & Root has operations all along this route.

As described in previous issues of *FTW*, this long, expensive and tortuous path was hastily established after President George Bush's personal envoy Richard Armitage, holding the rank of Ambassador, had travelled to the former Soviet Union to assist it with its "economic development" in 1989. The obstacles, then, to a more direct, profitable and efficient route from Afghanistan and Pakistan through Turkey into Europe were a cohesive Yugoslavian/Serbian Government controlling the Balkans and continuing instability in the Golden Crescent of Pakistan/Afghanistan. Also, there was no other way, using heroin from the Golden Triangle (Burma, Laos and Thailand), to deal with China and India but to go around them.



It is perhaps not by coincidence again that Cheney and Armitage share membership in the prestigious Aspen Institute, an exclusive bi-partisan research think-tank, and also in the US–Azerbaijan Chamber of Commerce. In November 1999, in what may be a portent of things to come, Armitage played the role of Secretary of Defense in a practical exercise at the Council on Foreign Relations, of which he and Cheney are both members.

Many of the longest-serving and best Bush apparatchiks like Richard Armitage and CIA veteran Ted Shackley have heavy political baggage. Since governmental power is so evenly split after the long election as to appear contrived, it is unlikely that controversial nominees for cabinet positions like Armitage or Shackley will be placed before a 50–50 Senate which is unlikely to confirm them. Armitage is more likely to appear as a quasi-official adviser in troubled European regions. This is similar to the roles he performed for George Bush in 1989 in Russia and in 1992 in Albania. Armitage's travels presaged both the Chechen and Kosovar conflicts and the rampant expansion of the drug trade through those regions.

DRUG PIPELINE STREAMLINED

The Clinton Administration took care of all that wasted travel for heroin with the 1999 destruction of Serbia and Kosovo and the installation of the KLA as a regional power. That opened a direct line from Afghanistan to Western Europe—and Brown & Root was right in the middle of that, too.

The Clinton skill at streamlining drug operations was described in detail in the April 2000 issue of *FTW* in a story entitled "The Democratic Party's Presidential Drug Money Pipeline". That article has since been reprinted in three countries. The essence of the drug economic lesson was that by growing opium in Colombia and by smuggling both cocaine and heroin from Colombia to New York City through the Dominican Republic and Puerto Rico (a virtual straight line), traditional smuggling routes could be shortened or even eliminated. This reduced both risk and cost, increased profits and eliminated competition.

FTW suspects the hand of Medellín cartel co-founder Carlos Lehder in this process, and it is interesting to note that Lehder, released from prison under Clinton in 1995, is now active in both

the Bahamas and South America. Lehder was known during the 1980s as "the genius of transportation". I can well imagine Dick Cheney, having witnessed the complete restructuring of the global drug trade in the last eight years, going to George W. and saying, "Look, I know how we can make it even better".

One thing is for certain. As quoted in the CPI article, one Halliburton vice-president noted that if the Bush–Cheney ticket were elected, "the company's government contracts would obviously go through the roof".

THE DARK PAST

In July 1977, this writer, then a Los Angeles Police officer, struggled to make sense of a world gone haywire. In a last-ditch effort to salvage a relationship with my fiancée, Nordica Theodora D'Orsay (Teddy), a CIA contract agent, I had travelled to New Orleans to find her. On a hastily arranged vacation,

secured with the blessing of my commanding officer, Captain Jesse Brewer of LAPD, I had gone on my own, unofficially, to avoid the scrutiny of LAPD's Organized Crime Intelligence Division (OCID).

Teddy had wanted me to join her operations from within the ranks of LAPD, starting in the late spring of 1976. I had refused to get involved with drugs in any way, and everything she mentioned seemed to involve either heroin or cocaine, along with the guns which she was always moving out of the country. The Director of the CIA

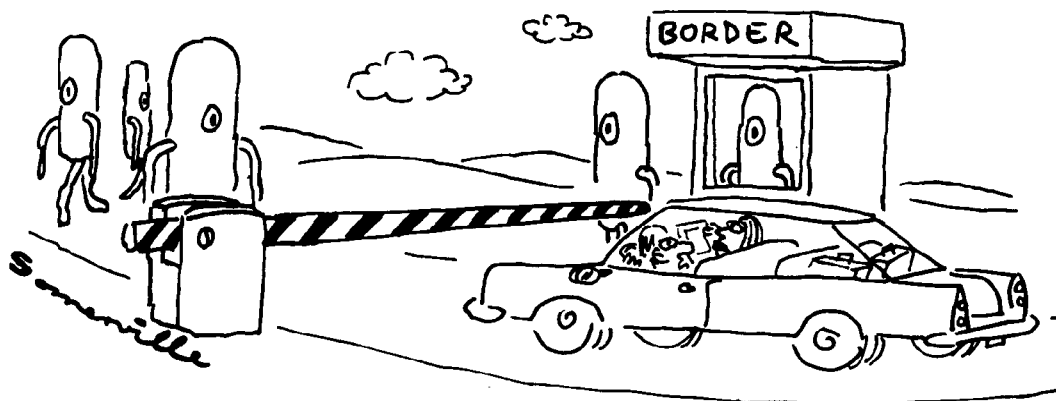
then was George Herbert Walker Bush.

Although officially on staff at the LAPD Academy at the time, I had been unofficially lent to OCID since January when Teddy, announcing the start of a new operation planned in the fall of 1976, suddenly disappeared. She left many people, including me, baffled and twisting in the breeze. The OCID detectives had been pressuring me hard for information about her and what I knew of her activities. It was information I could not give them. Hoping against hope that I would find some way to understand her involvement with CIA, LAPD, the royal family of Iran, the Mafia and drugs, I set out alone into eight days of Dantean revelations which have determined the course of my life from that day to this.

Arriving in New Orleans in early July 1977, I found Teddy living in an apartment across

the river in Gretna. Equipped with scrambler phones and night vision devices, and working from sealed communiqués delivered by navy and air force personnel from nearby Belle Chasse Naval Air Station, she was involved in something truly ugly. Teddy was arranging for large quantities of weapons to be loaded onto ships leaving for Iran. At the same time, she was working with Mafia associates of New Orleans Mafia boss Carlos

Armitage's travels presaged both the Chechen and Kosovar conflicts and the rampant expansion of the drug trade through those regions.



"I thought you said you knew how to read a map."

Marcello to coordinate the movement of service boats which were bringing large quantities of heroin into the city. The boats arrived at Marcello-controlled docks, unmolested by even the New Orleans police she introduced me to, along with divers, military men, former Green Berets and CIA personnel. The service boats were retrieving the heroin from oil rigs in the Gulf of Mexico, in international waters—oil rigs built and serviced by Brown & Root.

The guns which Teddy monitored, apparently Vietnam-era surplus AK47s and M16s, were being loaded onto ships also owned or leased by Brown & Root. And more than once during the eight days I spent in New Orleans, I met and ate at restaurants with Brown & Root employees who were boarding those ships and leaving for Iran within days. Once, while leaving a bar and apparently having asked the wrong question, I was shot at in an attempt to scare me off.

Disgusted and heartbroken at witnessing my fiancée and my government smuggling drugs, I ended the relationship. Returning home to LA, I made a clean breast and reported all the activity I had seen, including the connections to Brown & Root, to LAPD intelligence officers. They promptly told me that I was crazy.

Forced out of LAPD under threat of death at the end of 1978, I made complaints to LAPD's Internal Affairs Division and to the LA office of the FBI under the command of FBI SAC Ted Gunderson. I and my attorney wrote to the politicians, the Department of Justice and the CIA, and contacted the *Los Angeles Times*. The FBI and the LAPD said that I was crazy.

A 1981 two-part news story in the *Los Angeles Herald Examiner* revealed that the FBI had taken Teddy into custody and then released her before classifying their investigation without further action. Former New Orleans Crime Commissioner Aaron Cohen told reporter Randall Sullivan that he found my description of events perfectly plausible after his 30 years of studying Louisiana's organised crime operations.

To this day, a CIA report prepared as a result of my complaint remains classified and exempt from release, pursuant to executive order of the President, in the interests of national security and because it would reveal the identities of CIA agents.

On October 26, 1981, in the basement of the West Wing of the White House, I reported on what I had seen in New Orleans to my friend and UCLA classmate, Craig Fuller. Fuller went on to become Chief of Staff to Vice-President Bush from 1981 to 1985.

In 1982, then UCLA political science professor Paul Jabber filled in many of the pieces in my quest to understand what I had seen in New Orleans. He was qualified to do so because he had served as a CIA and State Department consultant to the Carter Administration.

Paul explained that, after a 1975 treaty between the Shah of Iran and Saddam Hussein of Iraq, the Shah had cut off all overt military support for Kurdish rebels fighting Saddam from the north of Iraq. In exchange, the Shah had gained access to the Shatt al'Arab waterway so that he could multiply his oil exports

and income. Not wanting to lose a valuable long-term asset in the Kurds, the CIA had then used Brown & Root—which operated in both countries and maintained port facilities in the Persian Gulf and near Shatt al'Arab—to rearm the Kurds. The whole operation had been financed with heroin. Paul was matter-of-fact about it.

In 1983, Paul Jabber left UCLA to become a Vice-President of Banker's Trust and Chairman of the Middle East Department of the Council on Foreign Relations.

THE WORLD'S BIGGEST FREE ENTERPRISE

If one is courageous enough to seek an "operating system" which theoretically explains what *FTW* has just described for you, one need look no further than a fabulous two-part article published in *Le Monde Diplomatique* in April 2000. The stories, focusing heavily on drug capital, are titled "Crime, The World's Biggest Free Enterprise". The brilliant and penetrating words of authors Christian de Brie and Jean de Maillard do a better job of explaining the actual world economic and political situation than anything I have ever read.

De Brie writes: "By allowing capital to flow unchecked from one end of the world to the other, globalisation and abandonment of sovereignty have together fostered the explosive growth of an outlaw financial market..."

"It is a coherent system closely linked to the expansion of modern capitalism and based on an association of three partners: governments, transnational corporations and mafias. Business is business: financial crime is first and foremost a market, thriving and structured, ruled by supply and demand.

"Big business complicity and political *laissez faire* is the only way that large-scale organised crime can launder and recycle the fabulous proceeds of its activities. And the transnationals need the support of governments and the neutrality of regulatory authorities in order to consolidate their positions, increase their profits, withstand and crush the competition, pull off the 'deal of the century' and finance their illicit operations. Politicians are directly involved and their ability to intervene depends on the backing and the funding that keep them in power. This collusion of interests is an essential part of the world economy, the oil that

"By allowing capital to flow unchecked from one end of the world to the other, globalisation and abandonment of sovereignty have together fostered the explosive growth of an outlaw financial market..."

keeps the wheels of capitalism turning."

After confronting CIA Director John Deutch on world television on November 15, 1996, I was interviewed by the staff of both the Senate and House Intelligence Committees. I prepared written testimony for Senate Intelligence which I submitted, although I was never called to testify. In every one of those interviews and in my written testimony and every lecture since that time, I have told the story of Brown & Root.

IN GOD (GOLD, OIL, DRUGS) WE TRUST

Make no mistake about it. The United States is preparing for war. Events immediately following the 2000 US election debacle are ominous predictors for the Bush-Cheney Administration. While not all of the cabinet posts are yet filled, the key posts of Treasury, Defense, Justice and National Security Advisor point to

the most militarised oil-and-big-business-friendly administration in 35 years.

So thorough is the plan for control of the government that the son of Secretary of State (Designate) Colin Powell, in an appointment which has yet to receive much notice, has been appointed the new Commissioner of the Federal Communications Commission. This is the body which monitors and polices all commercial broadcasting in the United States.

With Colin Powell as Secretary of State, Donald Rumsfeld as Secretary of Defense and Dick Cheney as Vice-President, the highest levels of the US Government now house two former Secretaries of Defense and the former Chairman of the Joint Chiefs of Staff. The new National Security Advisor, Condoleezza Rice, while African-American, has a long track record of service to Republican administrations and also sits on the board of directors of Chevron Oil, which has recently named an oil tanker after her. Her lacklustre operational credentials indicate that she will probably serve as the designated messenger between Bush, Powell, Rumsfeld and Cheney and as the African-American poster girl for coming military adventurism.

Of special interest as this story goes to press is the strongest rumour among my sources that current CIA Director George Tenet, appointed to the post by President Clinton in 1997, will remain in the new Bush Administration. Based upon this writer's study of CIA operations and history, this strongly suggests two things. Firstly, it implies that the CIA, as a non-partisan servant of Wall Street, feels that its interests have been—and will continue to be—well served by Tenet, who is well liked at Langley. Most importantly, however, it suggests that there are operations, both covert and otherwise, in motion under CIA control which are moving at a speed and with a force that will not accept a break in rhythm for a change in directors. Most critical among these would be the start of the planned conflict in Colombia.

Since the advent of the atomic bomb, the United States has always needed two kinds of enemies. On one level, it has needed a tactical enemy that it can go out and fight in the field in a shooting war. Since 1945, these enemies have been created and appeared as North Korea, North Vietnam, Grenada, El Salvador, Panama, Iraq and now Colombia. On another level, however, the US needs a strategic enemy that will justify outrageous expenditures of capital for strategic weapon systems like ICBMs, *Trident* submarines and "Star Wars" missile defence systems.

With the new Bush Administration already contemplating a policy change that would make Colombian rebels (as opposed to drug traffickers) the targets of US military aid, as has been reported by AP, there is no doubt where the next shooting war is going to be. And with the militarised Bush cabinet making a missile defence shield a priority, it looks as though either China or Russia will become the next big enemy of choice. In the end, profitability will decide. For the moment, the less-than-credible paper threat is from unspecified "rogue nations". We can be certain, however, that the shifting economic pressure plates around the world will reveal our next demon soon enough. Halliburton is uniquely placed to profit from either

As it was in Vietnam, Central America and Kosovo, drugs continue to be a huge part of the financial plan for prolonged ground wars.

As one cynic put it, "GOD" stands for "Gold, Oil and Drugs".

eventuality.

As it was in Vietnam, Central America and Kosovo, drugs continue to be a huge part of the financial plan for prolonged ground wars. As one cynic put it, "GOD" stands for "Gold, Oil and Drugs". We can be assured that an empire (as opposed to a republic) is emerging in the United States more quickly than many have expected. And the Bush Administration is already acting in a "godlike" manner. It is an empire that may have little need of even the pretence of democracy as American corporate fascism removes its mask in the wake of our election circus, the prostitution of our Supreme Court and the virtual destruction of American government as a servant of anything other than money, greed and power.

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FOOD IRRADIATION

— THE GLOBAL AGENDA —

Irradiated food has never been proved safe to eat, so we should wise-up when UN and government organisations, health authorities and transnational food corporations tell us that it is.

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WHAT'S ON THE MENU?

Time to eat breakfast, brought to you by the New World Order Food Company in the year 2005. First up, a bowl of Perkie Pops™, a sugar-laden cereal "fresh" from the cardboard box. The primary ingredients are genetically engineered corn, wheat and rice, with a few chemical additives thrown in to stop the oxidation of fats. The TV commercial says that Perkie Pops™ really is the best breakfast cereal, because the box is emblazoned with the Radura—the international symbol for radiation-treated food.

Top the Perkie Pops™ with some sliced, radiation-treated Sanitary Strawberries™ that have been sitting in the fruit bowl for three weeks. Pour on some cold-pasteurised Electro Moo Milk™. Still hungry? Then splash out with a glass of X-ray-treated Neutron Power Orange Juice™ while you sizzle that 21-day-old Triple T-bone™ with three times the meat and half the fat, thanks to some growth hormones and genetic manipulation. Make yourself a cup of tea, safe in the knowledge that it is free from any nasty bacteria because the tea leaves were bombarded with ionising radiation. And as for the water, rest easy! It was X-ray sterilised at the local water treatment plant.

For lunch, it's a Big Rad™, the convenient, ready-to-eat hamburger—the one with the freshness sealed in when it was made at the hamburger factory 24 months ago. It's been treated with radiation, too, and will last indefinitely on the pantry shelf. Just pop it in the microwave oven, nuke for 30 seconds and enjoy!

Don't forget to make a note to buy a kilo of Gray's Gourmet Chook Patties™ for dinner. They've been exposed to a radioactive source at Gamma Fire Power, the local food irradiator at the industrial estate just down the road, 200 metres from your children's school. Radiation-treated for 20 minutes, the Chook Patties are sure to be completely sterile and safe to eat. And don't forget Poppa's Perfect Round-up Potatoes™. They've been in the potato sack now for six months and still haven't sprouted! They're on the menu tonight, along with the Chook Patties. At the end of the day, indulge yourself with a glass of New Clear™, a fine wine made from radiation-treated grapes, bottled in a radiation-treated bottle and corked with a radiation-treated cork.

Does this sound unpalatable? Enough to make you sick? It's just a taste of what the nuclear industry, international organisations, government regulators and transnational food companies have in store for us.

Food irradiation is on the global agenda and, very soon, nations will be powerless to turn irradiated food away from their shores. Sovereign nations will be compelled to irradiate food to conform with international "standards" dictated by the organs of global governance.

This article investigates the global push to irradiate our food. The key questions addressed are: What is food irradiation? Who wants it and why? What are the effects of irradiation on our food? The article also examines what we, as concerned consumers, can do to say no to the nuclear massacre of our food.

WHAT HAPPENS IN AN IRRADIATION PLANT

Food irradiation is a technology which uses radioactive isotopes (nuclear waste) or a linear accelerator to create an amount of radiation equivalent to 10 million to 70 million chest X-rays. When the food item is zapped, the radiation initiates a complex sequence of reactions that literally rip apart the molecular structure of the food. This process creates new—and in some cases, unidentified—chemicals which have not been proved safe.

Vitamins and enzymes are destroyed, and fresh food becomes dead food.¹ Irradiated food has been described as "the food that would last forever", because the process is used to prolong shelf-life or to kill bacteria and insects.

Two of the most toxic and deadly substances known to humanity are used in the process of food irradiation. They are cobalt-60 (the more widely used) and caesium-137. Disposal of radioactive cobalt and caesium currently presents a considerable problem for the nuclear industry because of the quantities produced as wastes in nuclear power stations and the length of time they take to decay.²

The push for food irradiation has always come from the nuclear establishment, with the aim of extending the nuclear fuel cycle. The idea is to spread nuclear waste widely in many glorified nuclear dumps such as food irradiators, instead of a few large nuclear dumps that are running out of space. Start-up is always done with radioactive cobalt, with the real intention being to switch over to radioactive caesium.

At the heart of a food irradiation plant is a shiny rack of about 400 gamma-ray-emitting cobalt-60 rods about 18 inches (45.7 cm) long and the size of a fat crayon. This highly radioactive source is housed in a chamber surrounded by a concrete wall, six feet (1.83 m) thick. When not in use, the rack of cobalt-60 rods is submerged in a pool of cooled water, 15 feet (4.57 m) deep, which absorbs the gamma rays.

At the push of a button, hydraulic arms lift the cobalt rack out of its protective pool. Then tall metal boxes, packed with food destined for consumption, slide into the irradiation chamber on an overhead monorail. Boxes move in a zigzag pattern around the radioactive rack, ensuring gamma rays thoroughly penetrate the food.³ Treatment times vary: fresh strawberries take 5 to 8 minutes; frozen chicken takes as long as 20 minutes.

In modern food irradiators, food can be loaded into the irradiator on standard pallets. Once inside the irradiator, food receives the requisite radiation dose—the amount of radiation energy that is absorbed by the food inside the irradiation cell. The dose is now generally measured by a unit called the *gray* (Gy), but in earlier work the unit was called the *rad* (1 Gy = 100 rads).⁴

THE PROPONENTS OF FOOD IRRADIATION

Research into food irradiation started in the early years of the 20th century, and really took off after the Second World War when the US Army began to conduct intensive inquiries as part of President Eisenhower's "Atoms for Peace" program. The objective was to preserve food so that frontline troops could receive "fresh" food at all times. Most of the developed countries throughout the world conducted their own scientific research programs into the effects of radiation on food.

In the 1970s, a well organised and financed campaign emerged to press for food irradiation as an acceptable food manufacturing process.

The main players who have been shaping the agenda for food irradiation are members of the United Nations system of organisations, the transnational food companies and government regulators. Four key members of the UN "family" are spearheading the drive for food irradiation: the International Atomic Energy Agency, the Food and Agriculture Organization (FAO), the World

Health Organization (WHO) and the World Trade Organization (WTO).⁵

The FAO and the WHO argue that food irradiation is necessary to deal with the problems of world hunger and to reduce the incidence of food-borne diseases. The FAO says irradiation will reduce losses in storage by killing off pests and micro-organisms and thus help increase the year-round supply of "wholesome" food. The evidence for this claim is weak, and it can equally be argued that far more could be achieved by improving manufacturing practices and providing storage plants secure against the entry of rodents and pests than by using irradiation to kill those present in harvested foods.

WHO has been an enthusiastic supporter of food irradiation as a means of reducing food-borne disease. Many parts of the food chain have become completely contaminated with organisms such as salmonella, and the cost of decontaminating the whole process would be enormous. This is particularly true for poultry, for example. Through inaction, many countries have allowed the poultry production system to become contaminated with salmonella. This organism is endemic in the farm environment; it is present in the feedstocks and in the housing and transport systems used. Rather than attempt to introduce good manufacturing practices and ensure that the flocks are salmonella-free and kept that way, it appears to be easier to allow high levels of contamination to persist and then to irradiate the poultry to kill it all off.⁶

The 1970s saw the International Atomic Energy Agency (IAEA) hijack global food policy by joining forces with the FAO and the WHO. These three organisations formed the Joint Expert Committee on Food Irradiation (JECFI). Composed of scientists, JECFI was charged with investigating the "wholesomeness of irradiated food". The USA, Australia and India were among the countries represented on the committee.

In 1976 and again in 1980, JECFI concluded that the irradiation of any food commodity up to an overall average dose of up to 10 kilograys presents no toxicological hazard and no special nutritional or microbiological problems.⁷ This conclusion was reached despite the fact that there have never been comprehensive studies conducted on the long-term impacts of a diet of irradiated food.

In 1983, the JECFI conclusion was adopted as an international "standard" by the Codex Alimentarius Commission, a joint body of the FAO and WHO. The Codex is the vehicle for harmonising international rules for trade in food, making it easy for countries and companies to import and export food. By definition, the Codex opposes national and local restrictions, labelling and preferences.

Typically, consultants from transnational food companies and members from industry representative bodies are appointed to the national Codex committees. The Codex is currently headed by Tom Billy, Chief of the US Department of Agriculture's Food Safety and Inspection Service, the man in charge of deregulating the meat industry in the United States.⁸

The International Atomic Energy Agency coordinates the activities of the International Consultative Group on Food Irradiation (ICGFI), which currently has 39 members from governments using or interested in food irradiation.⁹ ICGFI promotes the use of irradiation through literature and by hosting seminars, holding



The Radura symbol

meetings and scheduling press conferences around the world which set out the purported advantages of irradiation.¹⁰

In 1997, the World Health Organization released a landmark media statement on food irradiation, declaring that "no ceiling should be set for food irradiated with doses greater than the currently recommended upper level of 10 kGy by the Codex Alimentarius Commission". According to the statement: "...the actual amount of ionising radiation applied is of secondary consideration ... one can go as high as 75 kGy, as has already been done in some countries, and the result is the same—food is safe and wholesome and nutritionally adequate ... given these reassuring conclusions, the World Health Organization hopes that food irradiation will now become more acceptable as a means for the improvement of food safety."¹¹

WHAT HAPPENS TO IRRADIATED FOOD

For all those worried souls who think they should replace their calorie counters with Geiger counters, forget it! The experts say irradiated food doesn't become radioactive, and irradiation is a completely safe process. Their conclusions about food irradiation are always expressed in terms of the benefits and safety of irradiated food. The uncertainties about safety never appear in the reports of international organisations advocating irradiation. If chemical changes are referred to at all, they are said to be "not significant" or similar to those produced in other food-processing techniques.

While many of the chemical changes are similar to those produced by other food-processing technologies, the quantities of chemicals produced are very different. When radiation strikes food or other material, it transfers its energy. This energy transfer can cause heating, as with microwave cooking. At a certain level, the radiation has sufficient energy to knock the electrons out of the atoms of the material being bombarded. The molecular structure of food is broken up when irradiated, and free radicals are formed. The free radicals can react with the food to create new chemical substances called *radiolytic products*. Some are known carcinogens, such as benzene in irradiated beef. Others are unique to the irradiation process.

Although irradiation can kill bacteria, it will not remove the toxins created by the bacteria in the first place. Increased production of aflatoxins following irradiation was first found in 1973¹² and confirmed in 1976 and 1978. Aflatoxins are powerful agents

for causing liver cancer. Vitamins A, C, D, E and K and some of the B vitamins, particularly B1, B2, B3, B6 and B12, are damaged by irradiation. The extent of vitamin loss depends upon the food and dose given. Fruit juices suffer more than fresh fruits, and these more than vegetables, grains and meat products.¹³

Irradiation converts nitrate to nitrite in a dose-dependent manner. Mutagenesis is directly proportional to nitrite concentration. Nitrite is a reactive molecule and reacts with nucleic acids and various amino acids in protein to form the known family of carcinogens referred to as the *nitrosamines*. These have been demonstrated to be potent carcinogens in humans.

The proponents of irradiation say that the process reduces the need for harmful food additives. (Interestingly, we have always been told that food additives are harmless.) However, the process of irradiation actually requires the use of *extra* food additives in order to control undesirable effects. Additives which may be used include sodium nitrite, sodium sulphite, ascorbic acid, BHA, BHT, potassium bromate, sodium tripolyphosphate, sodium chloride and glutathione.

Some foods, particularly milk and other dairy products, do not take well to irradiation. Terms such as "chalky", "scorched", "candle-like" and "burnt wool" have been used to describe the flavour and smell of irradiated milk, while irradiated meat is said to have a "wet dog smell". Irradiated fats have been described as "musty" or "nutty".¹⁴

The use of additives is not restricted to high-dose applications where obnoxious radiation flavours become pronounced, but can be used for low-dose uses to prevent discolouration and other undesirable effects such as bleeding and breakdown of fats in meat.

Other forms of radiation treatment for food are being developed. Consumers should be alerted to the treatment called *cold pasteurisation*, which uses electron beam technology to pasteurise milk and fruit juices.¹⁵ The use of X-rays instead of electron beams is also being investigated, and new accelerator technologies are being introduced commercially which allow electron beams to be converted to X-rays for greater penetration into foods.¹⁶

QUESTIONS OVER IRRADIATED FOOD SAFETY

The safety of a long-term diet of irradiated food has never been established. One study, often quoted in pro-irradiation literature

FOOD TREATED WITH RADIATION

Provided that irradiation is properly controlled, food should not become radioactive. However, ionising radiation with high energy can cause radioactivity to be created in the material that is bombarded. It is important, therefore, that only lower-energy ionising radiations are used in irradiation of food. If the radioactive source were damaged, food could become contaminated with radioactivity. Great care needs to be taken to prevent accidents at irradiation plants.

The following effects are produced when food is irradiated:

Radurisation – Low doses below 1 kGy: Sprouting of vegetables such as potatoes and onions can be inhibited so that they keep longer. Ripening of fruits can be delayed so that they keep longer and can be transported longer distances. Insect pests in grains, wheat, rice and spices can be killed.

Radication – Medium doses between 1 kGy and 10 kGy: The number of micro-organisms, such as yeasts, moulds and bacteria that lead to food spoilage, can be reduced so as to extend the life of foods and reduce the risk of food poisoning.

Radappertisation – High doses above 10 kGy. At these extremely large doses above 10 kGy, food can become completely sterilised of all bacteria and viruses. This can be used mainly for meat products, allowing them to be kept indefinitely.

(Source: T. Webb and T. Lang
[London Food Commission], *Food Irradiation: The Facts*,
Thorsons Publishing Group, UK, 1987)

but never sourced or referenced, was conducted in the early 1980s. The study, quoted by the IAEA in its brochure, "Facts About Food Irradiation",¹⁷ involved more than 400 "volunteers" who ate irradiated food for 7 to 15 weeks as part of eight separate studies in China. The volunteers reportedly showed "no more chromosomal abnormalities"—an early warning sign of cancer-causing activity—than those who ate non-irradiated foods.

Another study is quoted in the expert testimony to the US congressional hearings into food irradiation in June 1987.¹⁸ Cited by George L. Tritsch, PhD, cancer research scientist at Roswell Park Memorial Institute, New York State Department of Health, the study was conducted in 1975 and was originally documented in the *American Journal of Clinical Nutrition*.¹⁹ Indian researchers were concerned with the effects of irradiated food on malnourished people. They researched this with 10 children suffering from kwashiorkor, a severe lack of protein. The 10 children were divided into two groups of five. Before the trial started, blood samples were taken and examined as the starting point for each child. One group of five children was the control group, the other the experimental group. Diets were identical, except for the fact that wheat for the experimental group had been freshly irradiated with a dose of 0.75 kGy, the dose recommended for grain disinfection. After four weeks, blood samples were taken and four of the five children eating irradiated wheat showed gross chromosomal polyploidy with other abnormal cells also present.²⁰ After six weeks, blood samples were taken from the experimental group and a sharp increase in polyploid lymph cells was found compared to the level at four weeks. The control children showed no abnormal cells in their blood during the trial.

To protect the experimental group children from eventual harm, the researchers decided to halt the trial at this stage. They realised that freshly irradiated wheat could be problematic. Instead of the wheat being fed within two to three weeks of irradiation, it was first stored for 12 weeks before it was used in the diet of a new group of five children. This time, the polyploid cells showed up for the first time after six weeks. After the irradiated wheat had been withdrawn, it took 24 weeks before the blood of the children fed irradiated wheat reverted to normal and all abnormal cells had completely disappeared. Proponents of food irradiation have attempted to dismiss this study, since only a small number of individuals was involved.

Different doses of radiation produce different amounts of radiolytes and different kinds of chemical products. A vast number of new molecules can be formed from the irradiation of a single molecular species, to say nothing of a complicated mixture of food. Theory cannot predict the nature or number or quantity of the new compounds, which vary depending on the kind of food, the season and location in which it was produced.

