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PESTICIDE NUN

...holding the chemical industry and government to account

SOUNDSCAPES

...SEEING THE WORLD THROUGH YOUR EARS

PHOTO STORY

Pushing back the desert - the tree women of Burkina Faso

KURT VONNEGUT

Okay now let's have some fun...

FAKE TANS
Are you dy(e)ing to look healthier?

SUCK ON THIS

THE **SHOCKING TRUTH**
ABOUT THE BABY JUNK
FOOD INDUSTRY



37 PAGES

TO INSPIRE A HOMEGROWN REVOLUTION Electrical incontinence • Chic ethical bags • Riverford Organic box scheme • Cosmetic moisturisers R.I.P. • Allotments: Seeds of hope • Organic & Biodynamic Wine Club





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**ADVENTURE
ECOLOGY**



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A black and white photograph of Jane Goodall in a forest. She is wearing a light-colored, short-sleeved shirt and shorts, and is looking down at a chimpanzee. The chimpanzee is standing on its hind legs, reaching up with its right hand towards Jane's hand. The background is filled with dense foliage and trees.

THIS MONTH IN HISTORY: APRIL 1934

'Long hours spent with chimpanzees in the forest have enriched my life beyond measure. What I have learned from them has shaped my understanding of human behaviour, of our place in nature.'

Born on 3 April 1934, Jane Goodall was just 26 when she entered the Tanzanian jungle. Her earliest and most well-documented observation was of a chimpanzee making tools by stripping the leaves off a twig, then using it to dig for termites – a pivotal moment in the history of primatology studies. She witnessed chimpanzees dancing at the sight of a waterfall, recorded an adolescent female adopting a baby after its mother had died of pneumonia, observed brutal warfare, during which a group of Kasakela male chimps killed all seven members of a rival splinter group.

'In what terms should we think of these beings, non-human yet possessing so very many human-like characteristics? How should we treat them? Surely we should treat them with the same consideration and kindness as we show to other humans; and as we recognise human rights, so too should we recognise the rights of the great apes? Yes.'

ecologist

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EDITORIAL

Before climate change found its way onto the mainstream political agenda, nuclear energy was in steady decline – hounded by environmentalists and rejected by the city. Then all of a sudden, it was transformed into a solution to the greatest threat we've ever faced. Reliable and sustainable, indigenous and immediately available – nuclear energy, we were told, is carbon neutral too – and the answer therefore not only to the looming energy crisis, but to climate change itself.



Not surprisingly, environmentalists have been under enormous pressure to put aside their traditional hostility to nuclear. The threat of climate change dramatically outweighs the worst of nuclear power. So if it were genuinely the case that nuclear power provides a solution to climate change, there's no question they'd have to embrace it – irrespective of the waste, costs, risks and so on. But is it really an answer to climate change? Is it even an answer to the emerging energy crisis?

Without imported uranium, nuclear energy couldn't happen, so to describe it as an 'indigenous' energy source is misleading. What's more, it's hard to know exactly how much uranium exists, but some of the world's best known commodity traders are betting on a huge price rise on the back of already-dwindling reserves. Some analysts believe uranium supplies will deplete on roughly the same timescale as oil and gas. So it's difficult to justify calling nuclear energy either reliable or sustainable.

Nor is nuclear power immediately available. It will take at least ten years for new plants to become operational. That's not the case with energy efficiency, which can happen today. Nor is it the case with the Combined Heat and Power (CHP) systems that already flourish in parts of Britain and Europe, and which are unarguably cheaper, cleaner and safer.

But more importantly, the contribution of nuclear to emissions reductions has been wildly exaggerated. Even if we replaced our existing nuclear reactors – and doubled their number – we'd see a mere 8 per cent reduction in carbon emissions, and not until 2035. It's a gain – but a minuscule one. And contrary to claims, nuclear isn't carbon neutral – every stage of the nuclear cycle, other than fission itself, produces carbon dioxide.

Compare the ambiguities of nuclear with the alternatives. An energy efficiency programme, for instance, could save us twice the energy currently generated by nuclear, at a fraction of the cost. According to the Rocky Mountain Institute, a pound invested in energy efficiency buys seven times more 'solution' than a pound invested in nuclear. To put it in context, if every lightbulb in the UK was exchanged with an energy efficient model, we'd save the power equivalent of nearly two advanced gas reactors. Much of this has already been proven by companies like Bayer, BT, DuPont and Norske Canada for instance, who have reduced their greenhouse gas emissions by at least 60 per cent since 1990 with total gross savings of US\$4 billion.

So too have any number of alternative energy sources been established and proven. Solar, wave, wind, and so on all have roles to play. And Combined Heat and Power is emerging as a potential front runner. If Woking has reduced its emissions by more than 75 per cent - that is at least partly thanks to a highly effective CHP system.

Despite all the ugly baggage, according to a number of recent opinion polls most people would accept a nuclear revival if it would improve our chances of tackling climate change. But nuclear is a half-remedy – at best – for a problem that needs more than half remedies, and for which truly effective solutions already exist.

Zac Goldsmith

Letters

A BEAR, A LION AND A CHICKEN MEET . . .

The bear says: 'If I roar in the forest, the entire forest is shivering with fear.'

The lion says: 'If I roar in the desert, the entire desert is afraid of me.'

The chicken says: 'Big deal – I only have to cough, and the entire planet shits itself.'

ALAN REDCAR
LEEDS

Send letters for publication to: **Letters, The Ecologist, Unit 18, Chelsea Wharf, 15 Lots Road, London SW10 0QJ. Email: editorial@theecologist.org. The Ecologist reserves the right to edit letters as necessary.**



SUBVERTISING

Irritated by the annoying Gary Lineker in his attempt to shift more crisps to children? Well, someone in Burnham-on-Sea has got their own back by radically altering a billboard . . . **PHOTO: Jeff Brewster**

GM RESISTANCE

I received an email from the Soil Association recently, detailing an EU proposal to allow GM contamination of organic food and requesting the recipients email their MEPs to object.

Whilst I consider Dr Caroline Lucas to be 'my' MEP, I also emailed the others who represent my region. As expected, Dr Lucas' replies and actions were both prompt and very helpful but, with one exception, no other MEP replied.

The exception was Richard Ashworth (a Conservative MEP), who stated: 'I don't share your views and am not prepared to support them with the European Commission.' Okay, we are all entitled to our views, but what followed was extraordinary.

Richard Ashworth's email went on to state: 'Given the likelihood of more GM crops being grown worldwide, and the distinct possibility that GM techniques may now offer us a new way of producing foods better tailored to dietary requirements (obesity etc), it seems to me sensible

for EU organic farmers to accept and indeed welcome the Commission's position. Otherwise, they will find that if their organic crops do contain very low levels of GM material, possibly by accident, they will be ruled as non-organic and could lose their organic status.'

I re-read that paragraph two or three times before being able to believe that someone really has such an opinion. Richard Ashworth's reply is the kind that makes my heart sink and wonder whether we can rescue ourselves from the mess we have created. Still, it makes me even more determined to do my little bit.

David M. Davison
By email

RE>PAINT

I was very interested to see an article about paint in February's edition of the *Ecologist*.

Over 414 million litres of paint are sold in the UK each year (retail and trade), of which an estimated 80 million litres (enough to fill 50 Olympic-sized swimming

pools) is stored in homes and garages or just thrown away. This paint tends to be stored and then disposed of in landfill.

Community Re>Paint provides a practical solution to this waste stream that is environmentally and socially beneficial. Unwanted, surplus paint is diverted from the waste stream and redistributed for reuse by community groups, charities and voluntary organisations. The paint is passed on to those in social need free of charge (or for a small donation towards overheads).

Vicky Wren
Community Re>Paint
Development Worker
www.communityrepaint.org.uk

WASHABLE NAPPIES

Having read the article on washable nappies in February's *Ecologist*, I was pleased that Matilda Lee found the nappies so easy to use. We have used washables on both our children with no problems at all, and campaigned for our local government (States of Jersey) to follow some councils in the UK by giving vouchers to encourage reducing unnecessary waste on the island. Now, couples get a £30 grant towards the purchase of washables.

I don't think parents even realise that they have a choice – over nappies, food, baby products, baby clothes. Parents tend to be very sheep-like in their purchases, which is probably why all my friends use washable nappies. I was the first of my group of friends to have a baby – they thought that washable nappies were normal!

Catherine Jackson
By email



RESOURCE WARS LOOM

Climate change could become a major source of global conflict over the next 30 years, with countries battling for control of water supplies, says British Defence Secretary John Reid. His forewarning came at a recent conference hosted by the international think-tank Chatham House. The two-day gathering was called to examine the new requirements for Europe's armed forces.

Said Reid, 'As we look beyond the next decade, we see uncertainty growing;

uncertainty about the geopolitical and human consequences of climate change . . . Impacts such as flooding, melting permafrost and desertification could lead to loss of agricultural land, poisoning of water supplies and destruction of economic infrastructure . . .'

He continued: 'These changes are not just of interest to the geographer or the demographer; they will make scarce resources, clean water, viable agricultural land even scarcer . . .'

'Such changes make the emergence of violent conflict more rather than less likely . . .

. The blunt truth is that the lack of water and agricultural land is a significant contributory factor to the tragic conflict we see unfolding in Darfur. We should see this as a warning sign.'

He noted that more than 300 million people in Africa currently lack access to safe water, and that climate change could worsen this dire situation, leading to flashpoints and an increasing demand for humanitarian aid.

Now that recognition has dawned at such a high level of government, can we expect decisive action to prevent this imminent and avoidable conflict?

I in no way diminish the threat of terrorism to our society and way of life, quite the reverse. It is a very serious threat. But I don't think it is even comparable to the threat to our civilization that global warming represents.

Sir David King, the UK government's chief scientific adviser.

TELL US WHAT WE'RE EATING

Greenpeace are out to raise a million-name petition calling for products derived from animals reared on genetically engineered feed to be clearly labelled. At this time, eggs, milk and meat are exempted from labelling their GE roots in the EC. To sign the petition, visit www.greenpeace.org/genetic-engineering.

50 THOUSAND

The number of endangered leatherback turtles that inadvertently get snagged on long-lines each year.

SWEDEN'S 2020 OIL-FREE VISION

Sweden has set a deadline of 2020 to become the world's first oil-free country in the aftermath of Hurricane Katrina, which starkly highlighted the problems of being over-reliant on oil.

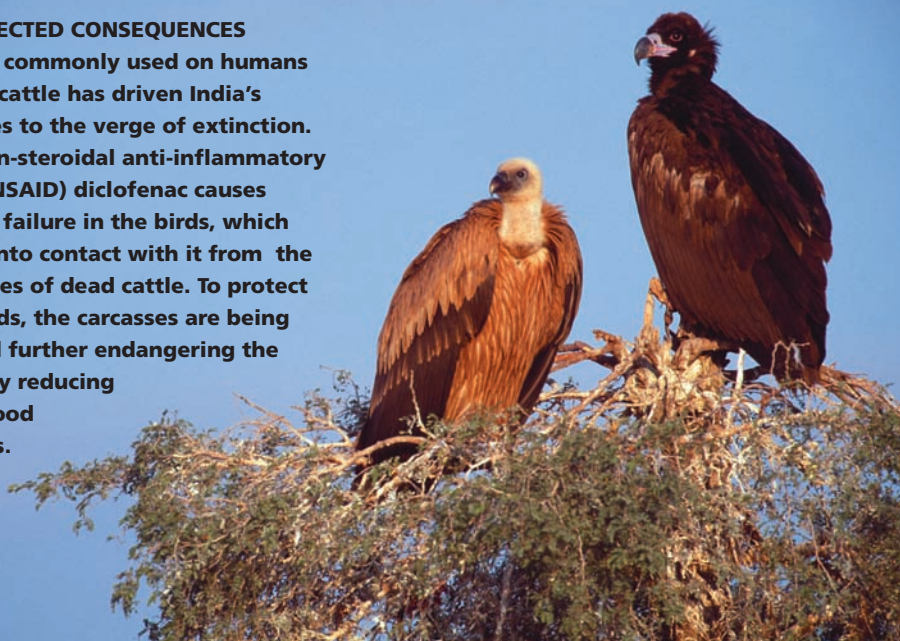
While Katrina last August knocked out a relatively small number of refineries, it still had an adverse impact on supplies, forcing Sweden to dip into their emergency stocks. To end their reliance on oil, Sweden plans to:

- Invest SEK815 million (£59 million) per year in research and development to achieve more renewable energy production and more efficient energy use
- Support local power suppliers by offering financial incentives to make biofuels and environmentally-friendly heating economically advantageous
- Encourage long-term investment in renewable energy by giving power suppliers extended supply contracts while undertaking a review on how agricultural production of renewable energy can be increased
- Offer tax breaks for households to convert from oil to renewable energy supplies, as has already been available to libraries, public swimming baths and hospitals for some time
- Wean car owners off petrol by levelling zero taxes on renewable fuels and offering free parking for users in some cities.