In the 1970s, the US Food and Drug Administration (FDA) questioned the safety of radiolytic products and reviewed over 250 studies evaluating substances formed in irradiated foods, using data from a US Army research program. About 65 volatile substances were identified in irradiated foods (the FDA focused on volatile substances because they would likely be more toxic

than non-volatile substances). Twenty-three of the substances were also found in thermally processed (or cooked) foods and 36 in other non-irradiated foods. Only six could not be confirmed in the scientific literature as identical to substances found in foods, although they were similar to natural food constituents. Collectively, these six substances would be present in foods in the amount of three milligrams per kilogram—"like three drops of water in a swimming pool", according to the FDA, dismissing the problems in one fell swoop.²¹

WHAT'S IN STORE FOR US ALL

The pro-irradiation literature does not address the unknowns of food irradiation. Just as chemicals can cause cancer or genetic effects and it is best to assume there is no safe level of exposure to them, so too for radiation. Any exposure to chemicals or radiation can cause the initial damage that develops into a cancer.

Many and varied foods are being irradiated and marketed commercially in developed and developing countries. The ICGFI has been particularly active in promoting irradiation to developing countries. Bangladesh is irradiating dried fish, frozen fish and some cereal products. China has more than 60 irradiation facilities

treating a wide variety of foods including garlic, rice, spices and condiments, packaged foods, Sichuan sauce, fruits and meat. The quantities of irradiated products are in thousands of tonnes. Indonesia is irradiating dried spices, tuber and root crops, grains, dried fish and frozen foods both for test marketing and commercial purposes. In 1996, total quantities of irradiated products exceeded 6,000 tonnes. The Republic of Korea commercially irradiates spices, dried vegetable seasonings and ginseng products. An irradiation facility in Thailand irradiates nahm (fermented pork sausage), spices, seasonings, herbs

and crude enzymes for commercial purposes. Vietnam irradiates commercial quantities of tobacco for insect disinfection, in addition to some food such as onions and dried fish. India irradiates spices for commercial purposes. More commercial irradiation facilities are either planned or under construction in China, India, the Republic of Korea, Malaysia, Thailand and Vietnam.²²

In the United States, the FDA gave approval for the irradiation of red meat on 23 February 2000. The FDA has also approved irradiation for a variety of other foods, including fresh fruits and vegetables and spices. An FDA brochure, "Food Irradiation—A Safe Measure", published in January 2000, says the agency determined that the process is safe and effective in decreasing or eliminating harmful bacteria and states that irradiation also reduces spoilage bacteria, insects and parasites, and in certain fruits and vegetables it inhibits sprouting and delays ripening. For example, irradiated strawberries stay unspoiled for up to three weeks, versus three to five days for untreated berries.

The organisations which contributed to the content and printing of the FDA brochure were the American Meat Institute, the Department of Health and Human Services (US FDA), Food Marketing Institute, Grocery Manufacturers of America, National Cattlemen's Beef Association, National Food Processors Association and The American Dietetic Association.

Herbs, spices and vegetable seasonings are among the first

After four weeks, blood samples were taken and four of the five children eating irradiated wheat showed gross chromosomal polyploidy with other abnormal cells also present.

foods to be targeted for irradiation. Canada quickly approved them for irradiation,²³ and now Europe and countries such as Australia are waging similar pro-irradiation campaigns.

After a decade of debate, the European Parliament has issued a directive to create a legal framework for the single market for foodstuffs treated with ionising radiation. The implementing directive at this stage includes only one group of products—namely, dried aromatic herbs, spices and vegetable seasonings. The final list of foods to be irradiated is expected to be considered by the European Parliament this year.²⁴

In Australia, the company Steritech Pty Ltd has applied to the Australia New Zealand Food Authority (ANZFA) to irradiate herbs (fresh and dried, including garlic, onions and ginger), teas (including herbal teas), nuts and spices.²⁵ Australia had a moratorium on food irradiation in place until August 1999 when, together with decisions about genetically modified foods, the Australia New Zealand Food Standards Council slipped through the removal of the ban with no public debate whatsoever. ANZFA issued a detailed information package on irradiation to the media and placed it on its website on 6 August 1999, but little media reporting has ensued on the topic. ANZFA has invited public submissions regarding the Steritech's application, and, although the initial round of public "consultation" has already been held, a second round and consideration of a draft report will take place in February/March 2001 and a decision regarding Steritech's application will then be made. To make a submission, visit www.anzfa.gov.au or write to ANZFA, PO Box 7186, Canberra Mail Centre, ACT 2610.

Transnational food companies see the dollar signs before their eyes when it comes to irradiation. The extension of shelf-life and storage periods which food irradiation allows is attractive to the transnationals because it enables them to increase their profits by reducing wastage and to deliver products to the shops when it is economically advantageous to do so. It also enables them to transport exotic foods around the world more easily.

Leading representatives from transnational food companies and grocery manufacturing associations have stated their intention to use food irradiation as the process becomes more widely accepted. The Grocery Manufacturers of America website²⁶ quotes the President and Chief Executive Officer of ConAgra Inc., Bruce Rhode: "ConAgra stands ready to use irradiation technology once public acceptance of irradiation becomes stronger and when irradiation is commercially available." On the same website, Manly Molpus, President and Chief Executive Officer of Grocery Manufacturers of America, tells readers: "Irradiation is likely to be generally accepted by Americans and be as useful to their health and safety as pasteurisation was for milk a decade ago."

Getting consumers to

"generally accept" irradiation may be difficult. However, much of this "acceptance" will be forced upon sovereign nations under the provisions of the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures (SPM). This agreement is a global standard for food sanitation and sterilisation, and includes food irradiation as an acceptable treatment process. At present, governments can deny entry of any products into their country. However, under the terms of the SPM agreement, governments will be required to justify, on scientific grounds, why a particular product should be denied entry. With these considerations and with irradiation endorsed by regional plant protection organisations and international organisations such as the WHO and the FAO as a quarantine treatment for fresh agricultural produce, governments will find it extremely difficult, if not impossible, to deny the entry of food treated by irradiation.

The international symbol for radiation-treated food is the Radura—a round flower with two petals pictured inside a broken circle. The Radura is marketed as an emblem of quality. It was first used for South African and Dutch irradiated foods. The colour of the Radura emblem is green, which consumers may unconsciously associate with fresh, clean and environmentally safe produce. In reality, irradiated food may be old and stale, and irradiation facilities are far from environmentally friendly.

Although food may be marked "treated with irradiation" or show the Radura emblem, at present there is no way of knowing whether unlabelled food has been radiation-treated. Even the best regulations on labelling are of limited value unless they can be enforced.

Until a single test for detecting irradiated food is developed, and monitoring agencies are trained to use it, consumers will be at the mercy of food processors who are responsible for the labelling of irradiated food. None of the labelling presently requires the dose of radiation to be indicated, nor the number of times the product has been irradiated.

IRRADIATION ACCIDENTS

Decisions to irradiate food extend beyond the concerns of consumers. An irradiation facility in the local community means the presence of large quantities of radioactive material as well as

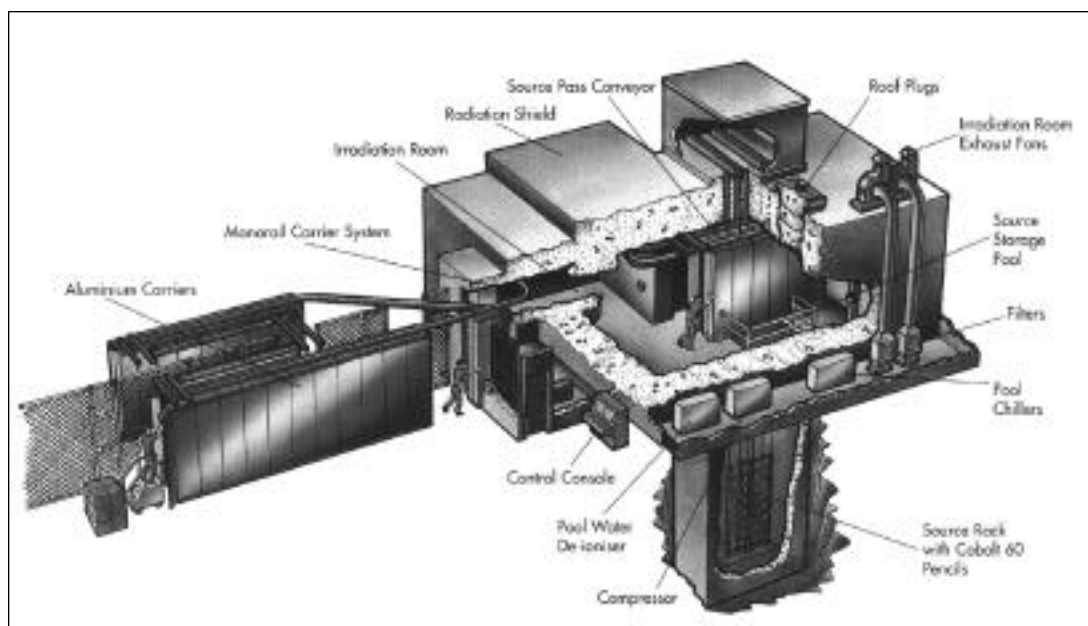


Diagram of a cobalt-60 irradiation facility (Source: Steritech Pty Ltd brochure)

transport of the radioactive material to and from the facility.

Since 1974, the US Nuclear Regulatory Commission has recorded 54 accidents at 132 irradiation facilities worldwide.²⁷ The IAEA has dismissed many of the accidents as "operational incidents". Some of the major accidents in the United States include:

- In 1991, a worker at a Maryland facility suffered critical injuries when exposed to ionising radiation from an electron-beam accelerator. The victim developed sores and blisters on his feet, face and scalp, and lost fingers on both hands.

- In 1988, Radiation Sterilizers, Inc. (RSI) in Decatur, Georgia, reported a leak of caesium-137 capsules into the water storage pool, which endangered workers and contaminated the facility. Workers then carried the radioactivity into their homes and cars. Seventy thousand medical supply containers and milk cartons were recalled because they had been contaminated by radiation.²⁸ Clean-up costs exceeded \$30 million, and taxpayers had to foot the bill.

- In 1986, the NRC revoked the licence of a Radiation Technology, Inc. (RTI) facility in New Jersey for 32 worker-safety violations, including throwing radioactive waste out with the garbage and bypassing a key safety device. As a result of this negligence, one worker received a near lethal dose of radiation.

- In 1982, an accident at International Nutronics in Dover, New Jersey, contaminated the plant and forced its closure. Radiation baths were being used to purify gems, chemicals, and medical and food supplies.

- In 1974, an Isomedix facility in New Jersey flushed radioactive water down toilets and contaminated pipes leading to sewers. Also that year, a worker received a dose of radiation considered lethal for 70 per cent of the population. Prompt hospital treatment saved his life.²⁹

A GLOWING FUTURE?

Irradiation of food is only part of the glowing future that international agencies, governments, corporations and the nuclear industry are investigating. There are many plans for the use of irradiation in other areas, such as soil sterilisation to eliminate weed seeds, insects and fungi.

Fortunately at present, existing technology cannot be applied to in-field agriculture, but it is now possible to irradiate bagged potting soils and similar products. The irradiation sanitisation of reusable greenhouse materials (pots, growing substrates, etc.) is currently done on contract for the greenhouse industry by irradiation companies in The Netherlands. Also, in several countries, various imported products are irradiated to control weed seeds that might inadvertently be present (such as in wild bird seed).

Many products which we use in our daily lives have been irradiated. Medical disposable supplies, cotton balls, contact lens solution, make-up, wine corks and wine cask bladders, bottles and plastic containers, feminine hygiene products, beehives (minus the bees) and packaging materials are just some of the products routinely irradiated for sanitation purposes. As there are no labelling requirements for non-food items, consumers are left in the dark as to which products have been radiation-treated and what dose has been used.

There are several steps we can all take to avoid irradiated foods. Try to buy locally grown produce and avoid imported foods

which may have been irradiated. In some countries, wheat, potatoes, onions and seafood may have been irradiated on a commercial scale, but processed foods manufactured from these ingredients are not labelled with regard to the irradiated ingredients.³⁰ Support organic farming producers and buy traditionally prepared foods rather than mass-produced foods. Lobby governments to ensure that irradiated food components and food packaging are also declared on food labels.³¹ Write to or e-mail supermarkets, food corporations and food manufacturers to tell them you will not buy irradiated food. Write letters to the editor of your local and national newspapers and phone talkback radio shows about food irradiation. Convene public meetings and discussion groups. Grow a food garden in your own backyard. If you grow it, you know it!

In its brochure, "Facts about Food Irradiation", the International Atomic Energy Agency says: "The view that consumers are opposed to buying irradiated food cannot be substantiated."³² This outrageous statement must be challenged. We must become vocal

opponents of the pro-irradiation lobby and its powerful propaganda. The public needs more information than just to be told that irradiated food is "safe". The public needs to know the scientific uncertainty that underlies statements from so-called expert organisations.

Homes without kitchens, houses without gardens, grocery shopping via the Internet...every day we become further removed from our food and more dependent upon others to provide this basic requirement. Unless we reclaim responsibility for

our own food and work towards food self-sufficiency as opposed to food security, *our* future is in *their* hands.

None of the labelling presently requires the dose of radiation to be indicated, nor the number of times the product has been irradiated.

Endnotes

1. See www.dkp-ml.dk/netactivist/food_E5.htm.
2. Cobalt-60 is the most widely used radiation source for food irradiation. However, US company GrayStar is developing a prototype irradiator which will generate gamma rays using caesium-137, which GrayStar would chemically separate from high-level nuclear waste. The prototype machine, 10 feet wide by 8 feet long and 28 feet high (3 x 2.4 x 8.5 metres), is designed to be installed alongside a meat packaging or food processing line.
3. Skerrett, P.J., "Food Irradiation: Will It Keep the Doctor Away?", *Technology Review*, www.techreview.com/articles/nd97/skerrett.html.
4. Webb, T. and Lang, T. (London Food Commission), *Food Irradiation: The Facts*, Thorsons Publishing Group, UK, 1987.
5. The UN lists the WTO and also the IMF and World Bank as members of the United Nations System of Organizations.
6. For an in-depth exposé of America's meat industry, read Gail Eisnitz's book, *Slaughterhouse: The Shocking Story of Greed, Neglect, and Inhumane Treatment inside the US Meat Industry* (Prometheus Books, 1997). *Slaughterhouse* documents the meat industry's heavy use of toxic chemicals, drugs, steroids, hormones and rendered animal protein (animal cannibalism). Problems of toxic sewage and industrial sludge, genetic engineering, raw manure (as low-cost feed for animals), and other questionable practices are also covered in the book. For details, see www.hfa.org/slaughterhouse.htm.
7. World Health Organization, "The Wholesomeness of Irradiated Food", Report of the Joint FAO/IAEA/WHO Expert Committee, Geneva, 1977 and 1981, WHO Technical Report Series, Nos 604 and 659.
8. For further details on the Codex, see www.purefood.org/irrad/codexfaq.cfm.
9. ICGFI members are: Australia, Argentina, Bangladesh, Belgium, Brazil, Bulgaria, Canada, Chile, People's Republic of China, Costa Rica, Côte d'Ivoire, Croatia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Ghana, Greece, Hungary, India, Indonesia, Iraq, Israel, Italy, Republic of Korea, Malaysia, Mexico, Morocco, The Netherlands, New Zealand, Pakistan, Peru, The Philippines, Poland, Portugal, South Africa, Syrian Arab Republic, Thailand, Tunisia, Turkey, Ukraine, United Kingdom, United States of America, Vietnam and Yugoslavia.

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THE HUMAN COST OF ANIMAL EXPERIMENTS

There is strong scientific evidence that animal-based testing is grossly inaccurate in evaluating how a drug or product will affect humans, and is a grave risk to the health and safety of people and animals alike.

by Katrina Fox © 2000

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THE SCIENTIFIC EVIDENCE AGAINST VIVISECTION

Graphic pictures of cats with electrodes clamped to their heads, or monkeys strapped to chairs with their brains cut open, their eyes filled with pain and terror, are enough to upset momentarily even the most hardened person. But most of us put these images out of our mind and accept the situation, because we're told by the government and medical establishment that such experiments are for our own good. They insist that without these procedures there will never be cures for the world's diseases, and that those who oppose animal experiments are extremists holding back "progress".

Yet, despite the supposed stringency of animal tests on drugs deemed safe for human consumption and released onto the market, two million Americans become seriously ill and approximately 100,000 people die every year because of reactions to medicines they were prescribed.¹ This figure exceeds the number of deaths from all illegal drugs combined, at an annual cost to the public of more than US\$136 billion in health care expenses.² In England, an estimated 70,000 deaths and cases of severe disability occur each year because of adverse reactions to prescription drugs, making this the third most common cause of death (after heart attack and stroke).³

The drug company Ciba-Geigy has estimated that only five per cent of chemicals found safe and effective in animal tests actually reach the market as prescription drugs.⁴ Even so, during 1976 to 1985 the US Food and Drug Administration (FDA) approved 209 new compounds—102 of which were either withdrawn or relabelled because of severe unpredicted side-effects including heart attacks, kidney failure, liver failure and stroke.⁵

The animal rights movement has lobbied for years against animal experimentation on moral and ethical grounds, but the scientific evidence against vivisection is far stronger. Researchers who put their careers on the line and publicly admit that animal-based models are inaccurate for evaluating the effects of drugs in humans are encouraged or forced to be silent in a billion-dollar industry.

Two such researchers are Dr Ray Greek, an American anaesthesiologist, and his wife, Jean Swingle Greek, a veterinary dermatologist. Both are ex-vivisectionists who have studied medical and scientific literature which is largely unavailable and inscrutable to the public. Using the industry's own data, they expose in their new book, *Sacred Cows and Golden Geese: The Human Cost of Animal Experimentation*, how we are kept in the dark about the dangers to our health from animal experiments.

WHY ANIMAL MODELS ARE NOT PREDICTIVE

Open up a rat, a dog, a pig and a human and you will find much the same terrain, but with differences. But it is precisely these differences which have an impact when it comes to assimilating drugs. For example, rats, the species most commonly used in vivisection, have no gall bladder and excrete bile very effectively.

"Many drugs are excreted via bile, so this affects the half-life of the drug," explain Ray and Jean Greek. "Drugs bind to rat plasma much less efficiently. Rats always breathe through the nose. Because some chemicals are absorbed in the nose, some are filtered. So rats get a different mix of substances entering their systems. Also, they are nocturnal. Their gut flora are in a different location. Their skin has different absorptive properties than that of humans. Any one of these discrepancies will alter drug metabolism."

These differences are only on a gross level. Medications act on a microscopic level, initiating or interrupting chemical reactions that are far too small for the human eye to observe.

UNSAFE FOR HUMANS

The following, taken from Dr Ray and Jean Greek's book, are just some examples of pharmaceutical drugs which have been deemed safe for human use after extensive animal testing, but which were later found to cause serious side effects.

- **Amrinone:** Use of this drug for treating heart failure led to 20 per cent of patients developing thrombocytopenia (a lack of blood cells needed for clotting), despite a comprehensive program of animal studies in mice, rats, hamsters, guinea pigs, dogs and rhesus monkeys. Some of these patients died.
- **Birth control pills:** These are known to cause life-threatening blood clots in some women, yet scientists have still not been able to reproduce this finding in animals. In fact, dog testing predicted that the pill would decrease the likelihood of clotting.
- **Chloramphenicol:** This antibiotic caused life-threatening anaemia in humans. Chloramphenicol is an example of a drug whose effects vary from species to species: dogs do well with it, cats die from it, cows tolerate it but horses do not. It is so toxic to susceptible humans that its use has been outlawed in animals used for food. The tiny amount consumed from ingesting a hamburger made from a treated cow will cause death in such a person unless they receive a bone marrow transplant.
- **Clioquinol:** This anti-diarrhoeal passed tests in rats, cats, dogs and rabbits. It was pulled off the shelves all over the world in 1982 after it was found to cause blindness and paralysis in humans.
- **Diethylstilbestrol:** This synthetic oestrogen was designed to prevent miscarriage, but it did just the opposite by increasing the rate of spontaneous abortions, premature births and neo-natal deaths. No human trials were done; all the safety data were collected from animals.
- **Eraldin:** This heart drug was withdrawn in 1975 after causing serious side effects in an estimated 7,000 victims, 23 of whom died. It had been tested for six years in mice, rats, dogs and monkeys and when introduced on the market was "particularly notable for the thoroughness with which its toxicity was studied in animals, to the satisfaction of the authorities".¹⁰ Even long after the drug was withdrawn, scientists failed to reproduce these results in animals.
- **Floxin:** This antibiotic progressed through animal testing, only to cause seizures and psychosis when used by humans.
- **Isuprel:** A medication used to treat asthma, it proved devastatingly toxic to humans in the amounts recommended based on animal studies. In Great Britain alone, 3,500 asthmatics died from using the medication.
- **Manoplax:** This heart drug, which had been tested on rats, mice, rabbits, cats and guinea-pigs, was withdrawn worldwide in 1993 after analysis of patients showed that those taking it were at increased risk of hospitalisation and/or death.
- **Methysergide:** This treatment for migraine led to severe scarring of the heart, kidneys and blood vessels in the abdomen, although scientists have been unable to reproduce these effects in animals.
- **Open:** This treatment for rheumatism and arthritis killed 61 people and caused 3,500 adverse reactions. Withdrawn in 1982, the drug had been tested on monkeys and other animals for nine years with no adverse side effects.
- **Phenylpropanolamine (PPA):** This drug, found in many common cold and flu remedies, was banned by the FDA in the US after it was linked to causing between 200 and 500 strokes in young women a year.
- **Primacor:** This medication, given when the heart is not pumping enough blood, worked well in rats but increased deaths in humans by 30 per cent.
- **Ritodrine:** This drug, prescribed to avert premature labour, induced pulmonary oedema (fluid in the lungs, causing breathing difficulties and possibly death).
- **Suprofen:** This arthritis drug was withdrawn from the market when patients suffered kidney toxicity. Prior to its release, researchers said this about the animal tests: "...excellent safety profile. No...cardiac, renal [kidney] or central nervous system [side effects] in any species."¹¹
- **Tamoxifen:** This drug, used to treat and prevent breast cancer in women, caused liver tumours in rats but not in mice or hamsters.¹² The drug has been shown to be harmless to the developing foetus of rabbits and monkeys, but to cause bone abnormalities in rat foetuses.¹³ One of the side effects is nausea and vomiting, but this was not predicted in animal studies, even though high doses were tested in dogs—the species considered most predictive of vomiting in humans.¹⁴ The drug has also been implicated in uterine cancer, blood clots, memory loss, absence of periods, and eye damage such as cataracts.¹⁵
- **Zomax:** This arthritis drug killed 14 people and caused many more to suffer.

"We differ on the cellular level and molecular level and, importantly, that is where disease occurs," the authors explain. "The cells of chimps are very similar to [the cells of] humans, but the spatial organisation of the cells is vastly different."

Even those who favour the animal model admit its unpredictability among their peers.

Dr Ralph Heywood, director of Huntingdon Research Center in the United States, says: "The best guess for the correlation of adverse reactions in man and animal toxicity data is somewhere between five and 25 per cent."⁶

Dr Herbert Hensel, Director of the Institute of Physiology at Marburg University, goes further: "In the opinion of leading biostatisticians, it is not possible to transfer the probability predictions from animals to humans... At present, therefore, there exists no possibility at all of a scientifically based prediction. In this respect, the situation is even less favourable than a game of chance."⁷

Even the most widely respected textbook on animal experimentation states: "Uncritical reliance on the results of animal tests can be dangerously misleading and has cost the health and lives of tens of thousands of humans."⁸

The best-known example of this is thalidomide. Mothers who took this drug to ameliorate morning sickness gave birth to children with shocking deformities, with most lacking developed limbs. Animal tests had not predicted this. The first recorded case of side effects occurred on Christmas Day 1956, but in 1957 the drug was released anyway.⁹

QUESTIONABLE ACCURACY OF TOXICITY TESTS

One of the reasons why so many drugs cause adverse reactions in humans—reactions which were not predicted in animals—is because of the inaccuracy of the toxicity tests carried out.

The most notorious of these is the LD50 Draize test ("LD50" stands for "Lethal Dose 50 per cent"), where animals—usually dogs and rats—are force-fed, forced to inhale or are injected with a chemical until 50 per cent of them die. That dosage is then designated as the LD50. Its unreliability is obvious when we consider the huge variables such as the age, weight and gender of the animals, not to mention the environmental conditions under which the test takes place. These variables render the results invalid even for the species tested, let alone for humans.

The LD50 test was still part of almost all

regulatory guidelines for the safety assessment of chemicals worldwide until 10 years ago. In the United States, although the FDA no longer requires the test and will accept *in vitro* and other non-animal-based alternatives, it still accepts the LD50—so the testing continues.

In November 2000, the Organisation for Economic Co-Operation and Development (OECD), which comprises 29 member countries, agreed to abolish the LD50 test and phase it out during 2001.¹⁶ But the alternatives which will take its place are merely a refinement of the original; they still involve the use of animals and therefore are still wholly unreliable indicators for human health.

In the United States, the Voluntary Children's Health Chemical Testing Program is being developed by the Environmental Protection Agency (EPA), and it involves extensive animal testing to determine the "safe" amount of toxic poisons to which children can be exposed.

WHAT DOESN'T WORK FOR ANIMALS MAY WORK FOR HUMANS

As well as animal tests allowing unsafe drugs onto the market, the flip side is that human health is also compromised when drugs which may be beneficial to humans are prevented from being released. Most drugs have side effects, some of which are more acute than others, but many useful medications used to save lives would not have reached clinical trials if they had first been tested on animals.

We only have to look in our own medicine cabinets for examples. Today, around 29 billion aspirin per year are sold in the United States and twice that number worldwide, yet aspirin causes birth defects in mice and rats and results in such extensive blood abnormalities in cats that they can only take 20 per cent of the human dosage every third day.²⁰ Another painkiller, ibuprofen, causes kidney failure in dogs, even at low doses.

Other prescription drugs were initially unavailable to people because animal studies predicted side effects not found in humans. They include:

- **Corticosteroids:** These have been shown to cause cancer in some rodents, despite their being used safely by humans for years.
- **Depo-Provera:** This contraceptive was barred from release in the US in 1973 because it caused cancer in dogs and baboons.
- **FK506:** This anti-rejection drug was almost shelved before it proceeded to clinical trials. After experimenting on dogs, researchers said animal toxicity was too severe to proceed to the clinical trial stage.
- **Furosemide:** Mice, rats and hamsters suffer liver damage from this diuretic, but humans do not. It is widely prescribed for the treatment of high blood pressure and heart disease.
- **Isoniazid:** This medication, commonly used for treating tuberculosis, caused cancer in animals.
- **Penicillin:** The release of penicillin was delayed when its discoverer, Alexander Fleming, put it to one side because it did not work in rabbits. This is because rabbits excrete penicillin in their urine. Only when Fleming had a sick human patient and nothing else to try, did he administer penicillin—with excellent results.

• **Prilosec:** The release of this gastrointestinal medication was delayed for 12 years because of an effect in animals which did not occur in humans.

• **Streptomycin:** This popular antibiotic caused birth defects such as limb malformations in the offspring of rats.

THE CANCER WAR

According to Dr Ray and Jean Swingle Greek, 40 per cent of Aus will have a diagnosis of cancer at some time in our lives. It is the one disease which most of us will have had some encounter with, whether personally or through contact with friends or family. But despite billions of dollars poured into "cancer research", the medical establishment is not winning its war against the Big C. Deaths from the disease are increasing; for example, from 1973 to 1992 they went up by 6.3 per cent in the United States.

The Greeks reveal in their book that despite thousands of substances being fed to, painted on and injected into hundreds of millions of animals, we are no closer to saving lives. "In many cases, it [animal experimentation] has actually led to more life loss and introduced new dangers," they argue.

There are more than 200 different forms of human cancer. Some of these have counterparts in animals, although even these differ greatly from those in humans in terms of cause, effect, treatment and prognosis. An histiocytoma is fatal in humans but benign in dogs, as all cancers have species-specific effects.

Ironically, in the 1950s the only known carcinogens were those found by studying humans epidemiologically, the authors explain. "A study of dyeworkers showed a high incidence of bladder cancer," they write. "Droves of dyed lab animals failed to prove the rule. Chromium was found to be carcinogenic in humans but not in animals. The link between radiation and cancer was also reported from clinical studies by that time. In 1956, British doctors warned of carcinogenic

effects of X-rays given during pregnancy, resulting in childhood cancers. But no amount of irradiated pregnant quadrupeds necessarily produced the same effect.

"In these instances and many others, the inability to validate carcinogenicity in animals kept cancer-causing agents legal for a much longer time."

Asbestos is another example. The link between cancer and asbestos was made as long ago as 1907; but, after scientists failed to induce the disease in animals, it took more than 30 years before the human-model evidence became irrefutable.

Ray and Jean Greek point out that, between 1970 and 1985, researchers subjected an estimated 300 to 400 million animals to more than half a million compounds to check for anticancer effects. Based on these animal experiments, only 80 compounds progressed to clinical trials. Just 24 proved to have any anticancer activity in humans, and, of these, 12 went on to have a substantial role in chemotherapy. But, all 12 of these compounds were chemical variations of previously known chemotherapeutic agents. The fact that these chemicals could be used to fight

Even the most widely respected textbook on animal experimentation states:
"Uncritical reliance on the results of animal tests can be dangerously misleading and has cost the health and lives of tens of thousands of humans."

cancer had already been predicted by their chemical structure.²¹ In other words, for 15 years, billions of dollars of investment money was ploughed into subjecting millions of animals to the most painful, cruel and barbaric procedures and then killing them, all of which proved nothing new.

Even the US National Cancer Institute (NCI) has admitted its failures. In the *Los Angeles Times* of 6 May 1998, NCI Director Dr Richard Klausner was quoted as saying: "The history of cancer research has been a history of curing cancer in the mouse. We have cured mice of cancer for decades and it simply didn't work in humans."