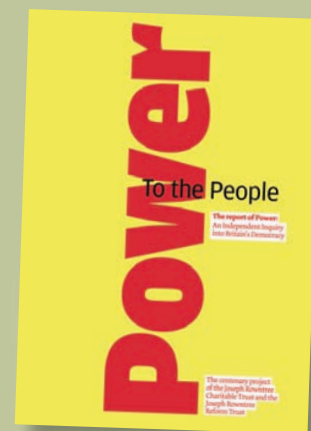


UNEXPECTED CONSEQUENCES

A drug commonly used on humans and in cattle has driven India's vultures to the verge of extinction. The non-steroidal anti-inflammatory drug (NSAID) diclofenac causes kidney failure in the birds, which come into contact with it from the carcasses of dead cattle. To protect the birds, the carcasses are being burned further endangering the birds by reducing their food sources.



PHOTOGRAPH BY NPL



POWER TO THE PEOPLE

A clarion call for direct democracy has been made by an independent inquiry into why Britons aren't bothering to vote. The *Power* inquiry report was written over 18 months by a committee of citizens drawn from all walks of life, and co-chaired by Ferdinand Mount of the Adam Smith Institute and radical barrister Baroness Helena Kennedy. Apathy among voters is a myth, it says. They are only apathetic towards formal party politics, which they see as 'irrelevant' and 'self-interested'.

To redress the problem, *Power* calls for procedures to be established that give 'citizens the right to initiate legislative processes, public inquiries and hearings into public bodies and their senior management'. For this to happen, the report calls for MPs to be more accountable by, for instance, producing annual reports, and calls for local and national statistical resource centres to be established so that members of the public can easily source 'key information free of political spin'. The report concludes, 'Change of this magnitude cannot be left simply to elected representatives. Only a sustained campaign from outside will ensure that meaningful reform occurs.'

WHAT WE LEARNT LAST MONTH...

■ **The 100-year-old Iditarod Trail Sled Dog Race across Alaska had to be rerouted as alternating bitter cold and spring-like thaws turned trails to mud, slush and ice.**

■ **Ventilated car seats can improve a vehicle's fuel economy by reducing the need for air-conditioning to keep passengers comfortable, says the US Department of Energy's National Renewable Energy Laboratory.**

■ **Japanese scientists, using a heat and pressure process, have turned cow dung into vanilla extract. The end product won't be used in food for reasons of good taste; instead, it will be incorporated into soap and scented candles.**

■ **A school superintendent has said that animal castration is an important skill for students to learn after PETA protested when a teacher in California castrated a live pig in front of a class.**

■ **Less than a third of Americans are cooking their evening dinners from scratch, according to a new survey by the Institute of Food Technologists..**

■ **A freak fall of snow, tinted red by minute particles of sand, covered Northern Russia. The red snow came just weeks after a yellow snow, caused by pollution from an oil and gas factory, fell on Russia's Far East island of Sakhalin.**

■ **A man who had climbed a mill chimney to rescue an escaped hawk survived a 30ft fall by landing on 6 inches of pigeon droppings. The British man broke his neck in the fall, but did manage to keep hold of the hawk.**

■ **Pope Benedict XVI likes to unwind by listening to religious music, plus pieces by Beethoven, Mozart and Chopin on his iPod.**

■ **A British man has been fined £50 for putting two junk mail letters in a public bin. The local council, which traced the man from the addresses on the envelopes, defended the penalty saying that the letters were 'domestic refuse' and therefore unsuitable for public bins.**

■ **A 11 year old girl from Tampa Florida became a celebrity in her hometown when her winning science-fair entry proved that ice made from the drinking-water from several local fast food restaurants contained more bacteria (including some E. coli) than the same restaurants' toilet water.**

■ **In Nagano, Japan five disgruntled Buddhist monks (along with four clerical workers) at the Zenkoji temple formed a labour union to combat what they say was harassment by the head monk regarding working conditions.**



As the government launched its energy review in March, *Our Energy Challenge – Have Your Say*, one of its own advisory groups ruled out the nuclear option. The Sustainable Development Committee (SDC) says that even if Britain's existing nuclear capacity were doubled, it would only give an 8 per cent reduction in carbon-dioxide emissions by 2035 – way off target to meet the UK's Kyoto commitments.

'The UK government is going to have to stop looking for an easy fix to our climate change and energy crises – there simply isn't one,' said SDC chairman Sir Jonathon Porritt.

The report identifies five major disadvantages of nuclear power:

■ **Long-term waste:** No long-term solutions are yet available, and it is impossible to guarantee safety over the long term for disposal of waste

■ **Cost:** The economics of bringing new generators into operation is highly uncertain. There's a clear risk that UK taxpayers will have to pick up the tab if current costs seem unrealistic

■ **Inflexibility:** Nuclear power would lock the UK into centralised distribution over the next 50 years at exactly the time when opportunities for microgeneration and a local distribution network of energy will be stronger than ever

■ **Undermining energy efficiency:** A new nuclear-power programme would send the wrong signal to consumers and businesses by implying that a technological fix is available, weakening the need for urgent action on energy efficiency

■ **International security:** A nuclear programme would lead to further nuclear proliferation. The report points out that under the terms of the UN's Framework Convention on Climate Change, we cannot legally stop other countries using the same technology. With lower safety standards, some countries would run a higher risk of accidents, radiation exposure, proliferation and terrorist attacks.

To see *Our Energy Challenge – Have Your Say*, visit www.dti.gov.uk/energy/review. Responses can be sent either by mail to: Energy Review Team, Department of Trade and Industry, 1 Victoria Street, London SW1H 0ET or by email to: EnergyReviewConsultation@dti.gsi.gov.uk. The closing date for submission is 14 April.



AMERICA'S POISONED RIVERS

One billion pounds of pesticides are used annually in America and, according to a new study by the US Geological Survey (USGS), many of these end up in the country's rivers and streams. The 10-year survey found that fish inhabiting these waterways are contaminated with pesticides that are linked to cancer, birth defects and neurological disorders. Most frequently detected in agricultural streams were three herbicides that are used mainly on farms: atrazine, metolachlor and cyanazine. Three other herbicides used commonly in cities – simazine, prometon and tebuthiuron – showed up more often in urban streams. Traces of pesticides were identified in 90 per cent of water samples and in most of the fish examined.