In the United States in the 1990s, scientists came up with the idea of genetically engineering rats to accept human cancers. But in 63 per cent of cases, according to the Greeks, the human tumours in the rats did not respond to chemotherapies which are "currently and effectively" used in humans, because the way cancers grow in animals is different from how they grow in humans. It begs the question as to how many anticancer drugs which could be successful in treating human cancers have been missed because they did not work in mice or rats. Chemotherapeutic agents which have been successful in humans have all come from non-animal means, according to the Greeks.

The next time any of us is tempted to put money into a tin shaken by cancer research charities which fund research using animal models, we would do well to remember the words of Dr Irwin Bross, formerly of the Roswell Park Memorial Institute for Cancer Research, in testimony before the US Congress in 1981: "While conflicting animal results have often delayed and hampered advances in the war on cancer, they have never produced a single substantial advance in either the prevention or treatment of human cancer."

"The history of cancer research has been a history of curing cancer in the mouse. We have cured mice of cancer for decades and it simply didn't work in humans."

— NCI Director Dr Richard Klausner, 1998

WHY ANIMAL-BASED RESEARCH CONTINUES, DESPITE THE EVIDENCE

If even the proponents of the vivisection lobby admit that animal studies are inaccurate and produce little reliable data for human extrapolation, why on earth do they continue to employ these methods?

Dr Werner Hartinger, a German surgeon, surmised in 1989: "There are, in fact, only two categories of doctors and scientists who are not opposed to vivisection: those who don't know enough about it, and those who make money from it."

The latter in particular, according to Ray and Jean Greek, is the main reason. "Scientists are just like the rest of us, materialistic and opportunistic. They, too, struggle to survive and excel in a competitive world," they argue.

Dr Irwin Bross agrees. In 1986 he was quoted in *Cancer Research on Animals* as saying: "They [scientists] may claim to love truth; but when it is a matter of truth versus dollars, they love the dollars more."

To get grants for research and stay employed, you must churn out papers with the utmost regularity. And the fastest and easiest way to get papers published is to use animal experimentation.

"Animal experimentation is tidy," the Greeks explain. "The lovely thing about rats is that you can go home on Friday night and rest assured that they will still be in their cages when you get back on Monday. On the other hand, clinical research on humans

can be tricky. Clinicians have no control over patients who may not return for follow-up appointments. Human subjects may even be dishonest about their lifestyles. You can addict monkeys to crack cocaine or heroin in your nice, clean lab. If you want to study human crack or heroin addicts, you may have to interact with potentially nasty people."

Time is also of the essence. "A rat's generation time is weeks, not decades. By the time a clinician publishes one good paper, an animal experimenter can publish at least five. The easiest way to publish is to take a concept already published and change something, the type of animal used, the dose of the drug, the method of assessing the results or some other variable." It is the number, as opposed to the value of research, that is important to those wishing to get on in their scientific career.

Acceptance of the status quo, not rocking the boat, is also a key factor. The pressure on students and young doctors to publish should not be underestimated. It has led to a proliferation of scientific journals which are often edited by researchers using animal experiments. This means that vivisectionists are able to put forward their work, but those who are against animal studies can find no place to publish—despite there being an estimated 100,000 scientific journals in print today. Many of these journals rely on

advertising revenue from pharmaceutical companies and others who make products for animal experimenters.

Mainstream media also collude to keep anti-vivisectionists' work out of the public eye. At the UK press conference of the Greeks' new book, not one journalist from a national newspaper attended, despite novelist Jilly Cooper being there to promote it.

Reporters and editors soon realise that if they want to hang onto their jobs and maintain a steady flow of breaking news, they must keep their contacts happy. Most of these scientific contacts will be part of the animal experimentation lobby who will

not take too kindly to the prospect of having their industry exposed as a money-making fraud.

This money, by the way, is yours. The US Government spends around \$10 billion of taxpayers' money each year on animal-based research, according to the Greeks. The largest single provider of funds to medical research institutions in the United States is the National Institutes of Health (NIH). But only one-third of NIH competing research grant applications includes human subjects.²² So it is not hard to see why animal studies are the preferred option of researchers with career ambitions and mortgages to pay.

Then there is the grip of corporations to contend with. The animal experimentation industry grosses between an estimated 100 billion and one trillion dollars a year worldwide. This figure includes the employment of hundreds of thousands of people, including those who manufacture and sell jackets for immobilising animals and pumps for force-feeding them, needles, cages, scalpels and equipment used to kill animals in a specific way, not to mention the sales of animals themselves. Take Cedar River Laboratories, for example, which specialises in selling cats; its price is usually \$225 for animals less than 16 weeks old.

Pharmaceutical firms benefit from the industry, too. According to its 1999 annual report, Merck's sales for the year came in at \$32,714 million.

Animal experimentation is the quickest way of getting a new drug onto the market. Researchers given grant money by pharmaceutical companies are far more likely to come out with a positive review of the drug than those who are not receiving financial support. The *Journal of the American Medical Association* reported that 43 per cent of more than 2,000 researchers surveyed at the top 50 research universities said they had received gifts, including cash, even when the giver required prior approval of the results of the research being conducted.²³

Even charities are not exempt from the profit-making loop. Many of them—such as the American Institute for Cancer Research, the American Diabetes Association and the American Heart Association, and the Imperial Cancer Research Fund and the British Heart Foundation (BHF) in the UK—fund or carry out animal-based research. Out of a total income of £56 million in 1998, the BHF spent £34.9 million on research, with only £5.1 million going into educational programs. In one test, dogs' chests were cut open and their blood was circulated out of their bodies and back again in order to allow blood pressure to change quickly in the neck arteries. The experimenters then came to the conclusion that a person bending down and suddenly standing up could experience dizziness and fainting.²⁴

Animal testing also provides pharmaceutical firms with a weapon to protect themselves from being sued by people who have been damaged by their products. In Europe, all medications when they reach the final product stage are legally required to be tested on animals for carcinogenicity and birth defects. But, explains Wendy Higgins, campaigns director of the British Union for the Abolition of Vivisection, this is not the case in the developmental stages of a drug, which is where most animal testing goes on.

The situation in the United States is similar. According to Dr Ray Greek: "Most pharmaceutical firms do more testing than the government requires, so they can say in court that they saw no effects like the one that killed the plaintiff's wife. Officials will tell you off the record that they rely on animal testing and think that it is a big factor in protection from lawsuits." Or, the companies can turn around and dismiss the animal tests as being unreliable in humans. Either way, it is extremely hard for victims to take legal action against them.

ALTERNATIVES TO ANIMAL-BASED RESEARCH

Real developments always arise from a human-modelled foundation, Ray and Jean Greek assert. The potent painkiller morphine, for example, is extracted from poppy flowers. Quinine, used to treat malaria, comes from cinchona bark. Aspirin, the most widely used medication in the world, was first prescribed by Hippocrates in the form of willow bark. None of these owes anything to animal experiments.

Clinical studies of patients and good old-fashioned observation have led to the successful treatment of childhood leukaemia and thyroid disease. Our present HIV and AIDS therapies and a number of heart drugs have also been developed in this way.

In vitro or test-tube study has revolutionised medical research. Cell and tissue preservation technology is now so advanced that many different types of cells can be kept alive almost indefinitely,

giving far more accurate results when studying disease on the microscopic level at which it occurs.

Autopsies and epidemiology are other key areas of research, with technology today allowing thousands of patients at multiple institutions to be tracked. Ray and Jean Greek point out that epidemiological studies discovered the link between folic acid deficiency and spina bifida. Epidemiological studies also showed the cause/effect relationship between smoking and cancer, cancer and diet, heart disease and cholesterol, coal dust and black lung disease, smoking and heart disease, among many other diseases. It was epidemiology that proved the link between smoking and lung disease, despite the tobacco industry arguing for years that this was not the case because animal-based models said so. Experimenters had tried unsuccessfully for more than half a century to give animals cancer with tobacco smoke. They reasoned that since animals do not get cancer from tobacco, there is no proof that it causes cancer. The tobacco industry even paid doctors in the 1950s and 1960s to advertise cigarettes.

Breast cancer is an area that has benefited from mathematical modelling where computers simulate parts of the human body. This is a relatively new area of research, as is computer-assisted research where molecules can be studied on screen using computer graphics which mimic the body's systems.

The Dr Hadwen Trust is a UK-based charity established to come up with alternative research techniques. It funded the development of a new brain-scanning technique for studying vision, which replaced the need for invasive experiments on cats and led to a revolution in the understanding of the human brain with untold potential. The Trust also funded a pioneering 3D computer model of human teeth which is used to predict the results of corrective dental procedures such as braces.

These alternatives are not prohibitively expensive, either. Many are in fact cheaper than using animals. An initial cost of implementing new procedures would have to be incurred, but the long-term savings would justify the investment.

MORAL, ETHICAL AND SCIENTIFIC CONCERNS

The moral and ethical objections to vivisection will continue to rage on. If you are not interested in "animal rights", the use of animals in experiments will probably not bother you. But the scientific evidence against this practice should worry every single one of us who cares about our health.

Anyone who is yet to be convinced should take note of the section in Ray and Jean Greeks' book which outlines the results of a 1998 survey conducted by the Public Citizens' Health Research Group (PCHRG) in the United States. In the survey, 19 medical officers at the FDA said that 27 new drugs approved by the agency in the past three years should not have been. "Dr Sidney Wolfe, Director of the PCHRG, said that standards are going down because the agency has been under pressure from Congress to approve products more quickly. Of 172 officers interviewed, eight said there were 14 instances in the past three years where they had been told *not* to present their opinion to an advisory committee if it would reduce the likelihood of a drug's

Animal experimentation is the quickest way of getting a new drug onto the market.

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The Medical Benefits of Beta-1,3D-Glucan

Beta-glucan, a natural chemical extracted from yeast and plant cell walls, is an immune system booster with enormous potential in combatting cancer and AIDS, surgical infection and even the effects of radiation.

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[Editor's Note: This article refers to research studies involving animals. We wish to advise readers that we at NEXUS do not condone or support the validity, efficacy or morality of animal experimentation or vivisection.]

Western medicine usually treats patients with antibiotics and patented drugs. Many such drugs have harmful side effects and can weaken our natural immune system. This paper explores the role of Beta-1,3D-Glucan in boosting the immune system as an alternative to conventional medication, and in acting as an adjuvant by enhancing the effectiveness of conventional medication.

Our immune system is our only natural defence against invading disease pathogens, yet it sometimes fails to cope with disease. This is because our immune system is not something that is always activated; rather, it modulates between an active state and an inactive state. When the immune system is fully activated, then virucidal and tumoricidal chemicals made by the body to fight diseases are at high levels. When the immune system is inactive, these same chemicals exist only at very low levels, allowing invading organisms to multiply. Pollution of our environment results in our immune system being increasingly harmed and deactivated; for example, every Western person's body now contains dioxin which can deactivate the immune system.

The immune system always requires stimulation in order to switch from an inactive or normal state to the activated state. A typical stimulus might be the detection by the body of some part of a germ. However, sometimes a disease can progress significantly and the person might get quite sick before the immune system becomes aware of the presence of disease microbes.

There are two types of immune responses: *specific* and *non-specific*. If one is vaccinated against a particular disease, say smallpox, then the subsequent change in the immune system reflects a specific immune response targeted only against smallpox. Alternatively, one can have a non-specific immune response whereby the changes in the immune system are more generalised in nature and not aimed at any single specific disease threat. Such a non-specific immune response is capable of enhancing the body's natural protection against a wide variety of diseases rather than giving protection only against a particular single organism.

In the 1940s, Louis Pillmer, PhD, and his associates discovered that a yeast cell wall extract was capable of producing this kind of non-specific immune response. In the 1960s, Nicholas DiLuzio, PhD, at Tulane University identified the active ingredient of the yeast cell wall extract as beta-1,3D-glucan.

Then in the 1980s, Joyce Czop, PhD, and colleagues from Harvard Medical School went further and described exactly how beta-glucan was able to stimulate the immune system. They found that a key immune cell, called a *macrophage*, contained specific receptor sites which could be activated by the presence of beta-1,3D-glucan. They wrote that "studies indicate that beta-glucans with 1,3 and/or 1,6 linkages are active pharmacologic agents that rapidly confer protection to a normal host against a variety of biologic insults".¹

So it was that the non-specific immune stimulant beta-1,3D-glucan was discovered. Its protection is brought about through the triggering of biological switches—*receptor sites*—on the macrophage. These receptors are only activated when a particle has exactly the right shape to fit the receptor site—and beta-1,3D-glucan has that particular shape, just as a lock can only be opened by a particular key. After discovering this, Czop et al. wrote

that "the beta-glucan receptors provide a mechanism by which a heightened state of host responsiveness is initiated".² The resulting higher levels of cytokines in the blood and enhanced intercellular communication from immune activation messengers mean that the immune system is in a better position to be able to defend the body from invading organisms.

It will be shown that such protection can benefit the body in its defence against viruses, bacteria and cancer, and also to help promote rapid wound healing. A Medline Internet search for beta-glucan will typically find over 6,000 published scientific journal articles on this topic, so this is a well-researched subject.

BETA-GLUCAN AND THE IMMUNE SYSTEM

Beta-1,3D-glucan is a naturally occurring polysaccharide that can be found in a variety of sources in nature, and not only from yeast cell walls. Various kinds of beta-glucan can be extracted from medicinal mushrooms, oats, seaweed and even from inside the cell walls of bacteria. Common starches are types of alpha-glucans. Beta-glucan is merely a common polysaccharide building block found in a number of species of plants, fungi and bacteria. It is the active ingredient in oriental medicinal mushrooms, as used in China and Japan for many centuries.

Glucans are strings of glucose molecules joined together. Different arrangements of the glucose molecules form different glucan structures with different molecular weights and result in varying degrees of immune-enhancing potencies.³ From all these different types of glucan, it is beta-1,3D-glucan that has been shown to have the best immune-stimulating properties. Some types of beta-glucan are destroyed by stomach acids and so are not orally active, but beta-

1,3D-glucan derived from baker's yeast is unaffected by stomach acid and is completely intact when taken into the bloodstream. Although beta-1,3D-glucan is extracted from baker's yeast, it is only a tiny particle from within the yeast cell wall and contains no yeast proteins, so does not adversely affect those who are allergic to yeast.

The fact that the immune system macrophage cell has receptor sites for beta-1,3D-glucan⁴ suggests the possibility that the immune system associates detection of beta-1,3D-glucan with the presence of a disease organism. Doctors sometimes test for the presence of beta-glucan in order to detect deep bacterial infection,⁵ so scientists also associate the presence of beta-glucan as being indicative of possible bacterial infection. This is because beta-glucan is an inert building block from inside the cell wall of a wide variety of bacteria—just like bricks are used to make a brick wall. So because the immune system associates detection of beta-1,3D-glucan as representing a possible undefined bacterial infection, the immune system macrophage cell will produce a generalised, non-specific immune activation once it detects the presence of beta-1,3D-glucan.^{6,7}

In producing such a non-specific immune response, a macrophage needs to go through several stages of activation: resident, primed, activated and, finally, cytotoxic. Normally the macrophage may be "asleep", so to speak, in its resident state, in which case it is smooth, inactive and producing few chemicals such as cytokines. As the macrophage goes through the various

stages of activation, its phagocytic ability, cytokine excretion and killing ability increases. Hydrogen peroxide, superoxide and nitric oxide are some of the virucidal and tumoricidal chemicals that are produced once the macrophage has reached the fully activated cytotoxic state.⁸ Only then is the fully activated macrophage able to use these chemical weapons to kill bacteria, viruses and cancer cells. A normal person with an inactive immune system may have macrophages that are still "asleep"; these macrophages, not realising that a disease is occurring, fail to respond appropriately and to produce these biological defence chemicals.

Once activated, the macrophage also helps to organise and direct some of the other types of immune system cells. One way it does this is through excreting chemicals called *cytokines* into the blood—chemicals such as interleukins, interferons, tumour necrosis factor, colony stimulating factor and others.^{9,10} These chemicals are in turn detected by other types of immune system cells such as B-cells, T-cells and natural killer cells, and leads to the activation of these other types of immune cells around the body. This process is referred to as the *immune cascade*, whereby

the triggering into activation of the macrophage and its release of chemical messengers subsequently triggers into activation other types of immune system cells around the body.

Unlike normal medical drugs, chemotherapeutic agents and antibiotics, beta-1,3D-glucan produces a completely natural cell-mediated immune response. The therapeutic effect comes about through the body's own natural defence system and not through consuming some toxic substance that might leave the body weakened as a result. On the contrary, one's natural defences are increased.

Beta-1,3D-glucan is a naturally occurring polysaccharide that can be found in a variety of sources in nature, and not only from yeast cell walls.

ANTI-CANCER EFFECT

The macrophage is one part of the immune system that is capable of killing cancer cells. In addition to organising other immune cells, another function of the macrophage cell is *phagocytosis*: engulfing and then digesting foreign cells and particles.

The macrophage is an extremely large cell compared to all other immune cells, and it has a series of long tentacles resembling those of an octopus. The macrophage tentacles can grab foreign cells, such as cancer cells, and drag them in, engulf them, then digest them using the natural toxic chemicals that the macrophage can produce, such as nitric oxide and hydrogen peroxide.

The ability of the macrophage to digest foreign particles phagocytically varies proportionately with the state of activation of the macrophage. When the macrophage is in its dormant or resting stage, its surface is smooth and its ability to engulf cells is impaired. As the macrophage becomes more activated, its surface becomes progressively more wrinkled, which greatly enhances its phagocytic ability. So macrophage activation increases phagocytosis.

In a study by J. Bogwald et al., the authors showed that glucan-activated macrophages are capable of killing different types of cancer cells such as melanoma and mastocytoma. The authors said that "macrophages stimulated by an insoluble beta-1,3D-glucan from yeast cell walls were able to destroy tumour cells, as

measured by the release of radioactive label from prelabelled 14C-thymidine cells".¹¹

Other authors have found similar results. Di Luzio et al. found that glucan was capable of producing a "significant reduction in the growth of mammary carcinoma and melanoma B16", and concluded that "glucan initiates significant antitumor activity".¹² In a separate study, Di Luzio et al. found that glucan produced "inhibition of tumor growth and enhancement of survival in a variety of transplantable tumors".¹³

In Japan, extracts containing various types of beta-glucan have been used successfully to assist in the treatment of cancer patients for the last 20 years.¹⁴

Additional evidence of the antitumour effects is given by R. Seljelid, who stated that "when water-soluble aminated beta-1,3D-glucan was injected intravenously or intraperitoneally on day seven of tumor growth, the tumors underwent complete regression".¹⁵

Similar injections of beta-glucan into tumours, performed by Mansell et al., also showed positive results. The authors injected beta-1,3D-glucan directly into patients with a variety of tumours, including breast cancer and melanoma. Although the number of patients was small (nine patients), they found in every case that "the size of the lesion was strikingly reduced in as short a period as five days" and "the amount of glucan injected and the quantity of residual tumor appeared to be related",¹⁶ suggesting a dose-response correlation.

Scientists are well aware that sometimes our immune system simply fails to recognise and hence kill cancer cells, resulting in the uncontrolled growth of the cancer. Researchers at the University of Louisville, USA, showed that beta-1,3D-glucan could help the immune system to target and then kill cancers that otherwise would have gone unrecognised and hence unaffected by the immune system. The authors wrote: "Despite exhibiting membrane-bound C3, breast tumor cell lines were not killed by CR3-bearing natural killer cells. Priming of natural killer cell CR3 with small, soluble yeast beta-glucan polysaccharides enabled CR3-dependent killing of these same C3-bearing tumor cell lines".¹⁷ So beta-1,3D-glucan assists the immune system in recognising cancer cells from normal cells.

Beta-glucan exhibits not only a direct anti-tumour effect via macrophage activation and enhanced cancer cell recognition, but also shows a synergistic effect when used in combination with conventional anti-cancer drugs. K. Goma et al. state that when used alone, "glucan exhibited a strong inhibition of tumour growth of the allogeneic sarcoma-180". However, they wrote that in testing the synergistic effect of glucan with anti-cancer drugs, "against the hormone-sensitive Noble-Nb-R prostate carcinoma the glucan alone showed a moderate antitumour effect, whereas in combination with diethylstilbestrol an almost complete regression of the tumour could be achieved".¹⁸ This is just one of many examples where glucan has been shown to have a synergistic effect when combined with other medications.

Obviously every large, lethal, solid tumour began life as a single cancer cell. It would seem possible that everyone might develop a single cancer cell somewhere in their body during their lifetime, yet not everyone dies of cancer or even develops a noticeable cancer. It would seem possible that people with an active immune system may have macrophages in an activated state which can easily overcome and phagocytose isolated single cancer cells in the body. On the other hand, if the natural defences are weakened through exposure to environmental contaminants and a single cancer cell develops, then that single cancer cell may go unrecognised and unchallenged by the body's weakened natural defences. It would multiply and eventually would become millions of cancer cells and a much bigger problem for the body to deal with.

The concept of an ingredient working synergistically with a drug is called the *adjuvant principle*. The *Merriam-Webster Medical Dictionary* defines *adjuvant* as "assisting in the prevention, amelioration or cure of disease".¹⁹ Not only does beta-glucan have a direct effect as a biological response modifier when used alone, but it frequently demonstrates an adjuvant effect by working synergistically with other drugs.

SYNERGY WITH ANTIBIOTICS

Just as beta-1,3D-glucan works synergistically with anti-cancer drugs, it also works synergistically when used in combination with antibiotics. Doctors from Harvard Medical School conducted randomised, double-blind, phase 1/2 clinical trials of a modified beta-glucan, called PGG-glucan, to test its effectiveness in infection control in high-risk surgical patients. The results of the clinical trials were very clear and statistically significant: beta-glucan greatly reduced the rate of infection in these patients. The Harvard researchers stated: "Patients who received PGG-glucan had significantly fewer infectious complications (3.4 infections per infected patient vs 1.4 infections per infected patient, $p = 0.05$), decreased intravenous antibiotic requirement (10.3 days vs 0.4 days, $p = 0.04$) and shorter intensive care unit length of stay (3.3 days vs 0.1 days, $p = 0.03$)." They concluded that "glucan is safe and appears to be effective in the further reduction of the morbidity and cost of major surgery" and, further, that "there were no adverse drug experiences associated with PGG-glucan".²⁰

Another Harvard Medical School study of glucan found similar positive results. The authors found "a dose-response trend with regard to infection incidence" among patients who received glucan—meaning that the higher the dose of glucan, the smaller was the resulting incidence of patient infection.²¹

In 1999, doctors from the University of Washington School of Medicine conducted a multicentre, prospective, randomised, double-blind, placebo-controlled trial of a type of beta-1,3D-glucan on patients scheduled for gastrointestinal operations. Thirty-nine medical centres throughout the United States were involved. All patients received standardised antibiotic

Scientists are well aware that sometimes our immune system simply fails to recognise and hence kill cancer cells, resulting in the uncontrolled growth of the cancer.

prophylaxis. In the noncolorectal group (391 patients), "glucan administration was associated with a statistically significant relative reduction (39%) in serious infections and death". In malnourished patients having these operations, infections and death were 44% of 70 patients in the placebo group, 24% of 68 patients in the low-dose glucan group, and 17% of 72 patients in the higher-dose glucan group. This represents a 61% reduction in the rate of infection between the controls and the higher-dose glucan group of malnourished surgical patients. That would seem to be a remarkable finding for a long studied, yet little used natural product. The authors predicted that "glucan would become an important product in infectious disease management".²²

Doctors in Brazil have also conducted double-blind clinical trials which demonstrate the ability of beta-1,3D-glucan to reduce infections in hospital patients and prevent death. The authors wrote that "Pneumonia occurred in 11 of 20 patients in the control group and in two of 21 recipients of glucan ($p < 0.01$)" and that "The mortality rate related to infection was 30.0 per cent in patients in the control group and 4.8 per cent in the group treated with glucan ($p < 0.05$)".²³ It is easy to see that glucan, a natural polysaccharide molecule, saved people's lives during these hospital-based clinical trials by working synergistically with conventional antibiotic medication.

Researchers from Tulane University, USA, conducted randomised, double-blind clinical trials of beta-glucan to assess mortality rates in patients due to infection caused by trauma. Browder et al. found that "the total mortality rate was significantly less in the glucan group (0% versus 29%)" compared to controls, and that "Glucan therapy significantly decreased septic morbidity 9.5% versus 49%". They stated that these beneficial effects are attributable to enhanced macrophage function produced by glucan.²⁴ This particular study, demonstrating the effectiveness of beta-glucan at mortality reduction by enhanced infection control, is over 10 years old, yet few if any general practitioners have ever heard of this natural product, beta-1,3D-glucan.

DISEASE RECOGNITION

Activated macrophages can aid in the immune system's identification of bacterial or viral invaders. If an activated macrophage encounters a virus and phagocytically digests it, the macrophage will then display part of that virus, called an *antigen*, on the macrophage surface. If an immune system T-cell comes along, it will be able to recognise the antigen being displayed by the macrophage and elicit a specific T-cell response aimed at that particular virus.²⁵ The T-cell cannot recognise the virus and initiate that response until after the virus is broken down and its viral antigen is displayed on the macrophage surface.

In an animal study, researchers concluded that "glucan is capable of increasing survival, inhibiting hepatic necrosis, and maintaining an activated state of phagocytic activity in mice challenged with mouse hepatitis virus".²⁶

RADIOPROTECTIVE EFFECTS

A search of the National Library of Medicine found 31 journal articles discussing the radioprotective effects of beta-1,3D-glucan.

The US Army is amongst those who have reported positive findings on the radioprotective properties of glucan. Some of the effects of nuclear radiation are damage to the bone marrow, colony-forming cells and haematopoietic progenitor cells that manufacture blood cells. Researchers found that glucan exhibited a radioprotective effect because of its ability to stimulate recovery of the bone marrow cells after radiation damage and subsequently the haematopoietic regeneration of new blood cells.^{27, 28}

These results have been confirmed by many researchers. For example, M. Hofer et al. described beta-1,3D-glucan extracted from baker's yeast as "a broad spectrum enhancer of host defence mechanisms stimulating humoral and cell-mediated immunity". They concluded from their research into the effects of gamma radiation on animals that "results have demonstrated the ability of glucan to influence positively the course of the acute radiation disease".²⁹ If a nuclear disaster were to occur, then glucan could mean the difference between life and death.

Patchen et al. state that "glucans significantly enhanced survival in otherwise lethally irradiated mice". None of the control mice survived the lethal gamma radiation, whereas the majority of mice given beta-1,3D-glucan did survive the lethal radiation.³⁰ Many of these studies were carried out by the US military at Bethesda, Maryland, USA.

Additionally, another radioprotective effect was discovered, whereby enhanced recovery was attributed to the free-radical scavenging ability of glucan. Myra Patchen, PhD, was the first to discover the free-radical scavenging abilities of beta-1,3D-glucan and to show that macrophages were protected from free radical attack during and after radiation, while conducting radiation experiments on

animals at the Armed Forces Radiobiology Research Institute, Bethesda, Maryland, USA.³¹

Beta-1,3D-glucan has been shown to work synergistically with other radioprotective agents. Patchen et al. stated that "it was demonstrated that the postirradiation administration of glucan, an immunomodulator and haematopoietic stimulant, enhances the radioprotective effects of WR-2721".³²

CHOLESTEROL REDUCTION

Beta-1,3D-glucan lowers cholesterol levels. Researchers from the University of Massachusetts, USA, studied the effect of yeast-derived beta-1,3D-glucan on serum lipid levels in obese, hypercholesterolaemic men. They concluded that "yeast-derived beta-glucan fiber significantly lowered total cholesterol concentrations and was well tolerated".³³

Clinical trials of oat-derived beta-glucan and cholesterol were conducted by researchers from the University of Göteborg,

A search of the National Library of Medicine found 31 journal articles discussing the radioprotective effects of beta-1,3D-glucan.

The US Army is amongst those who have reported positive findings on the radioprotective properties of glucan.

Sweden. The found that "beta-glucan mediates an increase in bile acid excretion, which most probably explains the effect of oat fibre in lowering serum lipids".³⁴

Researchers from the University of Ottawa, Canada, went further and designed a randomised clinical trial to determine whether it was the presence beta-1,3D-glucan in oat bran that was responsible for oat bran's cholesterol-lowering effect. The results of the clinical trials were quite clear, that "the main component of the soluble fibre of oats, beta-glucan, significantly reduced the total and LDL cholesterol levels of hypercholesterolaemic adults without changing HDL cholesterol".³⁵ This means that beta-1,3D-glucan lowered the "bad" type of cholesterol without lowering levels of the "good" cholesterol.

Lipid levels in the blood are of critical importance to those with diabetes, so researchers in Switzerland investigated the effect of beta-1,3D-glucan on diabetic patients. They concluded that "Diabetic individuals can benefit from diets that are high in beta-glucan".³⁶

WOUND HEALING

Beta-1,3D-glucan has been investigated for its effect on accelerating wound healing in animals. Researchers made identical cuts on each of the rear legs of animals. Beta-glucan was applied to one leg and a saline treatment was applied to the other leg. They wrote that "During the days when the differences were most obvious, 60% to 80% of the animals showed more advanced healing in the glucan-treated wound" and concluded that "the average time for complete wound healing was reduced by about 18% as a result of glucan treatment". Histological analysis showed that "the acceleration of wound healing was mediated by early arrival of macrophages to the wound area in the glucan-treated wounds".³⁷

Further evidence of rapid wound healing was shown by Browder et al. on wounds made in rats. The authors stated that wound "breaking strength was significantly increased by intravenous glucan and topical glucan on the fourth day after incision, compared with controls".³⁸

Similarly, Portera et al. state that "immunomodulators that enhance macrophage function have been shown to be beneficial in a number of wound-healing models in humans".³⁹

...the simple carbohydrate
beta-1,3D-glucan can be extracted
from a variety of natural sources.

Lentinan is a beta-1,3D-glucan
isolated from the shiitake mushroom,
Lentinus edodes.

AIDS THERAPY

As mentioned, the simple carbohydrate beta-1,3D-glucan can be extracted from a variety of natural sources. Lentinan is a beta-1,3D-glucan isolated from the shiitake mushroom, *Lentinus edodes*.

Early-stage clinical trials have been carried out at San Francisco General Hospital, USA. Gordon et al. wrote that "patients in the study have shown a trend toward increases in CD4 cells and, in some patients, neutrophil activity"; however, because of the small number of

patients, these values do not have statistical significance. Yet in their conclusion they noted that "a trial of lentinan in combination with didanosine (ddI) showed a mean increase of 142 CD4 cells/mm³ over a twelve-month period, in contrast to a decrease in CD4 cells in patients on ddI alone".⁴⁰

According to G. Chihara from Teikyo University, Kawasaki, Japan, beta-1,3D-glucans derived from lentinan "increased host resistance to various kinds of bacterial, viral and parasitic infections including AIDS" and "are the most appropriate drugs to prevent cancer recurrence or the manifestation of AIDS symptoms in HIV carriers".⁴¹

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THE VITAMIN C CONNECTION

Sometimes it is useful to compare the activity of a macrophage with the activity of a motor car. In order to activate the car, one first needs the car key to switch on the car. This is analogous to the way beta-1,3D-glucan can activate the macrophage cell. In order for the car to be used a lot, it obviously needs a constant supply of fuel; so, similarly, a macrophage also needs a regular supply of fuel, especially when it is activated. This is the function of vitamin C.

It has been shown that the concentration of ascorbic acid (vitamin C) in a mature macrophage can reach 1,000 times the concentration of ascorbic acid in the blood.⁴²

Yet it has also been shown that when macrophages are activated with beta-1,3D-glucan, they exhibit a significant drop in their vitamin C content.⁴³

This is because they are burning fuel.

Vitamin C is a kind of fuel that is necessary for an activated macrophage to function properly. When macrophages are not activated, then the body does not use up much vitamin C; but once macrophages are activated, the body uses up its supply of vitamin C at a very fast rate. It has been shown that it is the colony stimulating factor, produced by an

activated macrophage, that causes our macrophages to uptake this extra vitamin C.⁴⁴ In fact, if the activated macrophage does not get an adequate supply of vitamin C, it is unable to function properly.

Studies have shown that animals fed vitamin C-deficient diets develop much fewer and smaller macrophages, and those macrophages have an impaired ability to move around the body to where they are needed.⁴⁵

Additionally, vitamin C-deficient macrophages show a decreased ability to generate anti-cancer and bacteria-killing chemicals such as superoxide, even if they are activated.⁴⁶

So, macrophages activated by beta-1,3D-glucan perform strongly for a short while until they use up all their available vitamin C; then, due to lack of vitamin C, their performance may be impaired.

So vitamin C supplementation would seem to be a necessary adjunct to beta-1,3D-glucan therapy.

The synergistic relationship between beta-1,3D-glucan and vitamin C is clearly demonstrated by *in vitro* studies on prostate cancer. Researchers achieved a greater than 95 per cent prostate cancer cell death by using a certain level of mushroom-derived beta-glucan. Yet they later found that by adding vitamin C, the same

level of cancer cell death could be achieved using only one-eighth of the amount of beta-glucan.⁴⁷ The addition of vitamin C multiplied the effectiveness of the beta-glucan.

There is much evidence to support the various beneficial effects of beta-1,3D-glucan. However, Western medicine is an evidence-based medicine. With so many conventional Western medicines having immunosuppressive effects, is it not time for the medical profession to look for an immune-

booster which can enhance the effects of conventional medicines and improve patient outcomes?

People are looking for natural healing, and such natural healing can be stimulated through the use of the immune system enhancer, beta-1,3D-glucan.

The addition of vitamin C multiplied the effectiveness of the beta-glucan.

About the Author:

Peter Olson, BA, DipEd, has formal training in psychology and schoolteaching. As a result of friends and a family member developing cancer, he has spent the last six years conducting health research.

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ADVERSE EFFECTS OF ADJUVANTS IN VACCINES

Adjuvants are chemical substances which are added to vaccines to boost immune response, but they can also cause a wide range of adverse side effects.

Part 2 of 2

by Viera Scheibner, PhD © 2000

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[Editor's Note: This article refers to research studies involving animals. We wish to advise readers that we at NEXUS do not condone or support the validity, efficacy or morality of animal experimentation or vivisection.]

IMMUNOLOGY PRINCIPLES: ANTIBODY RESPONSE

To explain the action of adjuvants, we should look into immunology. The theory of vaccine efficacy is based on the ability of vaccines to evoke the formation of antibodies. This is of varying efficacy, depending on the nature of the antigen(s) and the amount of antigenic substance administered.

However, the mechanisms for the diversity of immune reactions are complex, and to this day are not quite known and understood. There are numerous theories, the favoured one being antibody response as the sign of immunisation (acquiring immunity).

Specific immunity to a particular disease is generally considered to be the result of two kinds of activity: the humoral antibody and the cellular sensitivity.

The ability to form antibodies develops partly *in utero* and partly after birth in the neonatal period. In either case, immunological competence—the ability to respond immunologically to an antigenic stimulus—appears to originate with the thymic activity.

The thymus initially consists largely of primitive cellular elements which become peripheralised to the lymph nodes and spleen. These cells give rise to lymphoid cells, resulting in the development of immunological competence. The thymus may also exert a second activity in producing a hormone-like substance which is essential for the maturation of immunological competence in lymphoid cells. Such maturation also takes place by contact with thymus cells in the thymus.

Stimulation of the organism by antigen results in proliferation of cells of the lymphoid series accompanied by the formation of immunocytes, and this leads to the antibody production. Certain lymphocytes and possibly reticulum cells may be transformed into immunoblasts, which develop into immunologically active ("sensitised") lymphocytes and plasmocytes (plasma cells). Antibody formation is connected with plasma cells, while cellular immunity reactions are mainly lymphocytic.

None of the theories for antibody formation comprehends all the biological and chemical data now available. However, several principal theories have been considered at length.

The so-called *instructive theory* holds that the antigen is brought to the locus of antibody synthesis and there imposes in some way the synthesis of the specific antibody with reactive sites which are complementary to the antigen.

The *clonal selection theory*, evolved by Burnett (1960), presupposes that the information requisite to the synthesis of the antibody is part of the genetics. While the body develops a wide range of clones of cells necessary to cover all antigenic determinants by random mutation during early embryonic life, those clones which are capable of reacting with antigens of the body ("self") are destroyed, leaving only those cells which are not oriented to self ("non-self"). Upon stimulation by a foreign antigen, the clones of the cells corresponding to the particular foreign antigen are stimulated to proliferate and to produce the antibody.

Other researchers demonstrated that there are at least four different antigens formed by descendants of a single cloned cell. By this mechanism, the information for antibody synthesis is contained in the genetic material of each cell (DNA) but is normally repressed. The antigen then assumes the role of a de-repressor and initiates (provokes) the RNA synthesis for a particular messenger, resulting in the corresponding antibody production. The

antigen would instruct the genetically predisposed capability of multipotential cells as to which antibody to produce and might also command the cells to proliferate, resulting in clones of properly instructed cells.

There are two possible mechanisms for the elimination of antibodies against self: *immunological nonresponsiveness* and *immunological paralysis*. There are several states of immunological nonresponsiveness; one is illustrated by the exposure of a foetus or newborn to an antigen prior to the development of its ability to recognise the antigen as non-self (*immunological incompetence*). Immunological paralysis results from the injection of a very large amount of antigen into immunologically competent individuals. Nonspecific immunological suppression by cortisone, ACTH, nitrogen mustards and irradiation is also well known.

Cellular sensitivity, also known as *delayed* or *cellular hypersensitivity*, depends on the development of immunologically reactive or "sensitive" lymphocytes and possibly other cells which react with the corresponding antigen to give a typical delayed-type reaction after a period of several hours, days or even weeks.

Cellular hypersensitivity depends on the original antigenic stimulation and a *latent period*, and is specific in its response. Delayed-type hypersensitivity is characteristic of the body's response to various infectious agents such as viruses, bacteria, fungi, spirochetes and parasites. It is also characteristic of the body's response to various chemicals, such as mercury, endotoxins, antibiotics, various drugs and many other substances foreign to the body.

The induction of a hypersensitivity reaction requires the presence in the tissues of the whole organism or certain derivatives of it, in addition to the specific antigen such as a lipid, in addition to tubercle bacillus protein. Sensitisation to a non-infectious substance must be mediated through the skin or mucuous membranes which probably provide further necessary co-factors.

A delayed hypersensitivity reaction may be enhanced experimentally by the employment of the antigen in a mineral oil adjuvant with added *Mycobacterium tuberculosis* or by injection of the antigen directly into the lymphatics. The delayed hypersensitivity response is accompanied by mild to severe inflammation which may cause cell injury and necrosis. *The inflammatory response which occurs in delayed-type hypersensitivity may not be protective, and in many instances may even be harmful* (e.g., rejection of grafts is directly linked to delayed hypersensitivity).

IMMUNOPATHOLOGY OF HYPERSENSITIVITY REACTIONS:

Immediate Hypersensitivity

This is the antibody-type reaction that is a secondary consequence to the beneficial effect of the combination of an antibody with its antigen.

Arthus-type Reaction

This reaction results from the precipitative union of a large amount of antigen with a highly reactive antibody in the blood vessels, and leads to vascular damage. The cascade of events includes spastic contraction of the arterioles, endothelial damage, formation of leukocyte thrombi, exudation of fluid and blood cells

into the tissues, and sometimes ischemic necrosis. Periarteritis nodosa results from a similar antigen-antibody reaction and is characterised by inflammation of the smaller arteries and periarterial structures. It is accompanied by proliferation of the intima and two types of occlusion: (a) by proliferation or thrombosis; or (b) by the formation of nodules containing neutrophils and eosinophils.

Anaphylaxis

Injection of antigen and its combination with antibody may cause release from the cells (especially mast-cell fixed basophils) of physiologically active substances such as histamine, serotonin, acetylcholine, slow-reacting substances (SRS) and heparin. They act on smooth muscle and blood vessels and cause anaphylactic (hypersensitivity) shock, asthma attack, allergic oedema, rhinitis or hay fever, and accumulation of fluid in the joints.

Atopy

Atopy is caused by the union of antigen—usually pollens, dust, milk, wheat and animal danders—with a peculiar type of antibody (reagin). This reaction is relatively heat-labile and cannot be

demonstrated by *in vitro* procedure. It has a special affinity for the skin and for familial predisposition to the disease. The reaction is nevertheless similar to other immediate-type sensitivities, with the release of histamine and its manifestation principally as asthma (breathing paralysis), hay fever, urticaria, angioedema and infantile eczema.

Delayed Hypersensitivity

The typical pathology of delayed hypersensitivity due to infectious agents involves perivascular infiltration of lymphocytes and histiocytes

with the destruction of the antigen-containing parenchyma in the infiltrated area. The visual manifestations may vary from slight erythema and oedema to a violent reaction with progressive tissue destruction and necrosis. Local reactions include papular rose spots of typhoid fever, meningitis and a variety of infectious diseases, and contact sensitivities to plant and chemical substances manifesting as erythema, followed by papule and vesicle formation with resultant tissue damage and desquamation. Systemic reactions may accompany severe local reactions or may result from inhalation of the allergenic substances.

Humoral antibodies do not seem to play a role in delayed hypersensitivity reaction. The reactivity is transferred only by cells, presumably sensitised lymphocytes, and it is unlikely that histamine or other physiologically active substances play a role in the reaction. The reaction extends to any or all tissues where the offending antigen may occur.

Isoimmunological Disease

This is the result of an immunological reaction of a member of the same species to the tissue of another member of the same species. A blood transfusion reaction in a person given an incompatible blood type is a typical example. Another example is erythroblastosis fetalis, which results from the transfer of antibodies against the red blood cells of the foetus to the foetal circulation. Homograft rejection of tissues or organs between nonisologous members of a species is also immunologically based.

The inflammatory response which occurs in delayed-type hypersensitivity may not be protective, and in many instances may even be harmful.

Immunological Disease Resulting from Adsorption of Foreign Substances

Under certain circumstances, foreign substances such as medications may combine with cells to render them antigenic. Subsequent exposure to such a foreign substance results in lytic, agglutinative or other types of cell-destructive activity. Such a reaction may involve red blood cells (drug-induced anaemias), platelets (drug-induced thrombocytopenic purpura), and leukocytosis (drug-induced agranulocytosis).

Bacteria or viruses may also alter cell surfaces by coating or by unmasking antigens through enzymatic activity which may render them vulnerable to immunological destruction.

Autoimmune Disease

Under certain circumstances, the body may respond immunologically to its own components or to intrinsic substances which are related antigenically to the host's own tissues. The circulating antibody or sensitised cells which are produced are then active in causing cellular injury to the tissues or organs of the body which bear the corresponding antigen.

Waksman (1962) proposed several mechanisms of autoimmunisation, such as:

1. Vaccination with organ-specific antigens which are isolated from the lymphatic channels and bloodstream and are not recognised as self when brought into contact with the immunologic process. They are represented in the central and peripheral nervous systems, lens, uvea, testes, thyroid (thyroglobulin), kidneys and other organs.

2. Vaccination against constituents of tissues which have been altered antigenetically by various factors. These include myocardial infarction, X-irradiation, enzymatic or other chemical alteration, and changes induced by infectious disease agents or by drugs. Erythrocytes, platelets and leucocytes are the most affected cells. Various organs may also be affected.

3. Vaccination with heterologous antigens which are sufficiently different to permit an immunological response but sufficiently alike to react with autologous antigens.

4. Alteration of the immunological apparatus so as to result in the failure of recognition of self. This occurs in neoplasia of the lymphatic system and in experimental grafting of immunologically competent heterologous lymphatic tissues under conditions which suppress the host's response to the graft and give rise to the wasting "runt disease" or "homologous disease".

5. Possible hereditary or other immunological abnormality. This is represented by a hyper-reactivity to antigens or other aberrations without apparent antigenic stimulation. Such mechanisms might be related to certain forms of the "collagen diseases", such as systemic lupus erythematosus in which there is an antibody against a diversity of antigens.

6. Experimentally, Freund's mineral oil adjuvant (usually with added mycobacteria) and certain bacteria or bacterial toxins may so alter the host as to bring about a ready response to unaltered normal homologous tissue. These "experimental autoallergies"

include a wide variety of organs and tissues, and are now being employed as model systems for investigation of autoimmune phenomena.

Both humoral antibody and sensitised cells may function in autoimmune disease. Auto-antibodies seem to be involved in reactions with cells which are easily accessible, such as the formed elements of the blood (in haemolytic anaemia, leucopenia, thrombocytopenia), vascular endothelium, vascular basement membrane including the glomerulus (in acute glomerulonephritis) and ascites cells (neoplastic immunity).

Production of lesions in the solid vascularised tissues appears to depend on delayed hypersensitivity reactions with sensitised lymphoid cells (such as in allergic encephalomyelitis, thyroiditis, sub-acute and chronic glomerulonephritis, orchitis, adrenalitis and many other diseases).

It is quite obvious now that the same autoimmune mechanisms are responsible for the same diseases in human beings and that the extent of such damage is enormous and keeps increasing, with more and more vaccines added to the "recommended" schedule.

Indeed, vaccines such as the pertussis vaccine are actually used to *induce* autoimmune diseases in laboratory animals, the best and most publicised example being the so-called experimental allergic encephalomyelitis (EAE). When, as expected, these unfortunate animals develop EAE from the pertussis vaccine, the causal link is never disputed; yet when babies after vaccination with the same vaccines develop the same symptoms of EAE as the laboratory animals, the causal link to the administered vaccine is always disputed and usually considered "coincidental". Lately, innocent parents and other carers have been accused of causing the symptoms of vaccine damage by allegedly shaking their babies.

Systemic lupus erythematosus is one of the innumerable recognised side-effects of a number of vaccinations. One of the best papers (if not the best) on this is by Ayzavian and Badger (1948), and it has not lost any of its punch and relevance since it was published.

They describe three cases of nurses who were literally vaccinated to death. The authors surveyed a group of 750 nurses who trained at a large municipal hospital between 1932 and 1946, and detailed the cases of three nurses who were vaccinated with a multitude of vaccines over a period of time and developed and succumbed to disseminated lupus erythematosus.

Typically, these nurses were given the following tests and vaccines in short succession: the Schick test; three days later, the Dick test; seven days later, typhoid-paratyphoid vaccine; seven days later, another typhoid-paratyphoid vaccine (a double dose); seven days later, the third typhoid-paratyphoid vaccine; and seven days later, the fourth typhoid-paratyphoid vaccine. Every time, the recipient developed local erythema and/or fever and malaise, but it did not deter the doctor from administering yet another series of vaccines, starting only 14 days after the first lot of tests and typhoid-paratyphoid vaccines.

This time, after all these injections, one of the trainee nurses

Lately, innocent parents and other carers have been accused of causing the symptoms of vaccine damage by allegedly shaking their babies.

was given her first injection of scarlet fever streptococcus toxin with "no ill results". One week later, she was given the second injection of streptococcus toxin, after which she developed joint pains and fever. She did not report these reactions to the health office. Nine days later, she returned and received the third injection of a fourfold dose of streptococcus, after which she developed severe arthralgia in the fingers and knees and a sore throat. She was hospitalised for five days and discharged with the diagnosis "Dick-toxin reaction". Only five days later her inoculations were continued, first in lower and then in gradually increasing doses so that the series included a total of 10 instead of the usual seven injections. Epinephrine was administered with each of these injections of streptococcus toxin and toxin-antitoxin.

Two months after the last lot, the trainee nurse was re-admitted to the hospital with swelling and pain of the ankles and toes and tenderness of the joints of both hands, which had been constant since the first Dick test five months earlier. The diagnosis was "rheumatic arthritis". She was given aspirin, but two weeks later the pain came back and she developed chills and fever, sore throat and cough. One month later, the trainee nurse was re-admitted to hospital for two weeks, and during this admission a streptococcus vaccine was started in small doses, but because of her severe reaction "further vaccines were refused". The diagnosis after this admission was "rheumatoid arthritis and infectious mononucleosis". Four months later, the trainee nurse noticed skin eruptions over her nose and both cheeks, and her saliva became foul. The skin and cheeks, upper lips and the bridge of the nose were covered with purplish red, mottled and indurated rash eruptions. Two months later, the eruptions spread over much of the body. A year later, the trainee nurse died, but not before developing severe symptoms of high fever, tachycardia, diarrhoea and showing abnormal blood tests.

It was not enough that this unfortunate trainee nurse died; there were another two cases reported, almost identical to the first case. We shall never know how many of the remaining 747 trainee nurses developed less lethal, but still health-incapacitating, reactions.

If someone said that this type of "medical treatment" had been given to the inmates of the Nazi concentration camps, I would not be surprised. However, this type of "medical treatment" was and is being given with impunity to millions of babies, children, teenagers and adults in so-called free and democratic countries as well as in the Third World. Meanwhile, the health authorities refuse to accept that vaccines cause such reactions and even deaths.

VACCINATION: A SAFETY WARNING

The conclusions which follow the study of relevant medical and immunological literature dealing with vaccines and the adjuvants used in vaccines is that the absolute safety of these substances can never be guaranteed. According to Gupta et al. (1993), the toxicity of adjuvants can be ascribed in part to the unintended stimulation of various mechanisms of the immune response. That's why

the safety and adjuvancy must be balanced to get the maximum immune stimulation with minimum side effects.

My conclusion is that such balance is impossible to achieve, even if we fully understood the immune system and the full spectrum of deleterious effects of foreign antigens and other toxic substances such as vaccine and drug adjuvants and medications on the immune system of humans, and particularly on the immature immune system of babies and small children. Injecting any foreign substance straight into the bloodstream will only cause anaphylactic (sensitisation) reactions. Nature, over thousands and thousands of years, has developed effective immune responses; yet man, without respect for nature, demonstrably causes more harm than good.

Vaccination procedures are a highly politically motivated non-science, whose practitioners are only interested in injecting multitudes of vaccines without much interest or care as to their effects. Data collection on reactions to vaccines is only paid lip service, and the obvious ineffectiveness of vaccines to prevent diseases is glossed over.

The fact that natural infectious diseases have a beneficial effect on the maturation and development of the immune system is ignored or deliberately suppressed.

Consequently, parents of small children and any potential recipients of vaccines and any orthodox medications should be wary of any member of the medical establishment (which is little more than a highly politicised business system) extolling the non-existent virtues of vaccination. Even though Australian law requires doctors to warn patients about all side-effects of all medications and procedures of a material nature, whether the patient asks or not, doctors as a rule do not uphold this important law.

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**The fact is that natural
infectious diseases have
a beneficial effect on
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development of the
immune system.**

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MAKING BALL LIGHTNING TO ORDER

by Albert Budden © November 2000

The phenomenon of ball lightning has been a fascination over the centuries but remains a mysterious riddle to scientists, partly due to its transient and elusive nature.

Typically although not exclusively occurring during thundery weather, this electrical artefact can take various forms—most commonly appearing as a globe of light, about the size of a grapefruit, which fades out harmlessly after a few minutes. However, historical records also report metre-wide fireballs which exploded like a bomb, wrecking houses and tearing off limbs from those caught in the blast.

Consider, for example, the following 19th-century report from France, which archaically refers to the phenomenon as a "thunderbolt":

"On 11 July 1809, at Châteauneuf-les-Moustiers at about eleven o'clock in the morning, a thunderbolt entered the church just as the bell was ringing and a large congregation had taken their seats. The thunderbolt exploded with great force, wounding eighty-two people and killing nine outright... There were several dogs in the church at the time of the explosion, and all of them were killed."

Another 19th-century case provides examples of the weird effects that can occur during close encounters with ball lightning:

"On 24 August 1895, about ten o'clock in the morning, several people saw a whitish globe of about one-and-a-half inches in diameter descend out of a violent rainstorm and, on touching the ground, break up into two smaller globes. These 'lightning beads' immediately rose to the height of the chimneys on the nearby houses. One went down a chimney and exploded in the kitchen, causing great damage. The other ball descended another chimney, passed through a room in which were a man and a child, without harming either of them, and went through the floor, perforating a brick with a clean round hole about half an inch in diameter."

Speculations abound as to the true nature of ball lightning, and over the past 156 years a remarkable family of theoretical models for these mysterious electric fireballs has appeared in the scientific literature. Some of these have been quite bizarre, such as the proposal that ball lightning is the result of nuclear fission, the active process of atomic bombs. However, the number of actual experiments in the laboratory has been minimal, and armchair theorising based on second- and third-hand reports has been the most common way of tackling the enigma of ball lightning.

THE CORUMS' BREAKTHROUGH

Attempts at reproducing ball lightning have been disappointing and have eluded physicists worldwide, although success in this would of course be a giant step for-

ward, as ball lightning could then be made to order and experimented upon in the lab.

It is then of the greatest significance that two electrical engineers, Kenneth Corum and James Corum, in Ohio, USA, have recently succeeded in producing, to order, such electric fireballs in many beautiful colours.

However, just as startling is their revelation that the instructions to accomplish this have been publicly available for over a hundred years, tucked away in the notebooks of the legendary turn-of-the-century physicist, Dr Nikola Tesla. It is the Corums' unique reinterpretation of Tesla's 1899 Colorado Springs notes that has brought what amounts to a long-overlooked secret back into the public domain.

As if this weren't enough, another surprise is the Corum brothers' revelation that

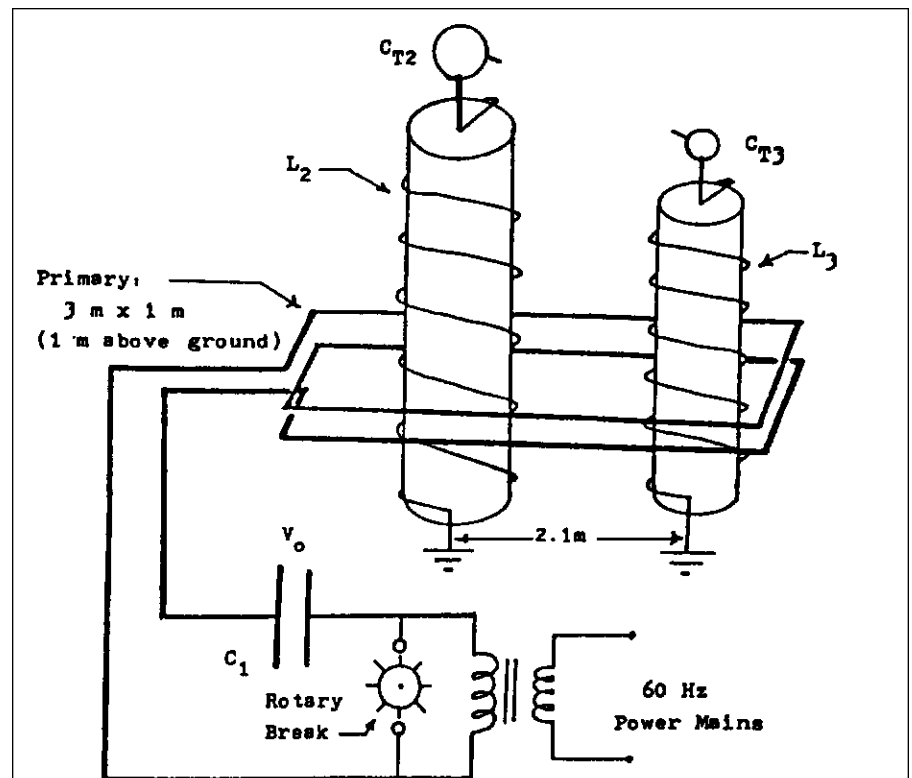


Diagram showing details of apparatus used to make ball lightning. Note that both the high and low frequency secondary resonators are excited by the same primary. The system was tuned so that after the primary spark broke, the low frequency resonator gave a maximum voltage of 2.4 MV at 66.6 kHz and the high frequency resonator attained 200 kV at 156 kHz.

NEWSCIENCE NEWSCIENCE NEWSCIENCE

ball lightning is actually fairly simple and easy to produce and that the inexpensive apparatus needed already exists in many amateur enthusiasts' workshops and countless college science departments around the world. Predictably, perhaps, this is the Tesla coil.

James Corum really put this previously-thought-of technological impasse into perspective when he commented that making ball lightning in the laboratory would make an interesting high-school science project!

Whilst such fireball production would be beyond the layperson, students and amateur physicists who have specialised in exploring the intriguing inventions of the legendary Nikola Tesla should certainly have enough technical information to put the required hardware together, given average electrical workshop resources. The apparatus used—the Tesla coil, many of which have been built at home by electrical hobbyists in their garage workshops—is a common feature of the physics departments of many colleges and universities.

TESLA COIL BASICS

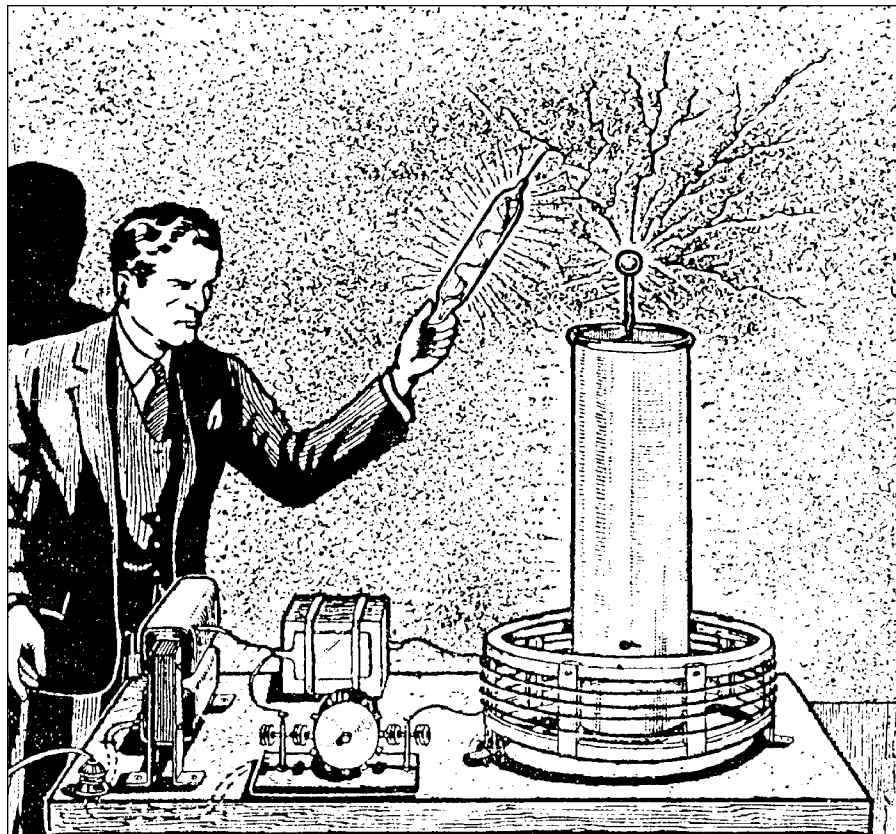
For even the uninitiated, a basic description of what the Tesla coil is and does is fairly easy to comprehend, and provides

enough information to appreciate what is involved in the laboratory production of ball lightning.

A glance at the accompanying illustration shows that the Tesla coil consists of two coils of copper wire wound around cylinders—one wide squat one, called the *primary*, and a taller narrow one which sits inside it, called the *secondary*. At the top of the secondary is a brass or copper ball joined to the coil; and as can be seen from the drawing, this is also the terminal from which spectacular high-frequency electrical streamers are emitted when the device is in operation.

In fact, the Tesla coil was specifically constructed to produce such high-voltage discharges of microwaves, and *it is within these long streamers that the electric fireballs appear*—and remain when the power has been switched off.

These primary and secondary coils, which are not physically connected to each other, are set within circuitry which includes various electrical units (termed a *spark gap* and a *capacitor*) designed to pump up the power output to very high levels extremely quickly. For those with technical knowledge, peak power of 100 kW in 10 microseconds is typical.



A popular demonstration is depicted in the drawing, where a vacuum tube or a fluorescent strip light glows by itself when held near the terminal due to the high levels of free electricity discharged in the air around it.