15 YEARS

how long the soft drinks industry and regulators have known that sodium benzoate and ascorbic acid combine in soft drinks and sodas to produce carcinogenic benzene.

“

It is unrealistic to think that you will get some restriction on air travel at an international level. The best way to go is to recognise that it is a reality, and see how you can develop the technology that is able to reduce the harmful emissions.

– British Prime Minister Tony Blair on the 'reality' of airline travel. Here's an alternative reality – the UK government currently hands out £9.2 billion per year in subsidies – equal to around £300 per UK taxpayer – that allow low cost airlines to offer cheap fares to customers.

”



EXPORTING BOOM AND BUST

Outsourcing IT and call-centre jobs to India is fuelling a boom in supermarkets and shopping malls there. Up to 600 malls are likely to be up and running in India by the end of 2009.

New Delhi stands at the centre of the boom, with as many as 100 malls planned for the city and its vicinity over the next three years. Nearby Gurgaon already has six malls, and the daily exodus of shoppers from Delhi is causing traffic chaos.

There are other major environmental concerns. 'Because the electricity supply is unreliable in Gurgaon, malls will have to run their own diesel-powered generators, which will cause significant pollution,' says KT Ravindran, an urban-planning expert at Delhi's School of Planning and Architecture. 'And because the water supply is also shaky,' he adds, 'many of the malls will have to dig wells and suck up groundwater, thus lowering the water table in the region.'



HIMALAYAN GODS SAY NO TO FORD

American industrialist Alfred Ford's \$520 million Himalayan skiing-village project has been rejected by the local deities.

Despite winning political support for the resort – to be based in Manali, North India – the *Dharam Sansad* (congregation of local deities, or religious parliament) declared a unanimous 'no' to the proposal.

Jamlu Devta, the chief deity, convened the meeting in the village of Naggar. Amid the beating of drums, some of the oracles went into a trance before sounding their opposition. The oracles said that the project would spell environmental, cultural and social devastation for the region. In addition to depriving peasants of their rights to the land, the deities feared the ski resort would pollute the sacred spots on hilltops that belong to the gods. Although outsiders are intrigued by this strange custom, in Kullu most important family and civic decisions are taken after consultation with the local deity. It remains to be seen whether divine intervention has succeeded in thwarting corporate and political will.



WEATHER WATCH

It's been a winter of record-breaking weather around the world.

■ **Africa** The Horn of Africa has had no rain for two years, resulting in eight million people facing critical food shortages. Phenomenal drought continues to affect much of this region as well as countries in East Africa. In Somalia, the drought there is recorded as the worst in a decade.

■ **Algeria** The desert region, bordered by Morocco and Mauritania, experienced heavy rainfall.

■ **United States** An exceptionally warm January saw temperatures reaching a new high of 103° F (39.5° C). The national average winter temperature for the US is 91° F (33° C). Meanwhile, February brought heavy snowfall – 229 inches (60 centimetres) – to New York, while late August brought tornadoes to South Carolina and Katrina to devastate New Orleans.

■ **Australia** The continent had its driest January since 1994. In Tasmania, the temperature rose to 40.6° C (105° F), the highest recorded since 40.8° C in 1976.

■ **Brazil** The worst rains recorded in almost a decade led to widespread flooding in Rio de Janeiro.

■ **China** An unusually early thaw of snow and ice triggered floods.

■ **France, Switzerland and Italy** All three countries experienced freak snowstorms.

■ **India** There was frost in Delhi for the first time in decades as the thermometer dipped to its second lowest point ever recorded.

■ **Japan** Blizzards caused snowdrifts up to 10 feet deep. With 100 people having died so far in snow-related incidents, it has been the deadliest winter since 1983–84, when there were 131 fatalities.

■ **Poland** Temperatures dropped to –35° C (–31° F); the national average is –1° C (30° F).

■ **Romania** Temperatures fluctuated from –24° to –10° C (–11° to 14° F), a dramatic change from the average range of –3° to 4° C (26° to 39° F).

■ **Russia** Temperatures plunged to –40° C (–40° F) compared with the national average of –24° C (–11° F).

■ **United Kingdom** The driest winter since 1964 saw 19.2 cm (7.5 in) of rainfall recorded, 58 per cent down on the average 32.5 cm (12.8 in).

14,562,681 DOLLARS

Total amount of campaign contributions by agribusinesses to members of the US Congress so far in the 2006 election cycle; 69 per cent went to Republicans and 30 per cent to Democrats.

PIPELINE GO-AHEAD

At the second time of asking, Russian environment chiefs have given the go-ahead for a mighty oil pipeline to exploit demand in the Asia-Pacific region, despite fears that it will pollute Siberia's Lake Baikal, the world's single biggest source of fresh water.

It is feared that the area's seismic activity could cause the pipe to rupture, which could result in an estimated 4,000 tonnes of oil spilling into the lake.

TSUNAMI FUELLED BY COMMERCIAL LAND RECLAMATION

The wholesale commercial development of mango swamps in Asia fuelled the magnitude of the 2004 tsunami, according to the Environmental Justice Foundation (EJF). Mangrove swamps are the region's natural wave barriers. Where they had been destroyed to make way for shrimp farms and tourist resorts, the destructive tsunami waves were able to penetrate further inland. The four hardest hit countries – Indonesia, Sri Lanka, India and Thailand – have seen nearly 30 per cent of their total mangrove swampland – more than a million and a half hectares – disappear between 1980 and 2000. Urgent renewal of the mangrove swamps is being urged by EJF, which says they form a 'life-saving shield against all storm events' in a region prone to hurricanes and cyclones.



THE ORGAN GRINDERS' MONKEYS

Beware of lazy journalists parroting corporate spin

WHAT METRO SAID: THE PILL TO STOP HEART ATTACKS

by Finian Davern

A pill dubbed the 'holy grail' of medicine [1] could soon be given to millions of patients to stop them having heart attacks. [2]

The drug, Crestor, may also spell the end of heart bypass surgery [3] because it is the first to reverse the build-up of dangerous fat in arteries. [4]

It could be given to healthy people as a supplement to prevent their blood vessels becoming clogged. [5]

Researcher Dr Neal Uren said: 'We have shown it is possible to turn the clock back in the arteries of people with heart disease. This has exciting implications.' Heart disease kills 110,000 people a year in Britain, while a further 200,000 survive heart attacks.