REINTERPRETING TESLA'S NOTES

So if the Tesla coil has been so freely available around the world since it was patented by Tesla in 1897, why has nobody used it to produce ball lightning before now?

This issue is even more puzzling when it is realised that Tesla himself frequently induced fireballs during his experiments. He is quoted as stating: "I succeeded in determining the mode of their formation and producing them artificially." In fact, the way he described them, they just seemed to bubble readily from his coil apparatus.

The answer to this puzzle lies in the incredible fact that Tesla's published notes, despite being studied by countless highly qualified physicists over the past hundred years, have simply been misunderstood! Physicists have tried to copy Tesla's results and failed, putting such failures down to his ambiguous notation style.

The Corums relate that after taking part in an International Tesla Symposium at Colorado Springs, where Tesla's laboratory remains, they were on the plane flying home to Cleveland:

"It was a puzzle to us ... we continued to compare chapter 34 with the photographs in Tesla's published notes. And then it struck us. We just weren't using the circuit configuration which Tesla shows us. When we got back, we rearranged our apparatus..."

THE CORUMS' RECONSTRUCTION

Intriguingly, the Corums then go on to describe what happened:

"Small points of light seemed to appear from nowhere, then several of the floating lights were struck by high-voltage streamers emanating from the terminal of the secondary coil.

"Suddenly we observed multitudes of fireballs with diameters ranging up to several centimetres which were 'born' within the streamers emitted by the coils ... lifetimes typically ranged from one-and-a-half to several seconds..."

"A wide range of colours [was] produced ... in a manner similar to the presence of flare compounds in pyrotechnics. The demise of some fireballs [was] often

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accompanied by loud reports, while others appeared to just fade out...

"We were able to produce other interesting features. Often we had pulsating fireballs. These would appear and then shrink. When they were hit by the RF streamers [from the Tesla coils], they would grow in size and shrink again. This would occur a number of times and then they would fade away. In one sequence, a ball [was] struck by six separate streamer discharges, growing in size each time. One fireball grew from an initial 6-mm sphere into a 5-cm-diameter fiery red globule within a one-second time interval. The streamers often appear to have bright fluid matter being visibly ejected and moving along their length, this matter apparently adding to the size of the fireball.

"Another feature was that some had the appearance of a doughnut: bright circles with darkened centres. Others appeared as deep red, bright white, green, yellow, blue-white and purple. Some fireballs can be seen to spin, with moving dark patches like sunspots.

"Some appear to be transparent, with electrical discharges darting through them. Several are observed to change colour as they evolve and eventually explode like astronomical novae. Sometimes the streamers actually jump from fireball to fireball in a dazzling display, changing their appearance on contact.

"Some fireballs start out as red dwarves, then pass through various colours and sizes to a bluish-white giant stage. Some of these seemed to explode as 'novae', while others seemed to cool back as red giants. In one particular case, a fireball actually appeared to be surrounded by a glowing shell."

THE DUAL TESLA COIL SET-UP

In fact, two simultaneously operating Tesla coils are involved here, where an electromagnetic wave of extremely high frequency from one coil apparatus is imposed upon another at a lower frequency.

This set-up acts as a trigger, where the total energy produced is discharged in an infinitely small interval of time and at a tremendously great rate of energy movement—which cannot confine itself to the metal circuitry of the coil, so it is released into the air with inconceivable violence. It is this electrical violence,

which mimics that of natural lightning strikes, which vapourises nearby available carbon and metal sources which form a bubble around super-heated air products such as ozone.

In this laboratory set-up, it is the blackened copper terminal that is progressively eroded and actually provides this material, and it is this electrothermally produced, charged bubble that is the basic sphere of the ball lightning. It is within this bubble that a variety of highly dynamic chemical and electrical activities take place, providing "fuel" during the life of the phenomenon.

The process could be visualised as an interrupted explosion where the outgoing expelled particles of copper and carbon,

One fireball grew from an initial 6-mm sphere into a 5-cm-diameter fiery red globule within a one-second time interval.

instead of being thrown out in all directions, are held in place by surface tension to form a container bubble, inside which the explosion slowly continues as unstable, smouldering, electrochemical discharges.

Eventually, after this electric fireball may have floated several feet through the air, its internal energies reach a critical instability and the initial explosion continues, resulting in either a harmless burnout or a destructive force, depending upon at which stage in its energy release it was curtailed as the ball lightning form.

RECORDING VISUAL EFFECTS

Recording the fireballs on photographic film was somewhat difficult; in some cases the Corums found videotape to be superior, as time durations could be estimated from the video frame rate.

However, in a remarkable sequence of photographs, the Corums were able to record the apparent effect of fireballs passing through a glass window pane—something which has often been observed with natural ball lightning. That is to say, the

reports of ball lightning passing through window-glass during a storm are really descriptions of an illusion!

From a close analysis of video footage, the Corums realised that what had really happened was that electrical streamers hit the glass first, carrying a fireball along with it. As the sphere approached the glass surface it would fade out, during which the electric lines of force which propelled it played upon the glass, causing it to become heated and its substance to be broken down enough to become slightly conducting. This spot would then act like an electrode, as an extension of the copper terminal on top of the coil, as it was still connected to it electrically by the streamer. As more and more electricity was fed into the glass from the coil's terminal via the streamer, a new fireball appeared on the other side of the pane.

The Corums relate:

"The fireballs would then travel slowly, horizontally, 35 cm or so, and flare up. Some would travel out a bit farther and either explode or burn out like cinders..."

This sequence was only evident through stop-frame analysis of the video recording, and viewing it in real time gives the impression that the fireball passes through the glass pane.

It is fitting to end this description of the Corums' work by quoting them referring to Tesla:

"At long last, today, the fireballs can be closely studied in a controlled laboratory environment. We believe that the work that Tesla left undone may now be resumed. And, with the advanced techniques and concepts available to scientists today, rapid progress will surely be made."

About the Author:

Albert Budden, BEd is an investigator specialising in the scientific study of the paranormal as well as electromagnetics and health. He is a member of the Environmental Medical Foundation and the author of several books including *Allergies and Aliens: The Visitation Experience* (Discovery Times Press, 1994), *UFOs: Psychic Close Encounters* (Blandford, 1995), *The Poltergeist Machine: The Hutchison Effect* (DTP, 1996). His article on John Hutchison's "Poltergeist Machine" and related research was published in NEXUS 4/01.

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A GALACTIC SUPERWAVE HAZARD ALERT

Our solar system is subjected to an intense volley of cosmic rays from a galactic core explosion every 10,000 to 26,000 years, and the next catastrophic event is already overdue.

by Paul A. LaViolette, PhD
© October 2000 – January 2001

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Comets and asteroids are not the only space hazards that threaten the Earth. There is another phenomenon that occurs far more frequently, but has only recently been discovered: the arrival of an intense volley of galactic cosmic rays, or what has been termed a *galactic superwave*.¹⁻⁴ The most recent superwave affected the Earth and the entire solar system during the period from about 16,000 to 11,000 years ago and, through its ultimate effect on the Sun, was responsible for bringing an abrupt end to the last ice age.

Through these solar effects, the superwave was also responsible for the mass extinction which occurred 12,750 years ago, wiping out 95 per cent of the large mammal species on the North American continent. Palaeontologists agree that this was the worst mass extinction since the demise of the dinosaurs 65 million years ago, but its cause had long been a mystery. Excessive hunting by Palaeolithic tribes cannot account for the 22 genera of birds which also became extinct at that time. Nor can hunting explain why atmospheric radiocarbon coincidentally rose to unprecedented levels, and why Moon rocks register solar flare activity over 50 times higher than present levels. Nor can it explain the widespread slaughter of large and small mammals, not only to the south of the North American ice sheet but also in the Arctic (Alaska and Siberia), in Europe and even in South America, their remains being found entombed in deposits left by the passage of catastrophic glacial meltwater floods.

Gazing out at the night sky, we easily assume that what we see is the way things have been for millions of years: the star-studded heavens, a beautiful Moon, and a Sun that in the morning will rise in its full glory. Unfortunately this has not always been the case—and will not always be so. Overnight, this peaceful scene could be transformed into a grotesque display that could best be described as "all hell breaking loose". Our galaxy's hibernating, dust-shrouded core—which has long remained hidden from view, nestled between the constellations of Sagittarius and Scorpius—will be seen on that fateful day to have awakened to shine forth a strange, brilliant, blue-white light. It will appear as a guest star, far brighter than the planet Venus at full phase, signalling the galactic superwave's arrival. The cosmic ray particle volley which had been relentlessly travelling towards us for 23,000 years, inconspicuously crossing the void separating us from the galactic centre, will now have become a visible spectacle for all to see.

These cosmic rays are ultra-relativistic, meaning that they travel so close to the speed of light that they give rise to superluminal visual effects. The synchrotron radiation emitted in the course of their 23,000-year trek will appear to unfold towards us in a matter of days, showering us with everything from low-frequency radiowaves and visible light to ultraviolet radiation, X-rays and gamma rays, not to mention the penetrating particle volley itself. What we will be witnessing is what astronomers call a *galactic core explosion*. It's a phenomenon they have seen going on in distant galaxies. Now, with the arrival of the superwave, they and the whole world will be experiencing first-hand the same phenomenon happening in our own Milky Way Galaxy.

OVERVIEW OF THE CORE EXPLOSION PHENOMENON

The core explosion phenomenon first became known to astronomy in the 1960s with the discovery of the Seyfert galaxies with their luminous cores, radio galaxies and, at the more extreme end of the energetic spectrum, objects called *quasars* and *blazars*. Observations indicated that a galactic core during its explosive phase can release a total energy equivalent at least to that coming from hundreds of thousands of supernova explosions. In some cases, their output can reach up to that of even billions of supernovae.^{5,6}

By the 1970s, astronomers realised that our galactic core is not immune to this phenomenon.⁷ Although gas motions in the immediate vicinity of our galaxy's core suggested that the core had become active as recently as 15,000 years ago, astronomers were reluctant at that time to consider that this was evidence of a fully fledged core explosion. In their minds, they pictured the Milky Way as a peaceful place. They assumed that the core has been in its present, seemingly inactive, state for millions of years and that it would continue to be quiescent for many more millions of years to come. But even if the core were to explode—not to worry. They supposed that no harm would come to us, since our solar system is well outside the galaxy's nuclear bulge and on the outer fringes of one of the spiral arms of the galaxy. They imagined that magnetic fields filling the galaxy's core region would trap the outward-flying cosmic rays, bringing the barrage to a slow crawl within just a few hundred light years.⁸

The four years of PhD research I conducted on this subject proved to me that their idyllic assumptions were dead wrong. My 1983 PhD dissertation, "Galactic Core Explosions, Cosmic Dust Invasions, and Climatic Change", presented evidence suggesting that our galaxy's core explodes 10,000 times more frequently than had been thought—about every 10,000 years, rather than every 100 million years.¹

Moreover, my dissertation showed that magnetic fields would not stop this outburst. Instead, just the opposite would happen: the cosmic ray volley would overpower any magnetic fields it encountered in its path and align these with its own radial flight. The result would be an expanding shell of cosmic rays travelling radially outward from the centre of our galaxy at very close to the speed of light and penetrating through the entire extent of the galaxy. It showed that the superwave scenario also explained many of the features characteristic of distant exploding galaxies.

These findings were subsequently presented at scientific conferences and published in refereed scientific journals.^{2-4, 9-10} Numerous predictions made in this PhD study were later verified (see www.etheric.com/LaViolette/Predict.html). In 1997, my book on this subject, entitled *Earth Under Fire*, was published (see www.etheric.com/LaVioletteBooks/Book-EUF.html). It received rave reviews and a five-star rating by readers. In 1999, a documentary video about this galactic phenomenon was produced and shown on nationally syndicated cable network television.

Even so, mainstream media have been slow to cover this important issue. As a result, average citizens, trusting that they have

been well informed by the news media, continue to view the night sky as a serene and secure place as they continue their daily routines in their wakeful dreams.

One of the primary objectives of the Starburst Foundation is to awaken as many as possible to the new and very different awareness that galactic superwaves *do* exist and can come upon our world with little warning.

THE EMP SHOCKFRONT

Should a superwave arrive, our most immediate worry would be the electromagnetic pulse (EMP) which it would carry at its forefront. This high-intensity electromagnetic shockfront would send high voltages coursing along any electrically conductive

object.¹ Upon arrival, it would:

- create high-voltage surges on the powerline grid, shorting out powerline transformers and tripping line circuit-breakers, resulting in global power blackouts;
- fry satellites and destroy all nonhardened electronic equipment connected to the electric power grid, resulting in loss of electronic communications (TV, telephone, GPS system, etc.); airplane crashes would be inevitable;
- electrocute people who happened to be touching a large metal surface;
- ionise the Earth's atmosphere and consequently destroy the ozone layer, thereby increasing the Earth's exposure to harmful UV rays and ionising radiation. The atmospheric electron shower produced by the superwave cosmic rays, along with the increased penetration of solar UV, would raise the incidence of skin cancer as well as the rate of genetic mutation.

On August 27, 1998, scientists awoke to the rude reality that a cosmic ray event could upset life on our planet when a strong gamma ray burst unexpectedly arrived after journey-

ing 20,000 light years from a distant point in the constellation of Aquila. The event, which lasted five minutes, was strong enough to ionise the upper atmosphere and seriously disrupt satellites and spacecraft. It triggered a defensive instrument shutdown on at least two spacecraft. Fifteen years earlier, in 1983, a much briefer gamma ray burst, lasting just four seconds, had a measurable effect on radio transmissions used for global navigation and communication.¹¹

There is the strong possibility that the EMP shockfront preceding a superwave would also be accompanied by a gravity wave. The tidal force exerted on the Earth as it passed could trigger earthquakes and volcanic eruptions.

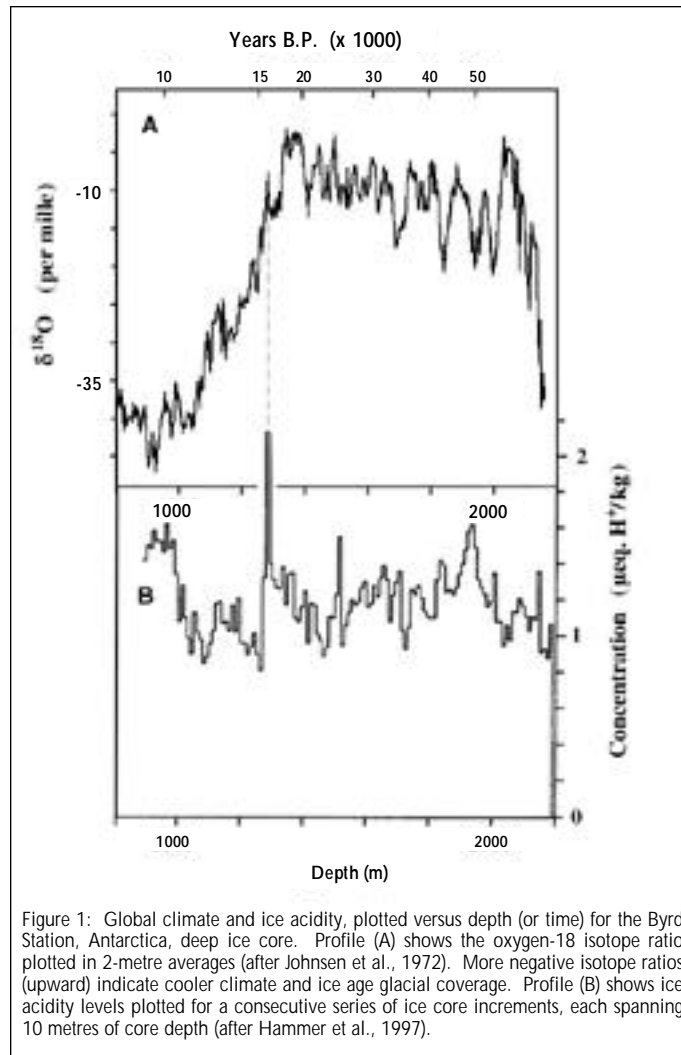


Figure 1: Global climate and ice acidity, plotted versus depth (or time) for the Byrd Station, Antarctica, deep ice core. Profile (A) shows the oxygen-18 isotope ratio plotted in 2-metre averages (after Johnsen et al., 1972). More negative isotope ratios (upward) indicate cooler climate and ice age glacial coverage. Profile (B) shows ice acidity levels plotted for a consecutive series of ice core increments, each spanning 10 metres of core depth (after Hammer et al., 1997).

ABRUPT CLIMATIC CHANGE

The worst would be yet to come. The superwave cosmic ray wind would vaporise frozen cometary debris that surrounds our solar system and blow this dust and gas inward. Analysis of Greenland ice cores has shown that the solar system was filled with large concentrations of cosmic dust during the last ice age.¹⁰

As this nebular material entered the inner solar system, it would scatter sunlight so that a portion of the Earth's radiation would come from a uniform glow filling both the daytime and night-time sky. It would also redden the solar radiation spectrum. Since our atmosphere is opaque to infrared radiation, these changes would tend to warm the upper atmosphere and cool the ground, producing inversion conditions that would induce severe storm activity and rapid precipitation of sleet and ice. Moreover, as this material crashed onto the Sun's surface it would energise the Sun, increasing its luminosity and its cosmic ray output.

All of these effects together would dramatically affect the Earth's climate.^{1-4, 9-10} On some occasions, it would produce a prolonged cold spell or even initiate an ice age if one were not already in progress; at other times, it could produce a period of excessive warmth which could terminate an existing ice age or produce a brief interstadial. The geologic record reveals that our planet has been plagued by ice ages for most of the past several million years. The warm climate that we have been enjoying during the current 11,600-year-long interglacial has been accompanied by an equally long respite between superwaves. However, interglacials, and respites between major superwave onslaughts, have rarely been as prolonged as the one we are fortunate enough to be experiencing. The next superwave, which appears to be overdue, could throw us headlong into a new ice age.

The Earth's polar ice record contains evidence that the Sun was in fact very active at the end of the last ice age. Glaciologists, for example, have studied the acidity record at Byrd Station, Antarctica, going back 50,000 years and found one section, dating from near the end of the last ice age, in which ice acidity levels rose far higher than in any other part of the ice record (see figure 1).^{12,13} These levels exceed by 20-fold the amount of acid fallout deposited by the largest known volcanic eruption. This discovery confounded scientists, not only because of its magnitude but because it lasted an entire century with the acidity fallout waxing and waning in regular cycles. No volcanic eruption has been known to do this. Nevertheless, they realised that this event must have had a substantial climatic impact, for it occurred at the beginning of a major global warming trend that ultimately ended the ice age.

However, upon examining these acidity findings, I noticed something that apparently had been overlooked. When the ice record is properly dated, it shows that these acidity peaks recur on the average every 11 years, matching the period of the sunspot cycle. This indicates that these high acidity concentrations most probably originate from the Sun rather than from volcanic eruptions.¹⁴ But, to make such a pronounced and singular solar cycle imprint in the ice record, the Sun would have to have been far

more active than it is at present. The solar wind outflow at that time would have to have been at least an order of magnitude more intense than it has been in historic times, with solar flare activity comparably elevated and the Sun somewhat more luminous than the Sun of the current interglacial.

This evidence of an active Sun heralding the deglacial warming trend confirmed a scenario that I had proposed back in 1983; namely, that our Sun had become significantly energised by incoming cosmic dust and as a result caused a global warming that ended the last ice age. By cross-referencing the Byrd ice core glacial record with the accurately dated Summit, Greenland, ice core record, I was able to determine that this event spanned a period of 95 years stretching from about 13,880 to 13,785 BC. The finding also underlines the importance of the 13,860 years BC date encoded in ancient constellation lore (see box headed "Message in the Sky").

This discovery that the Sun was highly energised at the end of the last ice age confirms an earlier discovery made by NASA scientist Herbert Zook and his team.¹⁵ Based on the record of solar flare tracks etched in the surface of Moon rocks, they concluded that 16,000 years ago solar flare activity was up to 50-fold higher and that it rapidly declined in the following millennia. I have suggested that solar activity had reached a peak around 12,200 BC, when global warming was at a maximum, and also briefly around 10,700 BC at the time of the Late Pleistocene mass extinction—an event that appears to have been solar-induced.⁴ The period of several thousand years between the time of the solar wind event and these dates would have been a time when solar activity was building up to its climax.

Concerned about the potential climatic hazards associated with galactic superwaves, the chairman of the United States Senate Committee on Commerce, Science and Transportation voiced interest in my proposal to carry out a thorough investigation into the climatic implications of the galactic superwave phenomenon. In September 1984, he wrote the following letter to the Director of the National Science Foundation:

Dr LaViolette has presented to the Committee extremely interesting research results and scientific papers written on experiments conducted at Portland State. His research addresses the abrupt changes that have occurred over geological time. He hypothesizes that such changes are the result of sudden incursions of cosmic dust into our solar system, causing dramatic temperature changes.

I am interested to know if research in major climatic shifts is presently being funded by NSF and, if so, are the investigators aware of Dr LaViolette's hypothesis. Needless to say, the phenomenon of sudden climatic shifts has enormous import to all of us, and all reasonable hypotheses should be carefully examined.

The NSF and other government science institutions, however, have failed to fund research into this important phenomenon. Academia, with its uniformitarian bias, also has done nothing to pick up the ball.

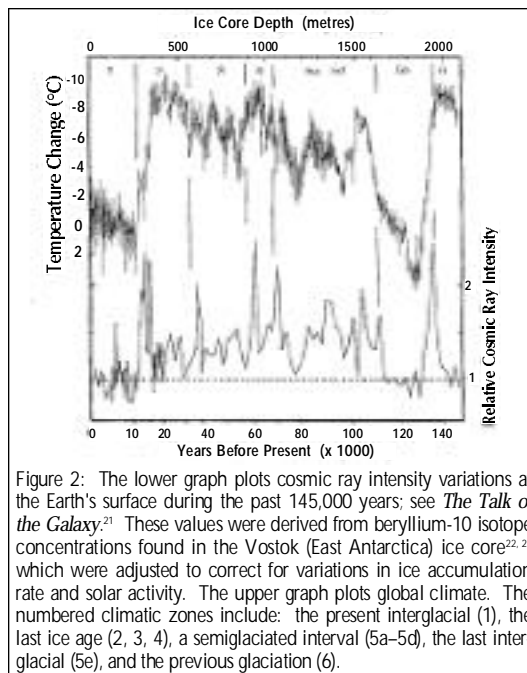


Figure 2: The lower graph plots cosmic ray intensity variations at the Earth's surface during the past 145,000 years; see *The Talk of the Galaxy*.²¹ These values were derived from beryllium-10 isotope concentrations found in the Vostok (East Antarctica) ice core^{22,23} which were adjusted to correct for variations in ice accumulation rate and solar activity. The upper graph plots global climate. The numbered climatic zones include: the present interglacial (1), the last ice age (2, 3, 4), a semiglacial interval (5a-5d), the last interglacial (5e), and the previous glaciation (6).

MESSAGE IN THE SKY

The discovery of this 13,880 BC century-long solar event validates the significance of a date encoded in prehistoric constellation lore. In 1976, I discovered that zodiac constellation lore used cryptographic techniques to convey metaphorically the notion of explosive matter-energy creation.¹⁶ Later, in 1979, I discovered that the constellations of Sagittarius and Scorpius used pointers—Sagittarius's arrow and Scorpio's stinger—to designate the centre of our galaxy, indicating it as the site of this explosive outburst. In particular, the Sagittarius arrow pointer encoded a prehistoric date.⁴

Ancient myth specifies that Sagittarius is shooting at the heart of the Scorpion, represented by the star Antares (Alpha Scorpius). But the arrow shaft presently is not properly directed at Antares, since the stars outlining the shaft have moved considerably over the millennia. By specifying this sighting trajectory, the Sagittarius myth would be challenging future scientists with knowledge of the slow movements of the stars (so-called stellar *proper motion*) to determine the important past date when this arrow pointer was correctly aimed.

As I discovered, this date turns out to be about 13,860 BC. Since this same arrow indicator is pointing out the location of the centre of our galaxy (to within 0.3 degrees of arc) and is also a key part of an encoded message referring to an explosive outburst, I naturally concluded at that time that the astrological zodiac is attempting to tell us that a galactic core explosion began to bombard our solar system around the time of that past date.

This ancient zodiac cipher provided me with the initial impetus to investigate the superwave phenomenon as the subject for my PhD thesis. Understand that, in 1979, the idea that a galactic core explosion may have affected our planet in such geologically recent times was the furthest thing from the minds of astronomers or geologists. So, were it not for this zodiac message, I would have had no clue that this phenomenon might have occurred. Because of this uncertainty, I was carrying out my PhD research partly to see if there was any truth to the galactic explosion message that the zodiac cipher seemed to portray so clearly.

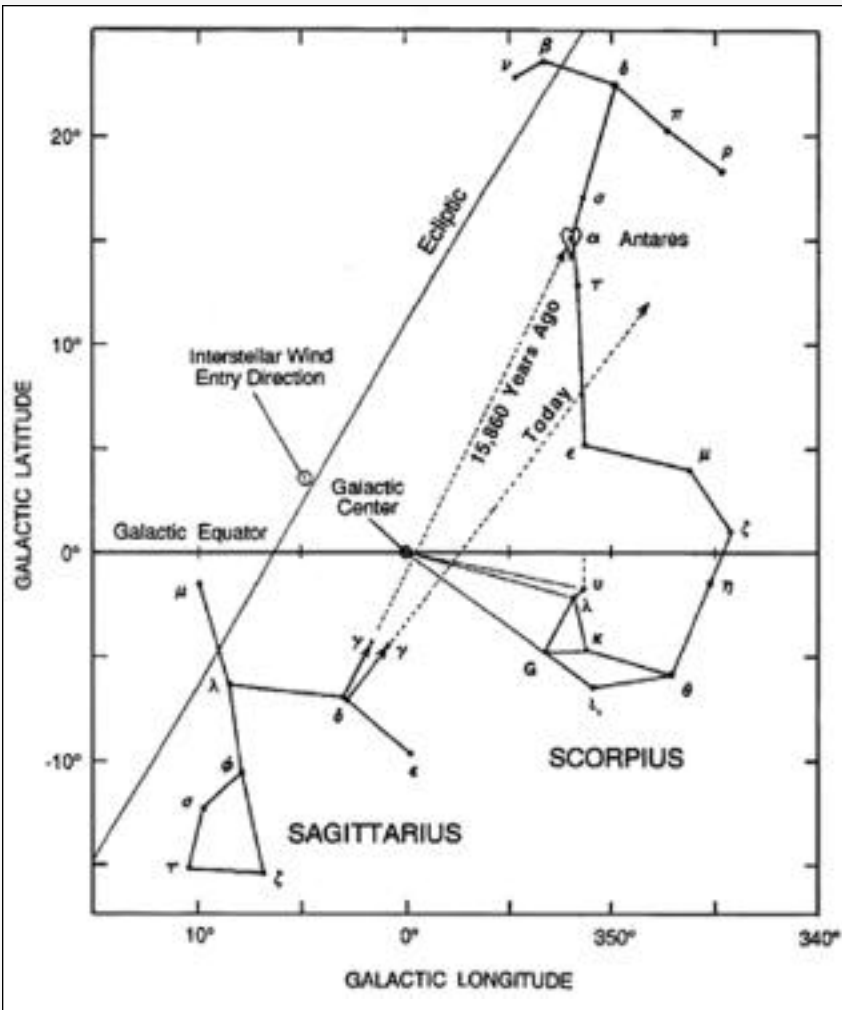
The other reason for my investigation was that if the message were valid and evidence showed that our planet had indeed recently experienced a superwave, and that these bombardments occurred relatively frequently, then this discovery would be exceedingly important for human survival. For sure, it would be one of the most important discoveries of modern science.

I do not stand alone in my interpretation of the zodiac cipher. Many have checked my conclusions. Also, some have

themselves tried their hand at deciphering the zodiac cryptogram and have succeeded. The first part of the cipher is presented at the Sphinx Stargate website (www.etheric.com) in the form of a puzzle which has become a popular challenge for webservers to decode. It helps to have a familiarity with general systems theory concepts.

Of course, there will always be sceptics who will be unable to see that the zodiac signs do in fact present a sophisticated astronomical warning message. But, the superwave theory has made many *a priori* predictions which later were validated by me and others. Considering also that the theory has been successful at accounting for observations in over seven scientific disciplines, the idea that I hit upon this theory just by luck seems a bit far-fetched.

Moreover, while a sceptic might argue about the interpretation of the zodiac's symbolism, the date indicated by the Sagittarius arrow trajectory is quite unequivocal, being based on simple astrometry. Certainly, it is not just luck that 21 years later we discovered that this arrow indicator date coincides with the time of a major astronomical event—an immense solar expulsion, unprecedented in the past 50,000 years, which heralded the beginning of the global warming which eventually ended the last ice age.



AS A THIEF IN THE NIGHT

In 1983, when I first proposed the idea that cosmic ray volleys are able to propagate to the Earth at close to the speed of light, my suggestion mostly fell on deaf ears. But it was not long before evidence came forward to support my hypothesis.

In 1985, astronomers discovered that Cygnus X-3, a strong cosmic ray source lying about as far away as the galactic centre (25,000 to 30,000 light years), was showering the Earth with high-energy particles. They found that despite the galaxy's magnetic fields, these particles were able to reach the Earth at the speed of light following arrow-straight paths.¹⁷

Several years later, scientists found that the Earth was also being showered by particles from another high-energy source, the X-ray pulsar

Hercules X-1.^{18,19} The particles were found to come in bursts spaced by 1.2357 seconds, closely matching the pulsar's intrinsic period. Even though this source was 12,000 light years away, the intervening interstellar medium had such a minor effect on the bursts that their pulsation period was constant to within 300 microseconds.

Additional supporting evidence for my superwave theory came in January 2000 at the 195th meeting of the American Astronomical Society, held in Atlanta, Georgia. A group of radioastronomers presented findings indicating that the synchrotron radio emission coming from galactic centre is circularly polarised.²⁰ The speaker said he found this result to be "mysterious", since all other galactic cosmic ray sources emit synchrotron radiation that is instead linearly polarised. During the question period following their lecture, I pointed out that their findings of circular polarisation could be easily explained if the cosmic rays producing this radiation were streaming radially towards us over a long flight path. Linearly polarised radiation observed from most galactic sources is instead produced by cosmic rays which are magnetically captured into relatively stationary spiral orbits. Other astronomers present at the meeting agreed with this radial trajectory interpretation.

These findings are reason to be gravely concerned about the effects of a galactic core explosion. They imply that the generated cosmic rays can impact our planet, virtually without warning, preceded only by the wave-flash from the initial explosion.^{1,3} Because they travel at the speed of light, superwave cosmic rays remain cloaked and hidden from our view until the very moment they strike.¹⁴ Their long journey towards us, as they cross the 23,000-light-year distance that separates us from the

galactic centre, would go entirely undetected. In effect, we live on the edge of a "galactic volcano", knowing not the time, magnitude or severity of the next eruption or what impact it will have on our environment. We stand unprepared to deal with such an event, much less anticipate its arrival. Whether a superwave may strike several hundred years from now, some time in the coming decade or during this year, there is really no way to tell.

We can get an idea of the frequency of these events by investigating the Earth's polar ice core record which registers the arrival of previous superwaves through elevations in the concentration of

the beryllium-10 isotope found in the ice (see figure 2).

Several years before this data became available, my 1983 dissertation had ventured that superwaves recur about every 10,000 years and

that a major event had passed the solar system beginning about 14,200 years ago and lasting about 2,000 to 3,000 years. The beryllium-10 data indicates that this estimate was not far off strike. The record indicates that major superwave events arrive on the average every $26,000 \pm 3,000$ years, but sometimes can recur after as little as 10,000 to 13,000 years.⁴ Also, it shows that the last major superwave climaxed between 14,500 and 11,500 years ago. Gas motions at the centre of our galaxy^{24,25} as well as other astronomical evidence^{1,3} indicate that the cosmic ray barrage ending the last ice age indeed originated from a major explosion at our galaxy's core. Given that superwaves have recurred after

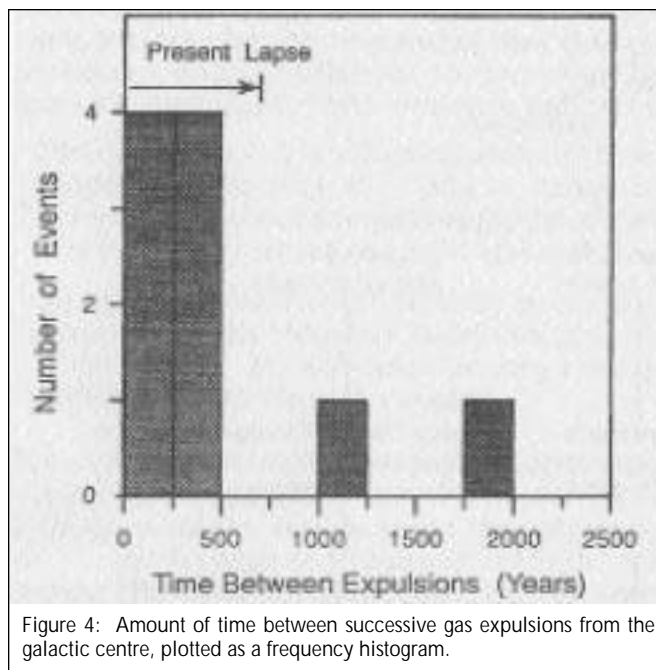
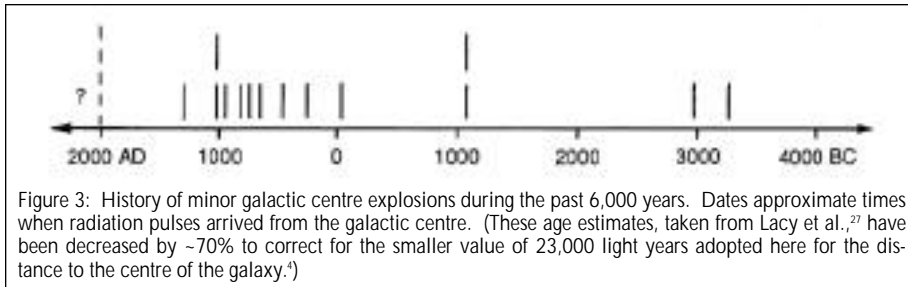
lapses of as little as 10,000 years, it is prudent to conclude that we are currently due for the arrival of another event.

The polar ice record data presented in figure 2 also show that glacial periods correlate with intervals of high cosmic ray activity, with cosmic ray peaks preferentially coinciding with climatic boundaries. This establishes that there must be a causal connection between superwaves and climate, and suggests that superwaves are active in both initiating and terminating ice ages. Also, if the solitary elevated beryllium-10 data can be trusted, there may be evidence that a very brief low-intensity superwave passed us around 3300 BC. Interestingly, this falls at the close of the Neolithic period and precedes the rise of

civilisation with Old Kingdom Egypt, beginning circa 3100 BC.²⁶

LESSER GALACTIC SUPERWAVES

The galactic centre may also flare up frequently between major superwave events. Astronomical observation indicates that during the past 5,300 years the galactic centre has expelled 14 clouds of ionised gas.²⁷ The dates estimated for these expulsions are shown



on the timeline in figure 3. Such minor superwaves would be not be sufficiently strong to generate beryllium-10 peaks visible above background levels. Their associated EMP, however, could be so strong that if one such event occurred today it would pose a hazard to modern electronics and communications unlike anything we have witnessed thus far.

About 80 per cent of these emissions took place within 500 years of one another (see figure 4). Yet, it has been 700 years since the last event, so there is a high probability of another one occurring in the near future.

TAKING ACTION

We must seek ways to anticipate the arrival of the next superwave. We must also begin developing technologies for creating a force-field shield in space, capable of deflecting the trajectories of approaching cosmic rays. The technology of phase-conjugate microwave beam interferometry, which today is being pursued in black-budget defence projects for missile defence applications, might one day be used to create such shields.²¹

Meanwhile, perhaps we should be doing all that we can to recruit the assistance of other civilisations in our galaxy. Galactic superwaves should be a hazard known to them as well. As I demonstrate in my book, *The Talk of the Galaxy*, ETI signals are in fact being beamed towards us, but astronomers have mistaken these pulsating beacons as natural objects.^{21,28} What is the topic they have picked to discuss? The answer should not surprise us. Through their symbolic sky positions and encoded pulse period

relations, they appear to be warning us about the superwave phenomenon—or, more specifically, about the event that passed us at the end of the last ice age. But, this is a whole other story.

About the Author:

Paul A. LaViolette, PhD, has had many original papers published in physics, astronomy, climatology, systems theory and psychology. He is the author of *The Talk of the Galaxy: An ET Message for Us?* [see review this issue], *Earth Under Fire* [reviewed in 6/02], *Beyond the Big Bang* and *Subquantum Kinetics*, and the editor of *A Systems View of Man*.

Apart from being the first to identify the galactic centre superwave phenomenon, Dr LaViolette has made predictions about galaxy evolution which have been verified since by the Hubble space telescope. He discovered the planetary/stellar mass luminosity relation which shows that the Sun, stars and planets may be powered by energy spontaneously created through photon blueshifting. He developed a subquantum theory of gravity that replaces general relativity and a theory which links past geomagnetic flips to immense solar flare storm outbursts. He also holds two patents on an improved life-support rebreather apparatus. Dr LaViolette has an ongoing interest in metaphysics, music and mysticism, and has identified an advanced cosmogenetic science encoded in certain ancient creation myths.

Dr LaViolette is Founder and President of the Starburst Foundation, an interdisciplinary scientific research institute. This is a 501(c)3 non-profit institute supported by charitable donations. For additional information on his work and how to support the Foundation, and to order books and videos, visit the website www.etheric.com or phone +1 (703) 256 7337 or 1800 715 9993 (ordering line, toll free in North America).

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Galactic superwaves should be a hazard known to them as well.

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THE DEEP DWELLERS

The subterranean dwellers of various ancient religious and mythical traditions have parallels with the underworld beings of modern-day accounts.

Part 1

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SUBSURFACE INHABITANTS IN FOLKLORE, MYTH AND LITERATURE

The legends, myths and literature of mankind have always been filled with fanciful or terrifying accounts of underground lands and races, hidden from surface sight. Rumours of a largely unseen reality, of cavern worlds, hidden tunnel systems which criss-cross the globe, and the occasional accidental discovery of a large geode structure within the Earth, have migrated from the realms of folklore and early scientific speculation into literature—and perhaps back into folklore again.

When reading and studying the available fiction which touches upon the topic of a subterranean world, many similarities come to light. This is interesting insofar as the various writers were not necessarily familiar with one another's works. It is obvious that many of them drew upon folktales and mythology as well as the latest scientific findings and theories of the day; indeed, they had a huge matrix of archetypes and forms with which to work.

Religious traditions have also been a major influence on the development of fiction about subterranean worlds and inhabitants, and some brave souls have shared accounts of what they believed to be their own encounters with the denizens that dwell within the Earth's crust.

In this work, all of these aspects of underworld studies, and more, will come under careful examination, but this is not so much an examination of the underworlds as it is of their inhabitants.

MYTHICAL (ANCIENT RELIGIOUS) ACCOUNTS

1. The East

One of the earliest examples of subterranean stories is to be found in the Gilgamesh cycle of stories, which some would say is not so much fictitious as it is a distorted account of ancient events.

Gilgamesh was an actual king who ruled Uruk (also called Unug) about 2600 BC, and he was supposedly of half-divine origin. Like other heroes of ancient mythic cycles who were demigods, or semi-divine, Gilgamesh longed for an immortality which he saw as his birthright, much the same as Heracles of the Greeks. In one tale from his cycle, he befriends a physically powerful, hairy, subhuman character named Enkidu and teaches him the customs of humanity. In a later tale, Enkidu, on behalf of his friend and king, agrees to venture into the underworld of ancient Mesopotamia to search for someone who has the secret of immortality.

Other Sumerian accounts leave little doubt that the Kur or Ki-Gal ("the Great Below") was a place of immense size and great terror. This realm was ruled by the goddess Ereshkigal and her consort Nergal, a warlike god who had entered her queendom with plans of conquest—only to be seduced by the enemy, who became his wife. The Ki-Gal was said to be filled with a wide range of beings, including spirits and the undead, reanimated bodies of human beings as well as savage guardians called "scorpion men".

Other residents were described as sexless and robotic "artificial" beings called Galatur or Gala, who were used by the rulers of the underworld for missions of kidnapping human beings from the surface world or for other errands. Also present in the underworld were the Utukku, "eagle-headed" reptilian humanoids who are probably the original Djinn and Ifrits of the ancient Middle East. The latter beings were usually depicted with wings, representing their ability to fly when dispatched on the errands of the rulers of the underworld. Another strange race was the Pazuzu, a canine-faced humanoid monstrosity with reptilian scales and tail.

All of these are motifs which in one form or another have been found to permeate nearly every ancient underworld tradition and also have found their way into folklore and literature.

The Asian region, particularly the Indian subcontinent, Tibet, Nepal, China and Japan, has very similar traditions about subterranean inhabitants.

In India, there is still a strong belief in the reality of the Nagas—a race of "serpent people" or "lizard men" who have made their homes in two major underground cities (or civilisations), Bhogavati and Patala.

Bhogavati is believed to be underneath the Himalayas, and it is said that from there the Nagas wage war on other human subterraneans from the subsurface kingdoms of Agharta and Shambala.

Patala is believed by millions of Hindus to this day to have an entrance in the Well of Sheshna in Benares. According to herpetologist and author Sherman A. Minton in his book, *Venomous Reptiles*, this entrance is very real, having 40 steps which descend into a circular depression and then terminate at a closed stone door covered in bas-relief cobras. In Tibet, there is a major mystical shrine, also called Patala, which is said by the people there to sit atop an ancient cavern and tunnel system which reaches throughout the Asian continent and possibly beyond.

The Nagas are believed to have an affinity with water, and the entrances to their underground palaces are said to be hidden often at the bottom of wells, deep lakes and rivers. They are described as a very advanced race or species with a highly developed technology. Among their many devices are "death rays" and *vimana*—flying, disc-shaped aerial craft which are described at length in many ancient Vedic texts including the *Bhagavad-gita* and the *Ramayana*. The Nagas are also believed to harbour a disdain for human beings, whom they are said to abduct, torture, interbreed with and even eat. The interbreeding has supposedly led to a wide variety of forms, ranging from completely reptilian

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to nearly human in appearance. The Naga race is related to another underworld race: the Hindu demons, or Rakshasas.

The Nagas are also said to possess, as individuals, a "magical stone" or "third eye" in the middle of their brow. This is known to students of eastern mysticism as the focal point of one of the higher chakras (energy channel points) of the human(oid) nervous system, and is the chakra associated with inner visions, intuition and other esoteric concepts.

In China, the Lung Wang (Dragon Kings) closely resemble the Nagas in many respects. The Lung were said to dwell either in the "celestial realm", i.e., the stars and planets, or beneath the surface of the Earth. They, too, were said to possess a "magical pearl" in their forehead—a "mystical" or divine eye or source of power. Like the Nagas, some of the entrances to their palaces or kingdoms could be found beneath lakes and rivers or behind waterfalls. Almost always, such entrances were well hidden from the intrusive eyes or feet of mortal men and women. One such entrance to the Chinese underworld was said to be in the "Eastern Mountain" of Taishan, near Qufu province. This entrance to the Chinese Hell was guarded by savage demons called Men Shen, often depicted as warriors wearing fierce, animalistic masks or faces.

There was also interaction between the Lords of Hell, as they were known, and the Dragon Kings. The four Hell Kings, called Yan Luo or Yen Wang (possibly derived from the Hindu death god, Yama), ruled over a vast region consisting of 18 levels or locales. In one tale, a Dragon King is robbed by an extremely clever and human-like Monkey, who is similar in many respects to the Hindu Hanuman (who in turn came into conflict with the Rakshasas of the underworld in the *Ramayana*). Enkidu also comes to mind in this tale. The Dragon King calls on the help of the Yan Luo, who are in turn bested by Monkey as well. The 18 regions of the Chinese netherworld are bureaucratic, tedious systems or civilisations and an apparent mixture of Taoist and Buddhist ideas, with a strong influence from the latter.

The Japanese Hell is even more of an amalgam of different traditions, as it incorporates Chinese, Hindu and Buddhist characteristics into an earlier, animistic Shinto system. Emma-Hoo (perhaps from Yama-Raja) is the king of Jigoku, an eight-levelled region of fire and ice. Jigoku is filled with Oni, or demons, which have the heads of oxen or horses but humanoid bodies.

Japan also has other cavern-dwellers who come out upon occasion. The bird-headed reptilian goblins, the Tengu, dwell in mountainous regions and mostly come out by night. They are experts in the use of the weapons which are in modern times associated with ninjitsu. According to legend, the



A reptilian humanoid in the underworld

Tengu trained Minamoto Yoshitsune, a famed Samurai swordsman of the late 12th century, when he was an exiled boy on the run from his enemies. The Tengu are almost identical in description to the Utukku of Sumerian myth.

Other beings are the Kappa, a semi-aquatic and totally reptilian-looking humanoid dwarf, the "ugly girls of hell" and sundry other shapeshifting entities who dwell underground or under houses. The "fox people" are among the latter, often taking human form and delighting in abduction and seduction of mortals.

The underworld of ancient Egypt has many things in common with its Mesopotamian counterpart. Called the Tuat or Duat, it was ruled by the god of the dead, Osiris, the counterpart of Sumer's Nergal. It is the servants of Osiris, however, who are of concern here. There was the jackal-headed god Khentimentiu and also Anubis, both gods of arcane knowledge, embalming and other sciences. The god of knowledge, Thoth, was also a regular in the Tuat; he had a humanoid form with the head of a baboon (but very canine in appearance). All three of these deities bear a strong resemblance to the Sumerian Pazuzu.

There is also a parallel in the Ushabtiu, originally conceived as artificial, animated and robotic servants who were very similar to the Gala, or Galatur, of the Sumerian underworld. Like the Gala, the Ushabtiu could be dispatched to punish or abduct an ordinary mortal or even the Pharaoh himself. These beings were represented in Egyptian burials by small statues of the same name, mimicking the supernatural servants of Osiris and hopefully providing a retinue of retainers and slaves for the deceased.

Another being with familiar characteristics was Ammut, a blend of crocodile, lion and dog. But possibly the most feared being to haunt the underworld was the god of chaos and strife, Set or Seth, who attempted to mount a *coup d'état* against his brother, Osiris. Set is often considered to be the Egyptian counterpart of the Judaeo-Christian personality known as Satan, his appearance both canine and reptilian with a human form but animalistic head, long-snouted and/or muzzled. The hugest dragon of the Tuat, however, was the gigantic serpent Apophis, very similar to Nidhoggr or Jormungand from the Norse underworlds—a monstrous serpent which brought fear even to the gods.

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2. The West

Moving into Europe and Scandinavia, the mythical subterraneans became less distant and more immediate, interacting with the common folk on a much more regular basis.

Scandinavians had their trolls and giants or Jotuns, also called Etins, who were great granitic beings of immense physical power and sometimes hairy of form. More mysterious were the dwarves, a race (or races) of stunted, powerful craftsmen and weapons-smiths. One race of dwarves was from Svartalfheim, the Land of the Dark Elves, a cavern world in its own right. Some of the Svartalf dwarf-kind lived in Nifleheim, the Land of the Dead. Along with the savage and man-eating trolls, the dwarves would turn to stone, into toads or otherwise die if struck by the direct rays of the Sun. More often than not, the entrances to their

homes were hidden in inaccessible mountainsides and other remote locations.

The Scandinavian and Germanic peoples also believed in the Huldre, the "hidden folk", or Elves. The Huldre domain was a luminous cavern realm called Alfheim. From Alfheim they would venture forth to cajole, abduct or seduce human beings. Other beings were the Kobolds, or mine dwarves, perhaps a variant of the Norse Svartalf. Another type was the Tusse, a variant of elf who lived close to humans, usually beneath or close to a farmstead.

The primary interest of the Huldre elf-folk, which could be said to apply to all the Germanic types, seems to have been procreation with human beings for the purpose of maintaining genetic diversity. Like

the trolls and dwarves, the elves seemed to dislike bright sunlight, but may have had more tolerance than their troll and dwarf cousins as they were sometimes seen at dawn, twilight or dusk, or by day in deeply shadowed valleys or mountain chasms. Huldre elves in particular are said to have dwelt beneath mounds and hills which were in closer proximity to human habitations, as trolls did more rarely. The elves took a regular interest in human affairs—weddings, births and deaths (bloodlines?), the success of crops and livestock and so forth—but only for their own selfish

More mysterious were the dwarves, a race (or races) of stunted, powerful craftsmen and weapons-smiths.



A hero fighting a scaled humanoid creature similar to a Greek gorgon. Note the creature's "third eye".

interests. They seemed to be overly concerned with genetic and biological diversity, and they pilfered livestock, crops and human genes via theft or cross-species liaison whenever they saw fit to do so. The elves are generally depicted as extremely fair-haired and fair-skinned.

Dragons were also said to live deep in the Earth, as recounted in the Anglo-Saxon (Germanic) saga of Beowulf. The monster Grendel was a hairy, scaled fiend, a Naga troll which later British traditions would call a "goblin" and modern cryptozoologists would term a "hairy humanoid". The term Pazuzu would probably have been just as appropriate for Grendel. Dragons were the special guardians of "buried treasure"; that is, buried knowledge or technology, much of it often made by the powers of the subterranean dwarves. The European dragon had a nastier disposition than his oriental counterpart, or perhaps he came into conflict with a group of people who entertained different philosophical ideals when it came to living in fear of man-eating entities; but whatever the case, like his Eastern cousins he had a relationship with both underground caverns and deep bodies of water.

England, Scotland, Wales and Ireland have rich traditions of under-earth dwellers, with many similarities or even common origins between them. Like the Norse/Germanic variants, the "fairies"—goblins, trows, knockers, brownies, leprechauns, Sidhe (shee), Tylwyth teg (terlooeth teig), and numerous other categories of humanoid beings—were fair or foul, malevolent or kind (actually, indifferent), making their homes almost without exception beneath the ground. Mounds, hills, ruins, ancient raths and hill-forts, mountains, cliffs and even cities of great age were said to serve as the rooftops of their palaces.

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Like the Nagas and dragons, some had the entrances to their subterranean homes at the bottom of lakes. To remove all doubt as to their relationship with Norse hidden-folk and Indian Nagas alike, they shunned the sunlight and often seemed interested in crossbreeding their own bloodlines with those of human beings, or even in crossbreeding their "livestock" or fairy cattle, horses, hounds and so forth with the surface species which were most compatible.

The goblin-dwarf Rumpelstiltskin, in his lust to have the human baby and its genetic bounty, is another example of this in German folklore.

Of particular interest are the Tuatha de Danaan of Ireland, the People of the Goddess Danu, also called the Sidhe. Originally an aristocratic warrior race of heroic proportion, they dwindled in size after retreating underground to become the Daoine Sidhe (Theena Shee) or diminutive faeries of Irish folklore. Most of the "gentry" or aristocratic trooping faeries are said to be of this type. Like the Scandinavian elves, they are depicted as particularly fair of complexion and hair. According to Lady Wilde in *Ancient Legends of Ireland* (Ward & Downey, London, 1887), "they are categorised as 'cave fairies'". In addition to their now familiar practice of abduction of and hybridisation with surface humans, their name Tuatha ("tribe" or "people") de Danaan holds a strong resemblance to the Egyptian name for the underworld: the Tuat. It is generally thought that the term

"fairy" or "faerie" has its origin in the earlier French term *fay* or the Latin *fatae*, but the possibility of an older origin, as hinted at by the Tuat/Tuatha connection, may in fact bear further examination—for did not the "Pharaohs" believe that they would journey through the Tuat on the way to their places in eternity?

The hills and glens of Ireland are also said to hide the remnants of at least three vanquished races: the Firbolgs, the Fomorians and the Nemedians. All are ancient enemies of the Tuatha de Danaan and were driven underground by the latter in the distant past, where they then dwindled in size (lack of genetic diversity?) at an even earlier time than did their conquerors. The Fomors and the Firbolgs are probably the origin-race of many of the bogeys and pookas (bucas), goblins and hobgoblins, Scottish trows and other malevolent, sometimes shapeshifting beings which seem to bear strong resemblance to the Scandinavian trolls, being perhaps a smaller variant. The etymological connection between "trows" and "trolls" is obvious, and reflects the sequence of both legendary and historical migrations to the British Isles as well as the wars between each newcomer group and the then-conquered one.

Each group of faeries and goblins can be viewed as the dethroned exiled gods of an earlier defeated human culture. The question is, what or who were these "gods" which still exist in the popular imagination today? Were they symbolic pantheons or archetypes, or living beings who pre-dated man on this planet?



Two examples of Utukku (Djinn or Genii), dispatched from the Ki-Gal to the surface world.

3. The New World

Native American cultures have similar beliefs in an extensive, layered realm of caverns which is hidden beneath their feet. This murky world is believed to be inhabited by both human and humanoid beings and by a variety of monsters and demons.

Most tribes or nations have their own traditions of subterranean "little people", as well as other motifs including reptilian or serpent-like humanoid beings. In addition to this, many tribes believe that they themselves emerged from a mythical underworld ages before.

The Mescalero Apache have many of these beliefs. One of their oldest sacred traditions states that they came from the Old Red Fire Land before the Great Flood. This land is said to have been in the distant eastern (Atlantic) sea but was destroyed by a combination of deluge and volcanic cataclysms. Escaping through "great caverns" and tunnel systems, the ancestors of the Apache came to high mountain lands far to the south, where they built new cities. A series of misfortunes there, however, eventually drove them northward.

This legend is nearly identical to the origin story as related in the *Chilam Balam* of the Maya, and brings to mind both Mayan and Aztec origin myths. The Aztecs say that they originated in a land called Aztlan, obviously synonymous with Atlan or Atlantis, the destruction of which they also escaped. After this, they ended up in a cavern world called Chicomoztoc, or the Seven Cavern Cities of Gold, where they lived for some time before emerging again into the surface world.

In addition to believing in a vast, nine-layered underworld filled with strange beings, the chief god of the Maya, called Itzamna (meaning "iguana house"), was depicted as an anthropomorphic lizard, snake, cayman or dragon. The underworld dwellers were a mixture of human, reptilian and other animal characteristics, and the rain-god Chac was a long-nosed, fanged, humanoid creature very similar to the Egyptian god Set.

The underworld, called Xibalba, is the location of most of the action in the *Popol Vuh*, a priestly epic of the Maya. In the *Popol Vuh*, two semi-divine brothers, Hunapuh and Xbalanque, have to journey into a realm of horrors beneath the earth in order to defeat those who are the enemies of their father and his family and who threaten their own ascendancy to power. In Xibalba, they come into conflict with Zipacna (a crocodile-headed monster), Seven Macaw (a bird-headed creature), the maker of earthquakes, and other familiar forms. An interesting event occurs when the vengeance-seeking brothers devise a way to pick out the 12 lords of Xibalba from identical "mannikins" or robotic Ushabti-like figures, so as to destroy the lords of the underworld. The twins eventually defeat their rivals and take over the rulership themselves, bringing an end to human sacrifice as part of the deal. These events preceded and made possible the "modern" epoch of time.

The Hopi of the southwest desert, descendants of the mysterious Anasazi people, have an equally strange tradition. They believe that as a people they migrated from a series of previously extant "worlds"—usually interpreted as "ages" or "epochs", but

they also see these as subsequent cavern worlds, each one lower than the next and each one eventually abandoned and destroyed in turn. While still in the murky "third world", the Hopi ancestors came into contact with the mysterious "ant people", an ectomorphic race or species which greatly resembles the Gala of Sumerian myth, and at some point they also came into conflict with the "ser-

pent people". Like other tribes, their underworld mythos is filled with cataclysms and floods. At least one of their previous worlds was said to have been "in the east". Combined with the flood element, this legend is very similar to Apache and Aztec traditions.

The Choctaw (Cha'ta) people of Mississippi also have a myth of underground origins. They believe that their ancestors emerged from the Nanih Waiya cave mound, a 50-foot-tall natural geological formation which is hidden in a swampy forest area, approximately one-and-a-half miles east of a better-known artificial mound and tourist site. The hill has several natural openings, some of which have been "sealed up" (the Park Service seems to have no good explanation for this), and it is said by the Choctaw to be the entrance to a vast underground realm.

One legend has it that in ancient times the Choctaw were invaded by a race of red- and blond-haired, white-skinned giants who bore "sharp clubs" (swords?) and axes and wore an extra, thick skin (chain or leather mail?) which made them impervious to arrow, spear

and warclub. Add the touch that some of these Nahullo, or giants, had "horns", and these white invaders sound suspiciously like wandering Norsemen. Whatever their origin or identity might have been, these invaders drove the Choctaw into hiding.

The world beneath the cave mound where the Choctaw hid was a large series of caverns through which a river or rivers ran (the

The underworld dwellers were a mixture of human, reptilian and other animal characteristics, and the rain-god Chac was a long-nosed, fanged, humanoid creature very similar to the Egyptian god Set.



Tengu, Japanese bird-headed (reptilian) humanoids

Nanhi Waiya cave mound sits squarely at the headwaters of the Pearl River). Some traditions indicate that it went on to connect to other "worlds" or underground places. Staying underground for many generations, the Choctaw emerged to wage a form of guerrilla warfare on their enemies, eventually winning by using darts coated with a poison made from mushrooms found in the caverns. Victorious, they emerged again into the sunlit world.

One tradition holds that this emergence of a generation of people born underground is the basis for the mound origin myth, and that the Choctaw had in fact arrived centuries earlier after leaving a "sunken land" which had foundered in a distant western ocean. After many wanderings and travails, they arrived in the southeast where they found the natural cavern mound which would later serve as a place of refuge. But other Choctaw beliefs dispute this, claiming that not just the Choctaw but the Muskogee, Cherokee and Chickasaw peoples emerged from the mound as well, having all been one people in the underworld.

Today the Choctaw still believe that a variety of strange supernatural beings either inhabit the cave mound or dwell in the wooded hills that surround it. One of these is the Shampe, a hair-covered, manlike giant who has a terrible odour and stays underground during the day. The Shampe is a sort of Sasquatch, but the underworld connection is there. Also present are the Kawana-kasha (Kowi Anukasha), also called Bohpoli ("stone-thrower"), a type of supernatural and mercurial dwarf living within not just the woods of Mississippi but within the cave mound itself. Like the Norse dwarves, they are hoarders of vast knowledge.

The mound is also the home of "giant serpents" and perhaps a host of other beings. Among the latter is the Nalusa Falaya, or "long black being", who is humanoid yet slides on his stomach "like a snake". His pointed ears only accentuate his reptilian appearance.

One tradition holds that this emergence of a generation of people born underground is the basis for the mound origin myth...

Another variant is the Nalusa Chito, or "big black being", who emerges from underground dens to capture women and children presumably for supper. This abduction scenario is by now a familiar one and is very similar to the abduction and changeling accounts of Celtic and Scandinavian traditions which often describe abductions for the purposes of maintaining genetic diversity. The goblin Ho'koklonote'she is a shapeshifting creature believed to haunt the region, and is very similar to the Pooka or Buca of the British Isles. So are the Nalusa twins, for that matter.

As has been demonstrated, many similarities or perhaps identical descriptions exist for the underworld inhabitants of myth and folklore.

This underlying cohesion may have resulted from an "archetypal stew" which long simmered in the imaginations of men and women; and as will be demonstrated in the next section, this has resulted in some very interesting and imaginative works of fiction.

Continued in the next issue of NEXUS...