Until now, doctors thought it was possible to reverse the build-up of atheroma [6] – fatty deposits which narrow the arteries and cause heart attacks and strokes. But trials of Crestor, previously known as an anti-cholesterol drug [7], produced what researchers are calling

'dramatically exciting' results.

Nearly 350 heart patients [8] in the US, Europe, Canada and Australia were given eight times the dose used to treat high cholesterol. In 8 in 10 cases their arteries improved. [9]

Side effects, such as severe muscle pains, affected one in 20 patients. [10]

Dr Jay Wright, of Liverpool Cardiothoracic Centre, said: 'The majority of heart patients may no longer need heart bypass surgery.

'If we can give them a pill in their 30s or 40s, their chances of having a heart attack will be slashed.'

Crestor is made by drugs giant AstraZeneca, which said it expected the drug to be used for the new treatment by 'the first half of 2007'. [11]



Metro's uncritical reporting of Crestor (rosuvastatin) amounted to little more than a sales pitch for the manufacturer. Here's what they got wrong/omitted to mention.

[1] Crestor has never been dubbed a 'holy grail'. The lead scientist of the study, Dr Steven Nissen, was misquoted. What he actually said was that, where atherosclerosis – the blocked arteries that result from the build up of atheroma, or fatty deposits, on the artery wall – is concerned: 'The holy grail has always been to try to reverse the disease.'

[2] There is no evidence that Crestor prevents heart attacks. Indeed, Dr Nissen has said that more research is necessary to demonstrate whether the reduction of plaque seen in this study actually lowers the risk of heart attacks.

[3] There is no evidence from any published trial that Crestor could prevent the need for bypass surgery.

[4] All statin drugs have cholesterol-lowering effects. The dramatic results achieved with Crestor in this small study were due to the dangerously high doses given to the study patients.

[5] There is no evidence that Crestor is beneficial or desirable in any way for preventing clogged blood vessels [atherosclerosis] in 'healthy people' – no

healthy people were included in the study. Also Crestor is not suitable for everyone. It should not be given to people of Asian descent – they can experience a dramatic and potentially dangerous build-up of the drug in their bodies.

[6] It is not impossible to reverse the build-up of atheroma in the arteries. Medical studies have shown that significant reversals can be achieved simply lifestyle changes – such as a very low-fat vegetarian diet, stopping smoking, stress-management techniques and daily moderate exercise.

[7] Crestor is only indicated for use as an anti-cholesterol drug. It is not licensed as a treatment for atherosclerosis, so a doctor prescribing it for this condition would be engaging in the risky practice of off-label prescribing – giving a drug for a condition it was never intended to treat.

[8] The study originally involved 507 patients, not 'nearly 350'. Of the 158 who did not complete the trial, 62 dropped out due to adverse effects.

[9] This is not accurate. In fact, just over a third of patients experienced worsening atheroma build-up while on Crestor.

[10] The trial was not large enough, did not last long enough and did not include a placebo group that would have allowed the authors to accurately estimate the true level of either beneficial or adverse effects.

In fact, Crestor has been the focus of safety concerns since its approval by the US Food and Drug Administration in 2003. In an editorial in the *British Medical Journal* in October 2003, the *Journal's* editor stated that the manufacturer's tactics, which included a campaign of phone calls directly to physicians, 'raise disturbing questions about how drugs enter clinical practice and what measures exist to protect patients from inadequately investigated medicines'. A review in the *Journal of the American Medical Association* in May 2005 concluded that, compared with other statin drugs, Crestor was 2 to 6 times more likely to cause adverse effects. Crestor is associated with serious problems, including myopathy [progressive muscle weakness as a toxic reaction] and rhabdomyolysis [a muscle-wasting disorder that can lead to kidney failure]. Other adverse effects of note include muscle pain, weakness, tenderness, fever, dark urine, nausea and vomiting.

[11] By misrepresenting the safety and efficacy of the drug, [ital]Metro[ital] serves the drug company rather than the reader. The same day that reports of Crestor's anti-plaque effects first appeared in the news, AstraZeneca's share price rose by more than 2 per cent – a boon for the company in the face of speculation that a larger rival might make a bid for the company.

A herd of elephants is walking across a savanna landscape. In the background, a large mountain, Mount Kilimanjaro, is visible under a cloudy sky. The elephants are moving from left to right, and some are kicking up dust. The overall scene is captured in a warm, golden-brown color palette.

ELEPHANTS BELOW MOUNT KILIMANJARO

by Martyn Colbeck, UK

A line-up of elephants dusting themselves to keep cool as they travel towards the swamps.

This photograph was one of the winners of the Wildlife Photographer of the Year competition, organised by the Natural History Museum and *BBC Wildlife Magazine*.



EXPOSED: The secret corporate funding behind health research

BY GEORGE MONBIOT

Academics and the media have failed dismally to ask the crucial question of scientists' claims: Who is paying you? (PUBLISHED IN *THE GUARDIAN*, 7 FEBRUARY 2006)

“How many more media campaigns against ‘over-regulation’, the ‘compensation culture’ or ‘unfounded public fears’ have been secretly funded and steered by corporations?”

Three weeks ago, while looking for something else, I came across one of the most extraordinary documents I have ever read. It relates to an organisation called ARISE, which stands for Associates for Research into the Science of Enjoyment. Though largely forgotten today, in the 1990s it was one of the world's most influential public health groups. First, I should explain what it claimed to stand for.

ARISE was founded in 1988 and seems to have been active until 2004. It described itself as ‘a worldwide association of eminent scientists who act as independent commentators’. Its purpose, these eminent scientists claimed, was to show how ‘everyday pleasures, such as eating chocolate, smoking, drinking tea, coffee and alcohol, contribute to the quality of life’.

It maintained that there were good reasons for dropping our inhibitions and indulging ourselves. ‘Scientific studies show that enjoying the simple pleasures in life, without feeling guilty, can reduce stress and increase resistance to disease . . . Conversely, guilt can increase stress and undermine the immune system . . . This can lead to, for instance, forgetfulness, eating disorders, heart problems or brain damage.’ The ‘health police’, as ARISE sometimes called them, could be causing more harm than good.

ARISE received an astonishing amount of coverage. Between September 1993 and March 1994, for example, it generated 195 newspaper articles, and radio and television interviews, in places like the *Wall Street Journal*, *International Herald Tribune*, *The Independent*, *The Evening Standard*, *El Pais*, *La Repubblica*, RAI and the BBC. Much of this coverage resulted from a MORI poll, called ‘Naughty but Nice’, that ARISE claimed to have commissioned, into the guilty pleasures people enjoyed most. Here is a typical example (this one written by Reuters):

‘Puritanical health workers who dictate whether people should smoke or drink alcohol and coffee are trying to ruin the quality of life, a group of academics said . . . Many of us hold the view that it is a person's right to enjoy these pleasures . . .’ said Professor David

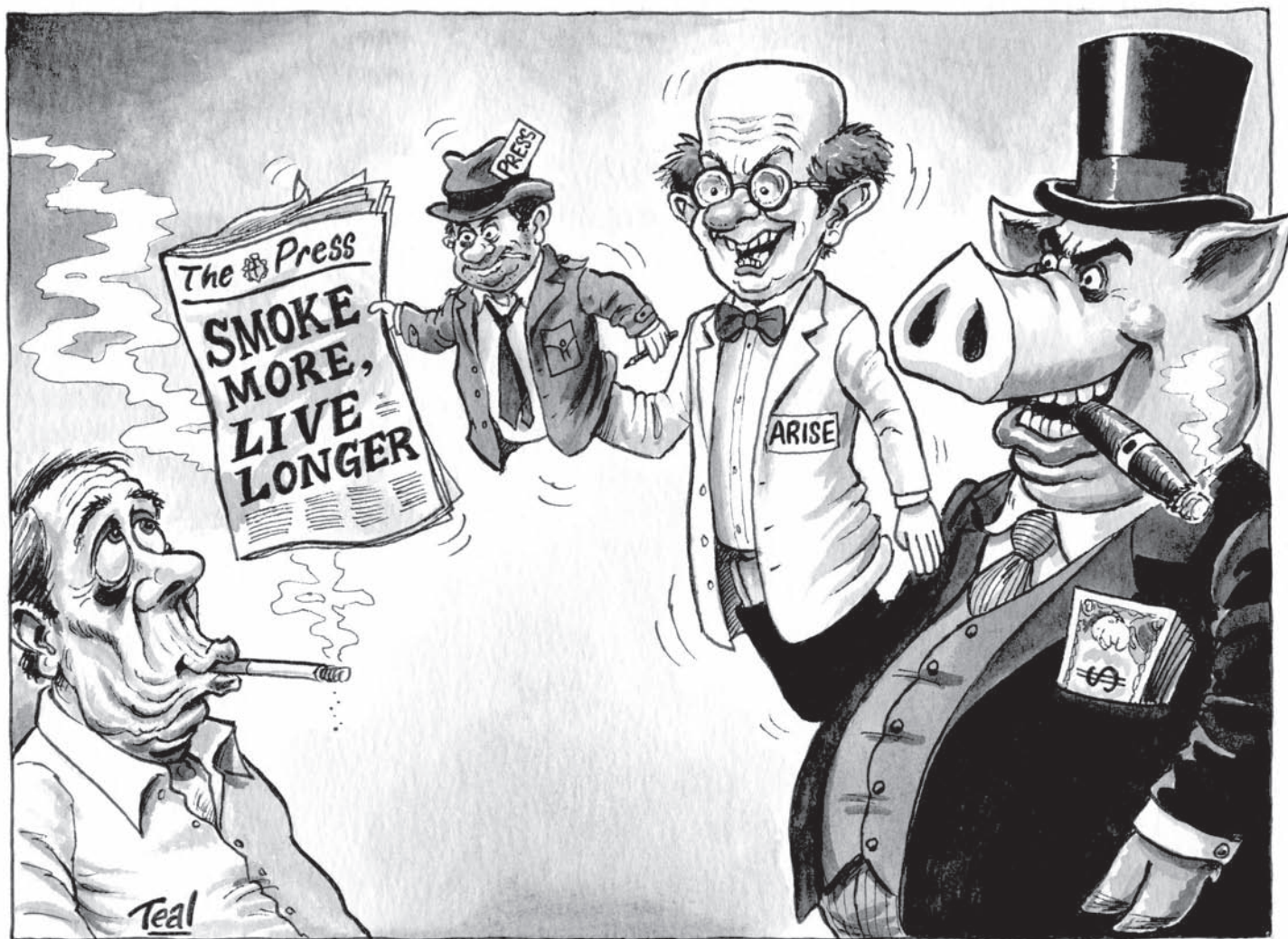
Warburton, a professor of pharmacology at Reading University in England . . . ‘Much of health promotion is based on misinformation. It is politically driven.’

The *Today* programme gave David Warburton an uncontested interview in the prime spot – at 8.20am. He extolled the calming properties of cigarettes and poured scorn on public health messages. ARISE has also featured three times in *The Guardian*. Coverage like this continued until October 2004, when *The Times* repeated ARISE's claim that we should stop ‘worrying about often ill-founded health scares’ and ‘listen to our bodies, which naturally seek to protect themselves from disease by doing the things we enjoy’. In hundreds of articles and transcripts covering its assertions, I have found just one instance of a journalist – Madeleine Bunting in *The Guardian* – questioning either ARISE's science or the motivation of the scientists.

The man who claimed to run the group, Professor David Warburton, was head of psychopharmacology at the University of Reading. During the period in which it was active, he published at least a dozen articles on nicotine in the academic press. In 1989, in *The Psychologist*, he mocked the finding by the US Surgeon-General that nicotine is addictive. Most of his articles were published in the journal *Psychopharmacology*, of which he was a senior editor. They maintained that nicotine improved both attention and memory. I have read seven of these papers. On none of them could I find a declaration of financial interests, except for two grants from the Wellcome Trust.

In 1998, as part of a settlement of a class action against the tobacco companies in the US, the firms were obliged to place their internal documents in a public archive. Among them is the one I came across last month. It is a memo from an executive in the corporate services department of Philip Morris – the world's largest tobacco company – to one of her colleagues. The title is ‘ARISE 1994-95 Activities and Funding’.

‘I had a meeting,’ she began, ‘with Charles Hay and Jacqui Smithson (Rothmans) to agree



on the 1994-1995 activity plan for ARISE and to discuss the funding needed. Enclosed is a copy of our presentation.'