About the Author:

Wm Michael Mott is the Creative Director for a high-performance US software company. He is also a freelance artist and writer of both fiction and non-fiction. He has worked as an artist/designer for Fortune 500 companies and for a variety of book and magazine publishers. His artwork has appeared in publications such as *Computer Graphics World Magazine*, *Computer Artist*, *IEEE Computer Graphics and Applications*, *Dragon Magazine*, *UFO Magazine* and others. He's

created award-winning artwork and graphic design for mass-market book covers, posters, brochures, packaging, CD-ROM covers and art collections as well as for digital/web-based media. His artwork has been featured in the exhibition *In Dreams Awake: Art of Fantasy* at the Olympia and York Gallery in 1988, at the 1987 World Fantasy Con and in other exhibits.

Mott's satirical fantasy novels, *Pulsifer: A Fable* and *Land of Ice, A Velvet Knife*, are published in electronic form by SoftBook Press/Gemstar, (www.soft-book.com) and will soon also be available from the author in a deluxe illustrated version on CD-ROM. The first of a series of illustrated short stories appeared in September 2000 as a chapbook from Undaunted Press (www.undauntedpress.com).

Mott has been researching Fortean and paranormal topics for over 20 years and has only recently decided to put the results of this research into written form, the result being the graphically rich book and CD-ROM, *Caverns, Cauldrons, and Concealed Creatures* (available from website <http://www.hiddenmysteries.com>). Wm Michael Mott can be contacted by e-mail at mottimorph@earthlink.net.

Editor's Note:

The bibliography accompanying this article will be published in a subsequent issue of NEXUS.



Examples of Egyptian underworld deities, the jackal-headed Anubis and Ammut



**REVELATIONS FROM A
FORMER NSA CONSULTANT**
by Richard Boylan, PhD
© November 2000 – January 2001

The following items from Dr Richard Boylan summarise recent disclosures by a former US National Security Agency consultant whom he refers to as "Z" (see TZ 8/01). We have received independent confirmation that "Z" has held a high-level national security position. As a result, we feel readers should be aware of these disclosures so they may decide for themselves whether they ring true or whether they are part of a government disinformation campaign. — Editor

He emerged from his vehicle in the parking lot of a fancy hotel near the shoreline, attired in dress-casual clothes with sunglasses, thrust out his hand and said, "Hi, I'm [Z]" (name withheld in this dispatch). With that, I met face-to-face with one of the highest-level informants in the US national security network. What follows are extracts from our three-hour-long conversation.

Z was deeply concerned about current events in the Middle East. He said that the national security community considers that this is the place where war could soon break out, which would engulf not only the Middle East but draw in Syria, Iraq, Jordan

and possibly Egypt, Turkey and Iran, and also draw in larger powerful states such as Russia and India. Then, with India's attention diverted, China could march into areas of India it considers within its sphere of influence. The Western powers would have to respond, and global war would become a reality.

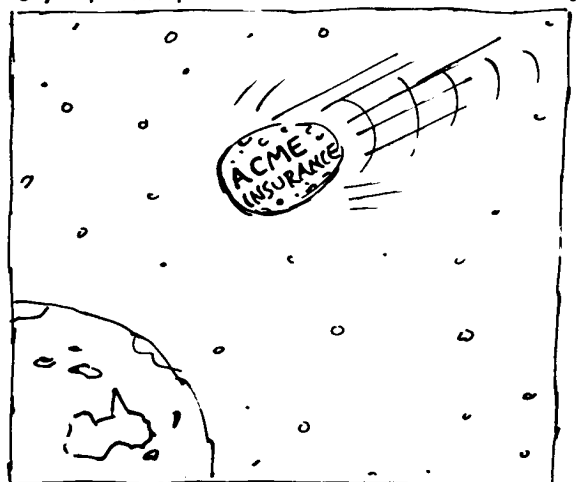
THE TERRORIST THREAT & FEMA

Z said that the intelligence community expects a major terrorist strike within the United States this [northern] winter—most likely a biological warfare agent dispersed across a city of note, or even a nuclear weapon detonated. He noted grimly that 18 Soviet nuclear warheads have gone missing and are most likely in terrorist hands now. He considered anthrax the most likely biowarfare agent to be used, but added that there are other killer microbes also available to terrorists. He said terrorist groups are within the US now.

Z stated that the US is quietly on ThreatCon Delta, the equivalent of the Pentagon's wartime DefCon 4 (active war) alert status.

ThreatCon Delta, the highest level of civilian threat alert condition, has been enacted because biological or nuclear incidents are considered likely to occur at any time now. Because of ThreatCon Delta, classified sections of the National Security Act (amended) and secret presidential national security directives have been activated. "Did you know," Z asked me, "that the President is not in charge now? FEMA [the Federal Emergency Management Agency] is!" I said that this is unconstitutional, and Z replied that the classified laws and national security directives make it legal.

UNTAPPED AD SPACE #4



Somerville

THE TWILIGHT ZONE

We discussed the various huge, underground, city-like installations which are all stocked, staffed and prepared to take in a certain portion of the population in the event of a disaster or terrorist strike happening. Such installations include one under the Kansas City stadium with a capacity to take care of one million selected persons. Many such installations exist and are ready to go.

There is also a "shadow government", Z told me, with substitute President, Vice-President, Cabinet officers, heads of Senate and Congress, Supreme Court Justices and other top governmental officials ready to function if disaster strikes "topside". Thus he confirmed earlier leaked reports about a secret Continuity of Government plan. He also confirmed that the "REX exercise" authorised by President Reagan was a dry-run dress rehearsal of the taking over of command of the government, legislature and courts by the unelected shadow government—to be implemented, if necessary, by federalised FEMA troops.

THE US ANTIGRAVITY FLEET

Z then got down to the more exotic areas of mutual interest. He confirmed the previously anecdotal story about President Nixon's having taken then-famous television star Jackie Gleason to Homestead Air Force Base, Florida, to show him the corpses of Zeta Reticular (Grey) crewmen retrieved from a UFO crash. Z said that he, too, had viewed those bodies.

Z also confirmed what defence industry black projects insider Edgar Rothschild

Fouche wrote about in his recent book, *Alien Rapture*: the existence of the TR3-B, a large triangular antigravity craft within the US antigravity fleet. This fleet also includes: the B-2 Stealth bomber, made by Northrop; the Lockheed X-22A two-man antigravity disc; the large spacefaring *Nautilus*, manufactured by Boeing and EU's Airbus Industries; Northrop's discoid craft; and the XH-75D or XH *Shark* antigravity helicopter, made by Teledyne Ryan Aeronautical Corporation of San Diego.

Here is what Z had to say about the TR3-B triangular antigravity craft:

"TR3-B. This is the code-name for what everyone on Earth has seen. It is a very large triangular-shaped re-entry vehicle with antigravity. It is what the November [2000] issue of *Popular Mechanics* identified as the Lenticular Reentry Vehicle—a nuclear-powered flying saucer, the first version of which went operational in 1962 [the version which *Popular Mechanics* illustrated].

"It was used in [the] Gulf War's early hours with electromagnetic-pulse/laser cannon. It literally sat mid-air, firing long-, medium- and short-range to take out antennas, towers, communications, air traffic control towers, TV dishes and centres, etc. For three hours, these three triangles [TR3-Bs] just sat there blowing up everything in sight. Then the Stealth fighters had fun for the rest of the day into the early evening next night. Then [followed] carpet bombings from high altitude B-52 *Strato-Fortresses*. They dumped all the old, aged, Vietnam-era crap [munitions]; a third blew

up and the rest [were] duds.

"Anyways, the TR3B has been in testing since the '60s. *But*, it has only been perfected for the last eight years [since 1992]. It is a good remake of what Truman first saw [the Roswell semicircular craft]. It is compartmentalised, built by the Skunk Works [Lockheed-Martin's classified plant at Palmdale, CA] and Boeing. It is housed in Utah. Remember Utah?"

Z was reminding me of his earlier revelation that the US Space Command has located its primary headquarters and antigravity space-launch fleet facility beneath the tallest mountain in the Wasatch Range, east of Salt Lake City, Utah.

"This is the end of that story. This is what people have seen, which I could safely estimate more than 90 per cent of the times. The other 10 per cent is what you seek—the real [extraterrestrial UFOs]!"

I politely disagreed with Z's estimate, since I doubted that the US antigravity fleet was numerous enough to account for the hundreds of daily sightings. But I thanked him for all his information and for so graciously driving a distance to rendezvous with me.

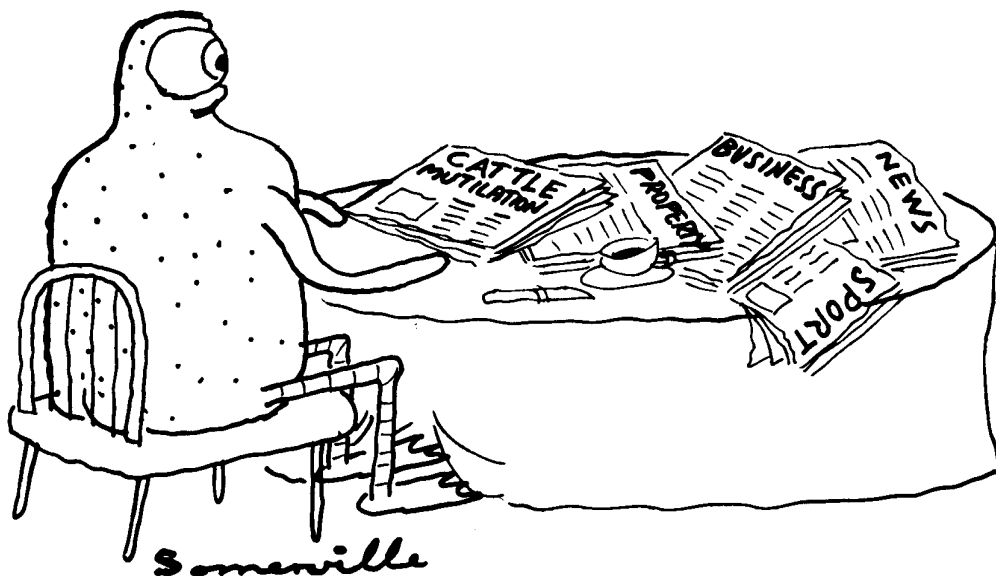
I certainly hope that the destructive incidents that the current ThreatCon Delta alert is set for do not happen. But I also believe that the American public has a right to know what I have learned. Thus you have this report.

— Richard J. Boylan, PhD
26 November 2000

"DOOMSDAY" ASTEROID IN 2030?

Many will recall the uproar in the newspapers and on television several months ago when NASA reported that astronomers had spotted a huge asteroid out in deep space on a trajectory to strike the Earth in 2030. This story generated much press attention and interviews. Then suddenly, NASA did a follow-up news release, this one saying that astronomers had made an error and that, according to rechecked calculations, the asteroid would miss Earth by thousands of miles. Great sighs of editorial relief took place all over the world. But Z says there is more.

Actually, the first news release was the accurate one!



NASA released it to allow the authorities to gauge what public reaction would be to the doomsday announcement. Actually, the world took the news without extraordinary, immediate panic and hysteria. But NASA then retracted the story to avoid the long-term corrosive effect of such news on society, so that life could go on as normal and people would not begin to question why they were going to their boring jobs and paying the mortgage when massive destruction was coming anyway. And so the stockmarket would not crash, nor other institutions lose allegiance from the public.

Z added some details on the "Doomsday" asteroid. It is indeed huge—larger than five miles by 10 miles (8 x 16 km), the size of a small county. NASA has also calculated the impact zone: the North Atlantic, somewhere between Europe and the United States and Canada. It will have devastating impact.

As it comes through the atmosphere, it will create the loudest sound humans have ever heard in history—a noise which will be heard around the world. The pressure waves caused by its impact will fracture the immediate tectonic plate it strikes and create great earthquakes everywhere.

Its impact will create tremendous tidal waves which will tower well above one mile (1.6 km) high. Scientists have calculated, for example, that everything on the US eastern seaboard below 5,000 feet (1,524 m) facing the wave will be inundated. Similarly, monstrous waves will be generated eastward towards Europe's Atlantic coast and elsewhere.

Z revealed that emergency plans have already been drafted. One such plan calls for important designated persons to be placed aboard the largest airliners and go airborne to ride out the earthquakes and tidal waves from a safe altitude.

Z said that government and military planners currently are desperately figuring out strategies to prevent the disaster; for example, whether to try to deflect the asteroid by explosions from rockets with nuclear warheads sent out into space to meet the asteroid.

But even such a plan has downside risks. What if the nukes do not nudge the asteroid out of its current course but, instead, fragment it—so that instead of one big object, several enormous pieces are created which still continue on course and strike Earth with a wider shotgun pattern of destruction?

The planners and scientists continue to wrestle with choices and decisions, feverishly working despite the huge rock's being a little over 29 years away.

RETURN OF THE TENTH PLANET

There is a second large incoming object expected, but it is of quite a different kind, Z stated, and it is due much sooner—around 2011–2012. Naval observers have already spotted it, coming from a direction visible from the southern hemisphere.

Z confirmed that this is the 10th planet of our solar system, which takes an extremely elliptical orbit. He said it is the one which orientalist scholar Zecharia Sitchin wrote about in his books decoding the Sumerian tablets. These tablets also spoke of a 10th planet with a 3,600-year orbit cycle. That planet, which they called Nibiru, is inhabited by the extraterrestrials who told the Sumerians that they bioengineered humans using Earth primate stock and extraterrestrial genes.

I commented to Z that perhaps, then, we will meet our makers in 2012 before we later meet our Maker in 2030 (if a solution to the asteroid threat is not worked out beforehand)! I thanked Z for sharing the news, although it is weighty indeed.

After he'd finished, I understood better the momentous concerns that some who are high in government wrestle with, and why some of them feel that the people are better off not knowing. Nevertheless, I believe that information is our public right. And knowledge is power.

— Richard J. Boylan, PhD
29 November 2000

UFO DISCLOSURE DATE REVISED

I have been in recent dialogue with this Tex-NSA consultant, and he has been reliable in the past. He stated that the official plan now is for the announcement of extraterrestrial contact to be made in 2006.

The announcement would first be made by a world-renowned religious figure. Shortly thereafter, it would be confirmed by the then-sitting United States President.

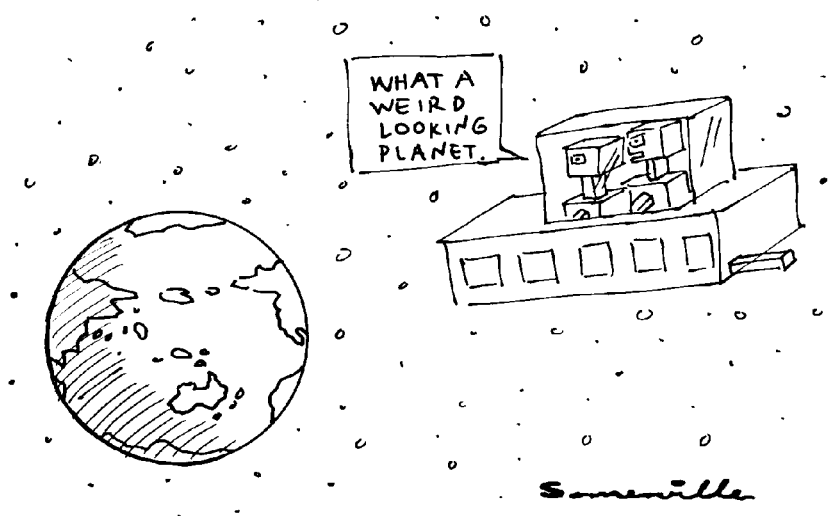
I reminded my informant that the timeline has therefore been pushed back from 2002 (Dr Michael Wolf revealed that 2002 had been the earlier official government timetable). Who's to say that it won't be pushed back again, and again? I'm afraid that our friends "upstairs" are going to have to take this matter by the horns.

— Richard J. Boylan, PhD
1 January 2001

About the Author:

Richard Boylan, PhD, LLC, is a behavioural scientist, certified clinical hypnotherapist and researcher into extraterrestrial/human encounters. He can be contacted at: PO Box 22310, Sacramento, CA 95822, USA, telephone (916) 422 7479 (PDT), e-mail drboylan@jps.net, website www.jps.net/drboylan/.

You are invited to join the UFOTruth Internet reports and ET/UFO/Experiencers communications list, moderated by Dr Boylan (subscribe at <http://UFOTruth.listbot.com/>); or join the DrRichBoylanReports list (his reports only!) at <http://DrRichBoylanReports.listbot.com/>.





REVIEWS

BOOKS

Reviewed by Ruth Parnell

THE LYNCH-MOB SYNDROME

by Ken Norman

The Portia Campaign, UK, 2000

ISBN 0-932813-86-0 (224pp tpb)

Price: £6.00 + p&h

Available: **UK**—The Portia Campaign, The Croft, West Common, Bowness-on-Solway, Cumbria CA7 5AG, tel/fax 016973 51820, e-mail ken_portia@one-tel.net.uk, website www.portia.org

Retired journalist Ken Norman founded The Portia Campaign 30-odd years ago in the UK as a national charity to help women in particular who may be wrongly convicted or in trouble with the law because of emotional or mental breakdown or through injustice. Many of the women whose cases are summarised in Norman's book, *The Lynch-Mob Syndrome*, have been found guilty of murdering their children—crimes they swear they did not commit.

It's a shocking indictment on our society when judges, scientific and medical witnesses, police prosecutors and jurors in effect conspire in a gradual, joint deterioration of judgement to convict innocent people. To Norman, it's lynching in a new guise.

Mothers have been wrongfully imprisoned because of an unidentified genetic disposition or because their children died of toxic poisoning from a plastic swimming pool. Various tragic deaths were deemed to be due to unusual cot death circumstances, shaken baby syndrome (SBS) or other trauma, again resulting in a conviction for the mother or carer (the Louise Woodward case is a high-profile example).

Yet, one significant but overlooked factor which Viera Scheibner, PhD, and Maureen Hickman have been exposing via NEXUS is the vaccination link in instances of both cot death (SIDS) and SBS (2/05, 5/05, 7/06). Another is the SIDS link with bacterial out-gassings (identified by Dr Jim Spratt in 6/06). These compelling connections might be overlooked in this book, but they are ignored by "experts" in the medical and judicial systems around the world. It is imperative that the "authorities", not only the public, become better informed before more needless deaths and convictions occur.

UNEXPLAINED PHENOMENA:

A "Rough Guide" Special

by Bob Rickard and John Michell

Rough Guides Ltd, UK, 2000

ISBN 1-85828-589-5 (394pp tpb)

Price: A\$30.00; NZ\$39.95; £12.99;

US\$27.99; C\$19.95

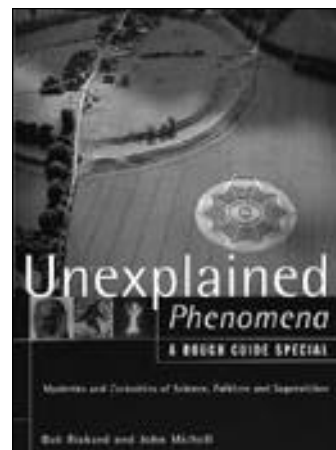
Available: **Australia/UK/USA/Canada**—Penguin Books; **New Zealand**—NEXUS Office, tel (09) 405 1963

If an anomalous event cannot be explained, this doesn't mean it should be discounted. And while authors John Michell and Bob Rickard are all for investigating strange phenomena, they warn that explanations are merely "temporary products, coming and going in response to fashions".

This Rough Guide special edition, *Unexplained Phenomena*, is a compilation based on new material and updates of two earlier works from these authors: *Phenomena: A Book of Wonders* (1977) and *Living Wonders* (1982). Michell is a veteran researcher/author on subjects such as archaeology, ancient science, sacred geometry, landscape energies and so forth, while

Rickard is the founder/co-editor of *Fortean Times*, the UK-based magazine which covers all sorts of anomalous phenomena, often with a humorous bent. Such humour flows through this book as a matter of necessity—for there's "nothing to be gained by worrying about or wilfully rejecting aspects of our human experience which can never be explained". Yet we want to know the truth!

Carrying on in the tradition begun by pioneering "Fortean" researcher Charles Fort (1874–1932), the authors analyse strange phenomena as diverse as teleportation, falling fish and frogs, stigmata, levitation, crowd madness, fairy folk, alien encounters, spontaneous combustion, subterranean realms, crop circles, spectral ships, simulacra, weeping statues, anomalous creatures, psychic animals and more, and they make lively use of illustrations and photos. They also provide useful Fortean-type Internet sources at the back of the book. There's more than enough here to convince you that this is a very weird world indeed.



REVIEWS



BOOKS

THE VAST ENQUIRING SOUL

by Ronald Russell

Hampton Roads, USA, 2000
ISBN 1-57174-153-4 (280pp tpb)
Price: A\$33.95; NZ\$46.95; £n/a;
NLGfn/a; US\$13.95

Available: **Australia**—Gemcraft, tel (03) 9888 0111; **NZ**—NEXUS Office, tel (09) 405 1963; **UK**—Airlift Book Company, tel 020 8804 0400; **Europe**—NEXUS office, tel +31 321 380558; **USA**—Hampton Roads Publishing, tel (804) 296 2772, website www.hrpub.com

Consciousness is little understood, yet to ignore its fundamental pervasiveness as some scientists do is to decry the reality of the human soul and spirit. So says Ronald Russell, the founder of the Russell Centre in New Galloway, Scotland, which conducts research and workshops into exploring mental realms. Through *The Vast Enquiring Soul*, he aims to show scientists that their worldview will always remain incomplete unless they take the soul into account.

The problem as he sees it is that scientists are oriented towards objective analysis, and consciousness research has such a subjective element to it, thus scientists reject something that can't be quantified and repeated in laboratory situations. However, a great deal of research has been conducted since the early 1970s which proves that consciousness is not limited by the confines of the brain, and much of this has been conducted according to scientific method. Russell refers to findings by Fritjof Capra, Ken Wilber, Ray Moody, Kenneth Ring, Michael Talbot,

Abraham Maslow, Bob Monroe and others and explains their breakthroughs and occasional shortcomings.

Russell describes the evidence for multidimensional consciousness by analysis of phenomena including ESP, remote viewing, distant healing, channelling, and experiences of the near-death, out-of-body and transcendental variety. The scientific study of consciousness needs to make more use of experience rather than laboratory analysis, he says. Above all, scientists must realise they cannot separate their own consciousness from the consciousness they are studying. Russell may not be the first one to espouse this viewpoint, but he puts an interesting spin on his metaphysical enquiries.

COSMIC WONDER

by Laurelle Russell-Atkinson

Xlibris, Philadelphia, PA, USA, 2000
ISBN 0-7388-2862-9 (344pp tpb)
Price: US\$8.00 (online); US\$16.00 + p&h
Available: **USA**—Xlibris Corporation, 436 Walnut St, Philadelphia, PA 19106, tel (215) 923 4686, 1888 795 4274 x273 (toll free in Nth America), e-mail orders@xlibris.com, website www.xlibris.com

At NEXUS we regularly receive papers and books on alternative cosmological theories, and we tremble to think that we may have overlooked something that provides the answer to life, the universe and everything. But it's not every day that we receive an original and creative cosmological thesis (produced through Xlibris online book publishers) by an "unknown 45-year-old woman living in the Tasmanian wilderness", as author Laurelle Russell-Atkinson describes herself. University-educated in philosophy and political science, she has no

qualifications in cosmology—but no orthodoxy stifling her thinking processes, either.

In *Cosmic Wonder*, Laurelle doesn't let mathematical equations and graphs get in the way of her theory that superluminal speed is possible on the premise that the universe is infinite and eternal. But having done her homework, she questions the laws of nuclear and interstellar physics, offers a new conceptual basis for understanding spacetime and motion, considers the formation of forces and the rotational, cyclical and spiral dynamics in the cosmos, and how superluminal travel might be achieved.

Laurelle conveys her thought-provoking arguments in a delightfully conversational and often humorous way, allowing the reader to become immersed in and flow with her esoteric stream of consciousness. This is a paradigm-expanding book to inspire professional cosmologists and anyone who wants to get out of the "Hubble bubble" to contemplate a cosmos unrestricted by speed-of-light barriers and without end.





REVIEWS

BOOKS

THE CHOLESTEROL MYTHS

by Uffe Ravnskov, MD, PhD

New Trends Publishing, USA, 2000

ISBN 0-9670897-0-0 (305pp tpb)

Price: US\$20.00 + p&h

Available: **USA**—New Trends Publishing, tel (202) 333 4801, (877) 707 1776 (toll-free in Nth America), fax (202) 333 0002, website www.NewTrendsPublishing.com

Regular readers will already be familiar with research exposing the fallacy that saturated fats and cholesterol cause heart disease (see 6/01-2, 4/02). Here, Swedish GP Dr Uffe Ravnskov dispels the myths point by point, taking us through the history of the "diet-heart idea" and revealing the bad science and poor use of statistics. He backs up his stance with ample evidence from peer-reviewed literature, much of which has been ignored or overlooked by medical researchers, practitioners and health authorities who either do not question the prevailing dogma or have vested interests.

Dr Ravnskov saw this scandalous state of affairs first hand when the "cholesterol campaign" was introduced into Sweden in 1989, supported by major and influential US institutions such as the National Heart, Lung and Blood Institute and the American Heart Association. Having followed the scientific literature for many years, he could recall no study showing that high cholesterol was dangerous to the heart or blood vessels.

The first editions of his exposé, *The Cholesterol Myths*, fell on deaf ears in Sweden and Finland in the early 1990s, but this new edition must be spared the same fate. In it, Dr Ravnskov explains the errors

of nine specific myths, including that high-fat foods and cholesterol cause heart disease, that high-fat foods raise blood cholesterol, that cholesterol blocks arteries, that polyunsaturated oils are any good, and that animal studies have any relevance. His well-reasoned scientific analysis exposes the fallacies which we must face up to if we're seriously interested in sensible eating.

THE AZTEC VIRGIN: The Secret Mystical Tradition of Our Lady of Guadalupe

by John Mini

THIS Publishing, CA, USA, 2000

ISBN 0-9657825-0-6 (347pp tpb)

Price: US\$14.95 + US\$4.50 p&h in USA/

Canada; elsewhere add US\$10.00 p&h

Available: **USA**—Trans-Hyperborean

Institute of Science, PO Box 2344,

Sausalito, CA 94966, tel (415) 331 0230,

fax (415) 331 0231, e-mail aztecvirgin@t-hyp.com,

website www.t-hyp.com

In 1531, ten years after Cortez "conquered" Mexico and slaughtered 23 million Aztecs in the name of Spain and the Catholic Church, there appeared to one humble man, Juan Diego, a radiant vision of a "noble-woman" who provided miraculous proof to convince a local bishop of her reality as the Great Mother. Soon, word spread and a "new" spiritual movement sprang up around the so-called Virgin of Guadalupe, whose request for a temple to be built on the place of the miracles, at Tepeyacac near Mexico City, was granted. Within a few months of the apparition, most Aztecs had converted to Catholicism, though they had rejected it for the previous 10 years.

But the Virgin of Guadalupe is really a dis-

guise for her Aztec predecessor: the goddess Tonantzin, an emanation of the multi-faceted Earth goddess and Mother of All Creation, Coatlique. No wonder the Aztecs responded to the sign of her appearance in 1531 with overnight conversion to the Mother! In *The Aztec Virgin*, John Mini (author of *August 13, 1999*) intertwines fascinating and moving histories with revelations concerning a mystical Aztec codex hidden in the Sacred Image which was manifested for Juan Diego and his bishop.

Through his own connections with Aztec mystics, Mini has been able to access a spiritual path to self-knowledge which traverses ancient Toltec dreaming techniques, Aztec sexual alchemical practices, and divine intentions regarding the anticipated birth of a new solar age—the Sixth Sun, the Sun of Flowers, wherein the emphasis is to be on exploring and refining relationships. Mini's key message is that the great Aztec dream of global mutual respect and harmony is being reborn at Tepeyacac and in us all.



REVIEWS



BOOKS

TAKE CONTROL OF YOUR HEALTH & ESCAPE THE SICKNESS INDUSTRY by Elaine Hollingsworth

Empowerment Press, Qld, Australia, 2000
ISBN 0-646402-97-8 (174pp l/f tpb)
Price: A\$26.00 inc. p&h in Aust; A\$33.00
to NZ/Asia/Pac; A\$39.00 to UK/Eur/USA
Available: **Australia**—Hippocrates Health
Centre, Mudgeeraba, Qld 4213, tel +61
(0)7 5530 2939, fax +61 (0)7 5569 0884

Good health is everything, and it's usually not until we have a health crisis that we realise how precious it is. This book by US-born Elaine Hollingsworth, the research director of the Hippocrates Health Centre in Queensland, Australia, is aimed especially at the ageing reader, with chapters covering how to avoid bone demineralisation and build bone and how to cope with menopausal symptoms and hormonal havoc (male and female). Elaine, at 72, is a picture of radiant health and lives by the advice which she dispenses.

Included among her list of things to avoid are sugar and artificial sweeteners, caffeine and soft drinks, chocolate and alcohol, excessive protein and soy products. She lists the early warning signs of osteoporosis as well as the essential vitamins, minerals, raw food and oils essential to combat it. In discussing menopausal symptoms, Elaine looks at the adverse side-effects of synthetic progesterone and oestrogen as well as the benefits of natural progesterone and the "miracle" Peruvian root vegetable, *maca*, which can relieve hot flushes and a host of hormonal problems in both men and women.

Another chapter she devotes to the poisons which permeate our daily lives—from excitotoxic food additives and fluoridated water to second-hand smoke, toxic sunblock and mobile/cordless telephone emissions—and how to overcome them. Her chapter on simple, natural remedies for common ailments from colds and migraines to allergies and asthma is basic but immediately actionable.

Elaine's emphasis is on dispelling health myths and promoting the life-enhancing options which she's seen work time and time again in her years of clinical experience.

TACHYON ENERGY

by David Wagner & Gabriel Cousens

North Atlantic Books, CA, USA, 1999
ISBN 1-55643-310-7 (147pp tpb)
Price: A\$40 + GST + \$5 p&h in Aust;
A\$48 inc. p&h to NZ; US\$14.95 + p&h
Available: **Aust**—Advanced Tachyon
Technologies (Aus), tel (02) 9540 2679,
www.tachyon-australia.com; **USA**—
Advanced Tachyon Technologies, tel (707)
573 5800, www.planet-tachyon.com

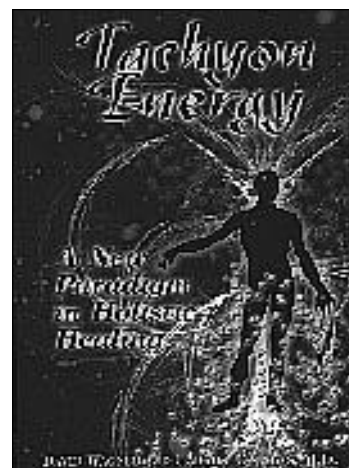
This book is not only about the physics of tachyon energy, but an integrated approach to healing which amounts literally to a major paradigm shift away from a horizontal, fragmented energy alignment to a vertically aligned system connected to the Source—which in turn provides a constant flow of energy to feed the physical, emotional, mental and spiritual bodies.

The authors, David Wagner and Dr Gabriel Cousens, have a collective background in an array of fields including engineering, traditional medicine and holistic health, kundalini science and world peace work. Here they bridge the gap between science and spirituality by explaining how zero-point energy,

"the unbounded totality of perfect order", condenses into faster-than-light tachyon energy, which is then converted into frequencies by slower-than-light SOEFs (subtle organising energy fields) to create the worlds of form.

Apart from this having implications for researchers into zero-point energy, antigravity and vacuum energy, these findings have revolutionary potential for our understanding of human energetic systems and how to achieve our perfect state of health. Various biological and clinical experiments lead the authors to conclude that we can optimise our health by better attuning our energetic systems to this tachyon energy. And if personal attunement is tricky to achieve, one can always utilise some of the materials, including water, which have been "tachyonised" to concentrate the healing energies.

In *Tachyon Energy*, the authors enlighten us to the dance of life and lead us to realise that we can experience it to the full.





REVIEWS

BOOKS

MYSTERIES OF THE SACRED UNIVERSE

by Richard L. Thompson

Govardhan Hill Publishing, FL, USA, 2000
ISBN 0-96353-093-3 (375pp tpb)
Price: Euro 18.85 + 3.35 p&h; US\$15.95,
foreign orders, add US\$9.50 p&h
Available: **Europe**—Bhaktivedanta Library
Services, Belgium, tel +32 86 323280, e-
mail hayagriva.hks@pamho.net, website
www.BL.Services.com; **USA**—Govardhan
Hill, tel (904) 462 0466, e-mail ghi@nersp.
nerdc.ufl.edu, www.sacreduniverse.com

The essence of Hindu cosmology can be found in ancient Sanskrit religious texts, most specifically in the *Bhagavata Purana*, or *Srimad Bhagavatam* as it is also called. Richard L. Thompson, PhD, has carried out extensive analysis of the *Bhagavatam* as well as several other Great *Puranas* which describe aspects of the Hindu understanding of astronomy and put humanity in a meaningful position in relation to the universe.

Dr Thompson is a mathematician who has written over 25 academic papers and several books on science and philosophy including *Vedic Cosmography and Astronomy*, *Alien Identities*, and (with Michael Cremona) *Forbidden Archeology and the Hidden History of the Human Race*.

Central to the ancient Indian idea of the cosmos, as described in the *Bhagavatam*, is an Earth-centred system of universes contained in a spherical shell, with internal layers marking the boundary between mundane and transcendental realms. The Earth is represented on a disc (the *Bhu-mandala*) within

the shell, but this 2D array can be interpreted as a 3D planisphere which allows complex astronomical, geographical and mythological information to be conveyed.

Thompson says that a deeper study of the cosmology of the *Bhagavatam* shows it to be a sophisticated system with correlations to astronomical findings such as geocentric planetary orbits and precessional cycles.

While other Sanskrit texts may be more recent and reflect Babylonian and Greek cosmological influences, the *Bhagavatam* precedes these, thus supporting the notion that it describes an original paradigm unique to ancient India. Dr Thompson's insightful analysis is an important contribution to our understanding of this ancient world-view.

THE TESLA PAPERS

edited by David Hatcher Childress

Adventures Unlimited Press, USA, 2000
ISBN 0-932813-86-0 (224pp 1/f tpb)

Price: A\$40 including GST + p&h;

NZ\$49.00; £n/a; US\$16.95 + p&h

Available: **Aust/NZ/UK/Europe**— NEXUS
offices; **USA**—AUP, tel (815) 253 6300,
website www.adventuresunlimited.co.nz

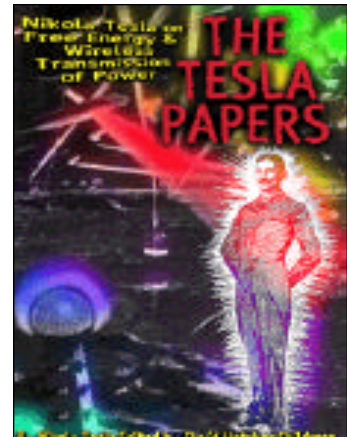
Just over a hundred years ago in June 1900, Dr Nikola Tesla had his landmark article, "The Problem of Increasing Human Energy", published in *Century Illustrated Monthly*. In it, he outlined a blueprint for a better world which includes wireless power available for all, antigravity and free energy devices, robotic systems and even common-sense advice about good diet and clean living. This article is republished in this latest compilation, *The Tesla Papers*, edited by the indefatigable David Hatcher Childress.

Little of what's reprinted here is actually by Tesla; most of the material is provided by

frontier sci/tech researchers such as Jerry Decker of KeelyNet, Toby Grotz, *Wizard* author Marc Seifer and other luminaries involved with the Tesla Society in Colorado Springs. There's discussion on Tesla coils, the little-known Tesla electric- (or aether-) powered car, the infamous "death ray" and "shield", a "lost" solar-electric panel and Tesla's contributions to electrotherapy.

Also featured in these papers is an anonymous summary of an FOIA request for any Tesla files held by the FBI. This has been circulating on the Internet and, though unverifiable, makes for interesting reading. And then there's the transcript of the 1943 lawsuit by Marconi Wireless Co. against the US Government regarding a dispute over Tesla's wireless radio patent (though this is kept in the original upper case, making reading difficult to sustain over its 40 pages).

This volume provides some missing links for up-and-coming Tesla-philes who may not yet have accessed some of this background information and commentary.



REVIEWS



BOOKS

THE PK MAN

by Jeffrey Mishlove, PhD

Hampton Roads, USA, 2000

ISBN 1-57174-183-6 (308pp tpb)

Price: A\$37.35; NZ\$49.95; £n/a;

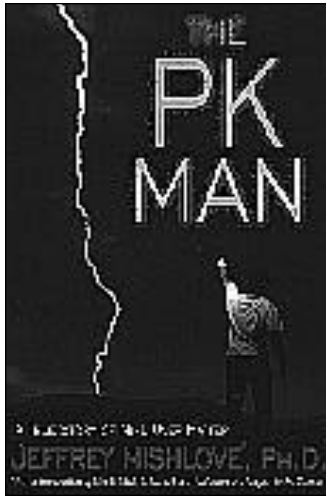
NLGfn/a; US\$14.95

Available: **Aust**—Gemcraft, tel (03) 9888

0111; **NZ/Europe**—NEXUS offices; **UK**—

Airlift Book Company, tel 020 8804 0400;

USA—Hampton Roads, www.hrpub.com



This is the extraordinary story of one of the most famous and powerful psychics of our time, Ted Owens (1920–1987). US-born Owens, the self-titled "PK Man", claimed his amazing psychokinetic abilities were conferred on him by "space intelligences" (SIs), enabling him (with their help) to control the weather, cause power black-outs and create UFO sightings on demand.

However, Owens's personality was such that he often used his powers in unethical, reckless and vengeful ways, announcing his intention to cause lightning strikes and out-of-season hurricanes, heatwaves or floods just ahead of the events actually happening—and usually causing death and destruction. Such events include the ending of a drought in California in 1967, as well as the downing of a jet airliner in 1975 and the eruption of Mt St Helens in 1980, he claimed. What sort of causal involvement he had in these events is still subject to conjecture, according to Jeffrey Mishlove, PhD, but it's well worth discussing openly.

The author of *Roots of Consciousness*, Dr Mishlove has a doctorate in parapsychology and has hosted a public TV talk show, *Thinking Allowed*, since 1986. He met Ted Owens in 1976 and followed his career closely, assessing his talents, documenting hundreds of PK events and keeping in regu-

lar contact until his death in 1987, though not publishing his book until now. He attended one of Owens's training sessions in how to contact SIs, and herein reprints the main pointers (they worked for him!).

In *The PK Man*, Dr Mishlove examines Owens's achievements from the perspectives of sociology, psychology, anthropology, physics and ufology. He also seriously cautions that it's one thing to connect with the power that's innate within us, but another to know how to use it responsibly and wisely.

EVE OF THE APOCALYPSE

by Michael Bond

Oracle Press, Qld, Australia, 2000

ISBN 1-876494-41-7 (412pp tpb)

Price: A\$32.00 in Aust; A\$41.00 o/s p&h

Available: **Australia**—POB 340, Swansea,

NSW 2281, tel 0438 710412 (Aust only),

e-mail orders@eveoftheapoc.com.au,

www.eveoftheapoc.com.au

The human race, Westerners in particular, is largely in denial of the reality that Nature is the source of all life on this planet. Behind it all, argues Michael Bond in *Eve of the Apocalypse*, is a rationalistic way of thinking that goes back to Plato—whose vision of the ideal Republic could ultimately be our demise if we continue to divorce ourselves from Nature and reality. By insisting that reality can only be properly understood in logical, rational terms, Plato created a mindset that permeates today in the trend towards global economic rationalism.

Such a mindset, Bond maintains, is split in a no-man's-land between our mental and emotional states. Instead of mental knowledge and intuitional feelings fusing in a sense of being or knowing, the rational thrust creates a conflict between head and heart, where the rational faculty forces the heart to repress its feelings. Such inner confusion, Bond says, produces a state of psychic terror which is an unnatural state of being. No wonder modern Western culture is in such a bind!

Thus this flawed way of looking at the world permeates all our affairs, whether in economics, politics, justice, science, medicine, religion, education, the media and so on. It creates a society where proponents of the letter of the law usurp truth and fairness. Ultimately, rationalism creates a tuned-out society of tuned-out individuals. And the tuned-out aren't awake to the great lies perpetrated by government, the military, science and corporate culture...

So what to do about it? Michael Bond's answer is to adopt a policy of honesty and self-responsibility, open our mind and heart to the Universe and trust our intuition. We have nothing to lose and this just may help.



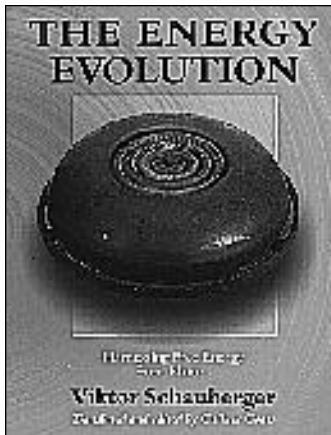
REVIEWS

BOOKS

THE FERTILE EARTH (Vol. Three) + THE ENERGY EVOLUTION (Vol. Four) by Viktor Schaubberger

translated & edited by Callum Coats
Gateway/Gill & Macmillan, Ireland, 2000
ISBN 1-85860-060-X (211pp tpb Vol. 3);
1-85860-061-8 (261pp tpb Vol. 4)
Price: A\$37.50 (Vol. 3), A\$36.50 (Vol. 4);
NZ\$39.95 (Vol. 3), NZ\$49.95 (Vol. 4);
£n/a (Vol. 3), £n/a (Vol. 4)
Available: **Aust**—Banyan Tree, tel (08)
8363 4244; **NZ**—NEXUS Office, tel (09)
405 1963; **UK**—Gill & Macmillan,
www.gillmacmillan.ie

These two volumes complete the four-part Eco-Technology series which focuses on the ideas and inventions of Austrian forest custodian and inventor Viktor Schaubberger (1885–1958). Again, these have been expertly and sensitively translated, compiled, edited and introduced by Callum Coats, who has spent decades researching Schaubberger's work. They follow on from *The Water Wizard* and *Nature as Teacher*.



Schaubberger's writings collected in the third volume, *The Fertile Earth*, emphasise nature's subtle energies and their correct use in agriculture, soil fertilisation and forestry. By observing nature's forces and energies in action, Schaubberger learned her secrets and come to understand what happens when the delicate balance is overstepped by unenlightened human interference. He applied his knowledge to improving soil fertility and increasing productivity in harmony with the Earth, and his practical advice is applicable in farm and forestry management today.

Volume Four, *The Energy Evolution*, draws together Schaubberger's writings on harnessing energy from nature. Having observed how nature produces energy by a slow, cool, implosive means (an efficient, centripetal, inward motion), he set upon

designing machines based on this principle. Presented here are his theories and observations on the biological vacuum, the life-current in air and water, electromagnetism and implosion/explosion, as well as a number of inventions including an air turbine, a home energy generator, a cooling/ heating machine, a device for producing spring water and even an antigravity craft.

Schaubberger urges us to care about nature by working *with* it rather than against it. These volumes speak reams about what we *should* be doing to improve our world.

AIDS: An Explosion of the Biological Time-bomb?

by Robert E. Lee

Biographical Publishing Co., USA, 2000
ISBN 1-929882-03-3 (502pp tpb)
Price: US\$22.75 + \$4.50 p&h to Canada,
US\$7.20 to UK/Eur, US\$9.00 to Aust/NZ
Available: **USA**—Biographical Publishing
Co., Prospect, CT, tel (203) 758 3661, fax
(603) 853 5420, biopub@aol.com; Ingram

The controversy over the origin of AIDS still rages, while AIDS has reached epidemic "biological time-bomb" proportions. "It is time to wake up!" declares Robert E. Lee, an Illinois-based academic specialising in psychology and social sciences and the author of two previous books on AIDS. He has made an objective assessment of peer-reviewed studies in the US, UK and France since the early 20th century which reveal an extensive history of research into acquired diseases and immunodeficiency—indeed, research with a view to initiating such immunologic disturbances.

Pointing out that AIDS had no historical precedent, came without warning and could not have had an African green monkey or chimpanzee origin, Lee refutes any connection with rare AIDS-like cases going back to the 1930s. He thus concludes it is highly likely that AIDS, or at least HIV-1, was bio-engineered and deliberately introduced into specific target groups. It is probably the result of research into animal retroviruses, where viruses were forced to "jump species", and, more specifically, into molecular biology and virus-based biological weapons. His conclusion supports the research of others who lean towards the man-made AIDS hypothesis, such as Dr Alan Cantwell (who wrote the preface to this book), Dr Leonard Horowitz (who proposes a link to cancer and biowarfare programs), and Dr Robert Strecker.

A US Department of Defense appropriation hearing in 1970 discussed a funding request for "new viral agents refractory to the immune system" which could be developed within 5–10 years. According to Lee's disturbing book, it appears they succeeded.

REVIEWS



BOOKS

THE TALK OF THE GALAXY: AN ET MESSAGE FOR US?

by Paul LaViolette, PhD

Starlane Publications, USA, 2000
ISBN 0-9642025-3-0 (192pp tpb)
Price: US\$16.00 + US\$6 p&h in USA/
Canada; elsewhere add US\$9 p&h; £n/a
Available: **USA**—Starlane Publications,
6369 Beryl Rd #104, Alexandria, VA
22312, tel/fax (703) 256 7337, 1800 715
9993 (toll-free in Nth America), e-mail
Gravitics1@aol.com, website www.
etheric.com; Ingram; New Leaf; **UK**—
Gazelle Book Service, tel 01524 68765

When the first pulsar was discovered in 1967, Cambridge graduate student Jocelyn Bell and her astronomy professor Anthony Hewish wondered whether the precisely pulsating broadband radio signal was from an alien intelligence. They even named the source LGM 1, short for "Little Green Men". When the time came to publish their findings, however, they decided their ETI hypothesis would not be taken seriously, so they posed an explanation



based on the emission being from an expanding/contracting, dimming/brightening white dwarf or neutron star. So their original hypothesis did not receive much airing.

Now, Paul LaViolette, PhD, author of *Earth Under Fire*, takes the ETI hypothesis further in leaps and bound in this aptly titled book, *The Talk of the Galaxy*. Dr LaViolette has analysed the position, distribution and periodicity of pulsars in our Milky Way Galaxy and has come to the startling conclusion that they are artificial signals, set up as aids to interstellar navigation and communication presumably by highly advanced ETIs.

According to his detailed astrometric analysis, there are too many coincidences in the pulsar positionings and timings for these signals to be natural. The very positions

also seem to be beacons to draw the attention of intelligent life not just in our solar system from our perspective, but in other parts of the galaxy from other viewpoints, to the source of a regular cosmic event: the core explosion from galactic centre and subsequent superwave emission affecting the entire galaxy across the light-years (see Dr LaViolette's article in this issue).

Ancient astronomers who mapped the night sky must have known of the source of this regular galactic superwave, LaViolette believes, for it is encoded in the zodiac at the point where Sagittarius's arrow crosses the galactic equator en route to the heart of Scorpius (though, over the millennia the angles have changed with stellar motion).

Dr LaViolette re-examines our understanding of pulsars and proposes how advanced intelligences could utilise stars for beaming these pulses using Tesla-based force field technology. This remarkable thesis should have major impact in cosmology circles.

AUDIO

Reviewed by Richard Giles

CHILDREN OF THE RAINBOW by Gordon-Michael Scallion and Cynthia Keyes

Matrix Institute, 2000 (60mins, 2 cass.)
Price: US\$25.00 + \$4.95 p&h; else-
where, add US\$8.95

Distributor: **USA**—Matrix Institute, PO
Box 336, Chesterfield, NH 03443-0336,
tel +1.603.363.4164, 1800 628 7493
(toll-free in Nth America), website
www.matrixinstitute.com

Earth changes and spiritual evolution have been futurist Gordon-Michael Scallion's public focus for over a decade.

In the early 1990s, Scallion released a taped talk on the Children of the Blue Ray—about the newly evolved children being born onto the planet in recent times. The topic fascinated millions. This two-cassette set is a follow-up to that one, and expands on the full-spectrum of colour rays which define and direct our roles on Earth.

Our individual colour ray is the clue to our destiny. Being part of a colour ray group is not fixed, and we can move from one to another in life and from lifetime to lifetime. This taped explanation goes into detail on each ray and colour, covering food, social activities, career, intuitive abilities, planetary influences, spirituality and everything related to one's role in life. After hearing these tapes, you'll be able to identify your own unique colour ray group.

This is essential listening for evolving souls; in fact, for anyone interested in the development of human consciousness.



REVIEWS

MUSIC

Reviewed by Richard Giles

MUSIC FROM THE TEA LANDS

by various artists

Putumayo, USA, 2000 (39mins)

Distributors: **Australia**—MRA

Entertainment, tel (07) 3849 6020;

USA—Putumayo World Music, tel (212) 625 1400, website www.putumayo.com

This new release is a compilation of music from the world's tea-producing lands including China, where tea has been cultivated for 5,000 years, Japan, India, and other countries. Featured are: Ghulam Ali of Pakistan; India's Sanjay Mishra on guitar and tabla; Okan Murat Öztürk from Turkey, playing the saz (a folk lute instrument); Hila Hambala from Sumatra on guitar and gamelan; Ancient Future, a fusion group using Japanese, Indian and Chinese musical styles; and more. An inspiring collection.

SHIATSU

by Llewellyn

New World Music, UK, 1999 (58mins)

Distributors: **Aust**—New World Music,

tel (02) 9565 4522; **UK**—New World

Music, tel 0198 678 1682; **USA**—New

World Music, tel (303) 415 1040, website, www.newworldmusic.com

This is one of several albums in the Mind Body Soul series and is designed for therapists to use to support their techniques. Ian Welch, a shiatsu healer, is the adviser on this album of relaxation, assisting listeners to use the sounds for enhancing treatments and massage. Shiatsu is a form of bodywork combining Chinese and Japanese medicine for healing through touch. NEXUS has several CDs of the Mind Body Spirit series to give away, including *Shiatsu*, *Tai Chi* and *Feng Shui*. Write your name and address on the back of an envelope and post it to "NEXUS Music Giveaway" by 1 March 2001 (offer valid in Australia only).

PARIKRAMA

by David Parsons

Celestial Harmonies, USA, 2000

(122mins, 2CDs)

Distributors: **Aust**—Arts Distribution, tel

(02) 9905 9435; **USA**—Celestial

Harmonies, tel (520) 326 4400, website www.harmonies.com

Mt Kailas is the holiest mountain for the Hindus, Buddhists and Bön and is situated in a remote part of western Tibet near the Indian border. It's a natural pyramid shape, covered with snow year-round. Many pilgrims make a circumambulation (a

parikrama) to pay homage to Mt Kailas. David Parsons, a prolific composer and musician, takes us on a sonic odyssey around the holy mountain and immerses us in his soundscapes. A fascinating creation.

THE BELIEVER

by Remember Shakti

Universal Music, France, 2000 (77mins)

Distributors: **Aust/UK/France/USA**—

Universal Music, www.universal.com

Do you remember the band Shakti from 1975 to 1977? Not old enough? Well, I still do! They and their late 1970s successor, the Mahavishnu Orchestra, pioneered a fusion of Eastern and Western musical styles (see review, NEXUS 6/05). Shakti reformed in 1997, making this live album while touring Europe, the line-up again featuring the celebrated John McLaughlin and Zakir Hussain. It contains six tracks, only one under 10 minutes, with some exciting rhythmic, improvised treasures of music. This version comes with a CD-ROM of a 30-minute live performance at the Montreux Jazz Festival. Stunning, in a word!

POSTCARDS FROM BUNDANON

by Riley Lee

New World Music, Aust, 2000 (66mins)

Distributors: **Aust/UK/USA**—New

World, www.newworldmusic.com

In 1993 the Bundanon Trust was established by Arthur Boyd, one of Australia's greatest artists, to protect his property and ensure its use as a living arts centre. When master *shakuhachi* player Riley Lee was staying and performing at Bundanon in 1996, he asked Boyd if he could create a painting for a cover of one of his CDs. *Postcards From Bundanon* features that painting. Boyd's death in April 1999 prompted Lee to compile this wonderful selection of some of his favourite and most moving performances over the years.



Continued from page 24

10. The brochure, "Catching the Wave", published on the IAEA website www.iaea.org, is an outstanding example of the type of public relations (propaganda) campaign which will target consumers over the next few years.
11. See www.who.org for the full text of the statement.
12. Bullerman et al., "Use of Gamma Irradiation to Prevent Aflatoxin Production in Bread", *Journal of Food Science* 1973:1238.
13. Webb and Lang, op. cit.
14. Josephson, Edward S. and Peterson, Martin S. (eds), *Preservation of Food by Ionizing Radiation*, CRC Press, Florida, USA, 3 volumes (vol. 1, 1982; vols 2 & 3, 1983).
15. Electron beam technology was initially developed as part of the US Strategic Defense Initiative, popularly known as "Star Wars". After the initiative lost funding, scientists continued to develop accelerator technologies and devise new uses for them.
16. US Food and Drug Administration Center for Food Safety and Applied Nutrition, "Kinetics of microbial inactivation for alternative food processing technologies – pulsed X-rays", June 2, 2000, www.mv.cfsan.fda.gov/~comm/itf-xray.html.
17. International Atomic Energy Agency, "Facts About Food Irradiation", www.iaea.org.
18. Verbatim testimony, US Congressional Hearings into Food Irradiation, House Committee on Commerce and Energy, Sub-Committee on Health and Environment, June 19, 1987. For more details, see Canadian Coalition for Nuclear Responsibility, "Potential Hazards of Food Irradiation", www.ccnr.org/food_irradiation.html.
19. Bhaskaram, C., "Effects of feeding irradiated wheat to malnourished children", *American Journal of Clinical Nutrition* February 1975; 28:130–135.
20. Polyploidy or endoreduplication is caused by a blocking of the last stage of a cell division. The chromosomes have reduplicated themselves, but the cell does not split into two parts, each with a normal set of chromosomes, so the result is one large cell with a double set of chromosomes.
21. See www.food-irradiation.com/you_asked.htm#.
22. Market Development for Irradiated Food in the Asia-Pacific. FAO/IAEA Coordinated Research Projects, www.iaea.or.at/programmes/nafa/d5/crp/d6_2006.html.
23. Canadian regulations have remained unchanged since 1989, when food irradiation was reclassified as a process rather than an ingredient. Canadian clearances in effect today include: potatoes and onions for sprout inhibition; wheat, flour and whole wheat flour for insect de-infestation; and spices and dehydrated seasonings for microbial reduction. See www.foodincanada.com/Content/03-96/F7_Features.html.
24. European Parliament, Joint Text for a European Parliament and Council Directive concerning Foods and Food Ingredients Treated with Ionising Radiation, 27 January 1999, www.dainet.de/bfe/Bfe-Englisch/Information/Lebensmittel.htm.
25. Steritech's application can be downloaded from the ANZFA website, www.anzfa.gov.au.
26. See www.gmabrands.com/pubpolicy/irradiation/index.cfm.
27. More than 170 companies throughout the world are irradiating food. The US irradiation companies listed by the Grocery Manufacturers Association are: Accelerator Technology Corporation; Alpha Omega Technology, Inc.; APA Inc./Titan Corporation; Food Technology Service, Inc.; Iotron Technologies, Inc.; and Isomedix.
28. See www.ratical.com/radiation/inetSeries/partialAcCLs.html.
29. See www.sustainable-city.org/articles/irradiat.htm.
30. Ashton, J. and Laura, R., *The Perils of Progress: Health and Environment Hazards of Modern Technology and What You Can Do About Them*, UNSW Press, Australia, 1998, p. 166.
31. Irradiation of food packaging materials is increasing, and this is an area in which there may be potential health risks from packaging-radiation interactions.
32. IAEA, "Facts About Food Irradiation", *ibid*.

About the Author:

Susan Bryce is an Australian journalist and author of more than 70 published research articles. Susan publishes the *Australian Freedom & Survival Guide*, which aims to undermine the pervading myths surrounding the corporate consumer culture, globalisation and the New World Order. *AF&SG* encourages public debate and questioning of issues which are fundamental to our future freedom and survival. These issues include genetic engineering, food irradiation and related issues, Big Brother and the international surveillance regime, corporate power and global governance, and self-sufficiency in the 21st century.

Australian Freedom & Survival Guide is available by subscription (6 issues per year, A\$45.00, US\$37.00, £25.00). Send cheque payable to Susan Bryce, POBox 66, Kenilworth, Qld 4574, Australia. For more details, visit website www.squirrel.com.au/~sbryce/.

The Human Cost of Animal Experiments

Continued from page 31

approval."^{25, 26}

So, contrary to the propaganda put forward by the medical establishment to justify its work, animal experimentation does not save human lives. As the industry's own evidence proves, it does just the opposite.

Author's Note:

This article is based on information contained in *Sacred Cows and Golden Geese: The Human Cost of Animal Experimentation*, by C. Ray Greek, MD, and Jean Swingle Greek (Continuum Publishing, London and New York, 2000, www.continuumbooks.com).

Endnotes

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4. *Medical World News* 1965; 6:168.
5. GAO/PEMD-90-15 FDA Drug Review: Postapproval Risks 1976-1985.
6. Lumley, C.E. and S.R. Walker (eds), *Animal Toxicity Studies: Their Relevance for Man*, Quay Publishing, 1989; *Clinical Pharmacology & Therapeutics* 1962; 3:665-672.
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Wochenschrift (New Legal Weekly), in *Zeitschrift für Rechtspolitik*, issue 2, 1975.

8. Svendsen, Per, "Laboratory Animal Anaesthesia", in *Handbook of Laboratory Animal Science* (P. Svendsen and J. Hau, editors), CRC Press, vol. 1, p. 4.
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12. *Lancet* 1992; 340:1145-1147.
13. International Agency for Research on Cancer (IARC), Monographs on Evaluation of Carcinogenic Risk of Chemicals to Humans, 1996, pp. 253-635.
14. Weatherall, M., *Safety Testing of New Drugs: Laboratory Predictions and Clinical Performance*, Academic Press, 1984, pp. 157-158.
15. See Breast Cancer Action website, www.bcaction.org; also Christiane Northrup's book, *Women's Bodies, Women's Wisdom*, Piatkus, UK, 1998.
16. OECD press release, 29 November 2000, www.oecd.org/media.
19. Visit website www.stopeuchemicaltests.com.
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21. PPO, *Updates of Cancer*, 10 October 1989.
22. *Clinical Research* 1991; 39:145-156.
23. *JAMA* 1998; 279:995.
24. Britishheartlessfoundation.com (affiliate

website of People for the Ethical Treatment of Animals), 2000.

25. Reuters News Service, 3 December 1998.
26. Reuters Health, "FDA Reviewers Say Drug Approval Standards Too Low", 3 December 1998, www.reuters.com.

Resources

- Americans for Medical Advancement (website of Ray and Jean Greek): www.curedisease.com.
- British Union for the Abolition of Vivisection: www.buav.org.
- Dr Hadwen Trust for Humane Research: www.drhadwentrust.org.uk.
- For more information on the EU's chemical testing program, see www.stopeuchemicaltests.com.
- People for the Ethical Treatment of Animals (PETA): www.peta-online.org, for a full list of charities which fund and do not fund animal-based research and for more information on chemicals testing programs in the US.

About the Author:

Katrina Fox is a freelance journalist whose specialist subjects include alternative health, hypnosis and direct action. She is also the author and editor of three books, the latest of which is *Self-Hypnosis for Life: Mind, Body & Spiritual Excellence*. For more information, visit website www.katrinafox.com or e-mail info@katrinafox.com.

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Dr Scheibner regularly conducts lectures, attends conferences and debates, and is often asked by lawyers to provide expert testimony for vaccine-damage court cases. Her previous articles for NEXUS covered the SIDS/vaccines link (2/05), the brain-eating bugs/vaccines connection (3/03), and the shaken baby syndrome/vaccination link (5/05).