This showed that in the previous financial year, ARISE had received \$373,400. Of this, \$2000 had come from Coca-Cola, \$900 from other firms, and the remainder from Philip Morris, British American Tobacco (BAT), RJ Reynolds and Rothmans. Over 99 per cent of its funding, in other words, had been provided by the tobacco companies.

For 1994-95, ARISE's budget would be \$773,750. Rothmans and RJ Reynolds had each committed to provide \$200,000 of this, and BAT 'has also shown interest'. She suggested that Philip Morris put up \$300,000. Then the memo becomes even more interesting.

'The previous 'Naughty but Nice' MORI poll proved to be very effective in getting wide media coverage. The exercise will be repeated this year on the theme of 'Stress in the Workplace' . . . A draft questionnaire was already submitted to T. Andrade and M. Winokur for comments.' [Tony Andrade was

Philip Morris's senior lawyer, and Matt Winokur, its director of regulatory affairs]. 'We decided to hold,' it continued, 'ARISE's next conference in Europe', because of the 'positive European media coverage'. Philip Morris had appointed a London PR agency to run the media operation, set up ARISE's secretariat and help to recruit new members. ARISE's 'major spending authorisation and approval would be handled by an 'informal' Budget Committee involving PM, Rothmans and possibly RJR and BAT'.

The memo suggests, in other words, that ARISE was run and managed not by eminent scientists, but by eminent tobacco companies. This impression is reinforced by another document in the tobacco archive, which explains how the group began. 'In 1988 the US Surgeon-General said: 'Nicotine was as addictive as heroin or cocaine.' The industry responded. A group of academics was identified and called together to: review the science of substance abuse; separate nicotine from these substances.'

I sent a list of questions to Professor Warburton, but he told me that he did not

“How many more undeclared recipients of corporate money have been appearing on the *Today* programme, providing free public relations to their sponsors?”

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COMMENTS

have time to answer them. Reading University replied that it knew Professor Warburton's work had been sponsored by the tobacco companies. Indeed, the University itself had received over £300,000 from ARISE, though 'from the University's standpoint, the source of funding for ARISE has always been vague'. It revealed that 'Professor Warburton and the University of Reading were in receipt of BAT research funding between 1995 and 2003'. But at no time had it questioned this funding or sought to oblige Warburton to declare his interests in academic papers. Astonishingly, it suggested that this would amount to 'censorship' and 'restricting academic freedom'.

The journal *Psychopharmacology* told me that it was unaware that Professor Warburton had been taking money from the tobacco companies. 'It is an author's responsibility to disclose sources of funding, and widely understood that journals themselves do not expect to police this declaration.'

After a long career untroubled by questions about his interests or his professional ethics, David Warburton retired in 2003. He still lectures at Reading as Emeritus Professor.

How much more science is being published in academic journals with undeclared interests like these? How many more media campaigns against 'over-regulation', the 'compensation culture' or 'unfounded public fears' have been secretly funded and steered by corporations? How many more undeclared recipients of corporate money have been appearing on the *Today* programme, providing free public relations for their sponsors? This case suggests to me that both academia and the media have failed dismally to exercise sufficient scepticism. Surely there is one obvious question with which every journal and every journalist should begin: 'Who's funding you?'

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Free speech? I don't think so

BY ROBIN PAGE

The Orwellian overtones of the Local Government Act of 2000 are causing Robin Page acute discomfort as he prepares to be 're-trained'

I have to say, with a degree of pride, that the local Standards Board for South Cambridgeshire has found me guilty and consider me to be a very naughty boy. By showing a 'lack of respect' to a fellow councillor, I have brought South Cambridgeshire District Council into disrepute and, as a result, have been banned from attending Planning Committee meetings for three months. As the longest serving district councillor at South Cambs – 35 years – the only way I could avoid the punishment was to apologise to the other councillor and be 're-trained'. That's right. In true Orwellian 1984 style 're-trained' – '2 + 2 = 5, War is Peace' and the government's Local Government Act of 2000 is good for free speech – I think not.

My crime was quite extraordinary. A local developer had wanted to get planning permission for a sporting development in the Green Belt and, by his own admission later, he confirmed that it would have opened up the area for development. That was my big worry – the safety of the Green Belt. Then a neighbouring councillor phoned me to say that she had been to a meeting with the developer and thought the sports facilities were a good idea. Following this, I had the temerity to say that the councillor had been to a 'soirée' with the developer – that was my crime.

My trial – oddly called a 'hearing' – then followed, lasting a whole day. I thought 'hearings' implied that people listened, but there was not much sign of that. The three local Standards Board members then sat for over seven hours while a barrister from London, representing the Standards Board for England, argued the meaning of the word 'soirée'. The decision was that it is evidently fine for a councillor to have a private meeting with a developer over unlocking the Green Belt, but she had only received tea and biscuits from the developer, which did not constitute a 'soirée'. Consequently, I was guilty. If only this was a joke and I was making it up – but it is true.

The Standards Board for England also picked on a colleague and, unlike me – I represented myself – he employed solicitors to defend him. He won, at a cost of £2,000. Although he won, there is no way under the outrageous Local Government Act for the innocent to recoup their money. Because of this, many good parish,

district and county councillors are giving up, not wanting the stress, humiliation, insult and financial cost of dealing with the Standards Board. Consequently, local government is falling into the hands of compliant 'yes men' – an identical method to that used by Joseph Stalin in helping him to help him get his way.

It gets worse: another colleague has just received a 44-page charge sheet and is already banned from attending planning meetings before his case is even heard. His crimes are speaking out at public meetings about a monster development to be imposed shortly on his village. To compound his crime, he can see the site from his own house – this, according to Standards Board for England, gives him a 'prejudicial interest' and prevents him speaking at meetings, despite huge support from his local community. Legal opinion is concerned that a 'hypothetical member of the public' might think the councillor is prejudiced. So, according to the Local Government Act 2000, one hypothetical member of the public is more important than hundreds of voters who elect people like me and my colleague to represent their views and their fears. To make matters worse, I believe that it might have been planning officers who reported my colleague after he had asked a number of difficult, but relevant, questions; as a result he has been effectively silenced.

More is to come. Close to me a cement works is planned to increase five-fold, with a huge incinerator burning toxic waste to drive it. I recently spoke in my village hall against it – it was the largest and angriest public meeting I can remember in the parish and virtually all those attending were against the development. By speaking publicly against the scheme – before speaking at the Council – I have, according to Prescott's crazy law, shown a 'prejudicial interest'. I believe that the Local Government Act of 2000 was only introduced to control local councillors and to allow development plans to get passed quicker – without opposition.

I intend to speak up for my village outside council meetings and inside council meetings. If they want to stop me they will have to carry me kicking and screaming out of the Council Chamber, or lock me up. Sorry Mr. Prescott, this is known as freedom and democracy.

“Local government is falling into the hands of compliant 'yes men' – an identical method to that used by Joseph Stalin in helping him to get his way.”

SUCK ON THIS

The human species has been breastfeeding for nearly half a million years. It's only in the last 60 years that we have begun to give babies the highly processed convenience food called 'formula'. The health consequences - twice the risk of dying in the first six weeks of life, five times the risk of gastroenteritis, twice the risk of developing eczema and diabetes and up to eight times the risk of developing lymphatic cancer - are staggering. With UK formula manufacturers spending around £20 per baby promoting this 'baby junk food', compared to the paltry 14 pence per baby the government spends promoting breastfeeding, can we ever hope to reverse the trend?

Pat Thomas uncovers a world where predatory baby milk manufacturers, negligent health professionals and an ignorant, unsympathetic public all conspire to keep babies off the breast and on the bottle.

All mammals produce milk for their young, and the human species has been nurturing its babies at the breast for at least 400,000 years. For centuries, when a woman could not feed her baby herself, another lactating woman, or 'wet nurse', took over the job. It is only in the last 60 years or so that we have largely abandoned our mammalian instincts and, instead, embraced a bottlefeeding culture that not

only encourages mothers to give their babies highly processed infant formulas from birth, but also to believe that these breastmilk substitutes are as good as, if not better than, the real thing.

Infant formulas were never intended to be consumed on the widespread basis that they are today. They were conceived in the late 1800s as a means of providing necessary sustenance for foundlings and orphans who would otherwise have starved. In this narrow context - where no other food was available - formula was a lifesaver.

However, as time went on, and the subject of human nutrition in general - and infant nutrition, in particular - became more 'scientific', manufactured breastmilk substitutes were sold to the general public as a technological improvement on breastmilk.

'If anybody were to ask 'which formula should I use?' or 'which is nearest to mother's milk?', the answer would be 'nobody knows' because there is not one single objective source of that kind of information provided by anybody,' says Mary Smale, a breastfeeding counsellor with the National Childbirth Trust (NCT) for 28 years. 'Only the manufacturers know what's in their stuff, and they aren't telling. They may advertise special 'healthy' ingredients like oligosaccharides, long-chain fatty acids or, a while ago, beta-carotene, but they never actually tell you what the basic product is made from or where the ingredients come from.'



“

There can be no food more locally produced, more sustainable or more environmentally friendly than a mother's breastmilk, the only food required by an infant for the first six months of life. It is a naturally renewable resource, which requires no packaging or transport, results in no wastage and is free.

”

BREASTFEEDING

The known constituents of breastmilk were and are used as a general reference for scientists devising infant formulas. But, to this day, there is no actual 'formula' for formula. In fact, the process of producing infant formulas has, since its earliest days, been one of trial and error.

Within reason, manufacturers can put anything they like into formula. In fact, the recipe for one product can vary from batch to batch, according to the price and availability of ingredients. While we assume that formula is heavily regulated, no transparency is required of manufacturers: they do not, for example, have to log the specific constituents of any batch or brand with any authority.

Most commercial formulas are based on cow's milk. But before a baby can drink cow's milk in the form of infant formula, it needs to be severely modified. The protein and mineral content must be reduced and the carbohydrate content increased, usually by adding sugar. Milk fat, which is not easily absorbed by the human body, particularly one with an immature digestive system, is removed and substituted with vegetable, animal or mineral fats.

Vitamins and trace elements are added, but not always in their most easily digestible form. (This means that the claims that formula is 'nutritionally complete' are true, but only in the crudest sense of having had added the full complement of vitamins and minerals to a nutritionally inferior product.)

Many formulas are also highly sweetened. While most infant formulas do not contain sugar in the form of sucrose, they can contain high levels of other types of sugar such as lactose (milk sugar), fructose (fruit sugar), glucose (also known as dextrose, a simple sugar found in plants) and maltodextrine (malt sugar). Because of a loophole in the law, these can still be advertised as 'sucrose free'.

Formula may also contain unintentional contaminants introduced during the manufacturing process. Some may contain traces of genetically engineered soya and corn.

The bacteria *Salmonella* and aflatoxins – potent toxic, carcinogenic, mutagenic, immunosuppressive agents produced by species of the fungus *Aspergillus* – have regularly been detected in commercial

formulas, as has *Enterobacter sakazakii*, a devastating foodborne pathogen that can cause sepsis (overwhelming bacterial infection in the bloodstream), meningitis (inflammation of the lining of the brain) and necrotising enterocolitis (severe infection and inflammation of the small intestine and colon) in newborn infants.

The packaging of infant formulas occasionally gives rise to contamination with broken glass and fragments of metal as well as industrial chemicals such as phthalates and bisphenol A (both carcinogens) and, most recently, the packaging constituent isopropyl thioxanthone (ITX; another suspected carcinogen).

Infant formulas may also contain excessive levels of toxic or heavy metals, including aluminium, manganese, cadmium and lead.

Soya formulas are of particular concern due to the very high levels of plant-derived oestrogens (phytoestrogens) they contain. In fact, concentrations of phytoestrogens detected in the blood of infants receiving soya formula can be 13,000 to 22,000 times greater than the concentrations of natural oestrogens. Oestrogen in doses above those normally found in the body can cause cancer.

Killing babies

For years, it was believed that the risks of illness and death from bottlefeeding were largely confined to children in developing countries, where the clean water necessary to make up formula is sometimes scarce and where poverty-stricken mothers may feel obliged to dilute formula to make it stretch further, thus risking waterborne illnesses such as diarrhoea and cholera as well as malnutrition in their babies. But newer data from the West clearly show that babies in otherwise affluent societies are also falling ill and dying due to an early diet of infant convenience food.

Because it is not nutritionally complete, because it does not contain the immune-boosting properties of breastmilk and because it is being consumed by growing babies with vast, ever-changing nutritional needs – and not meeting those needs – the health effects of sucking down formula day after day early in life can be devastating in both the short and long term.

BREASTMILK vs FORMULA: NO CONTEST

Breastmilk is a 'live' food that contains living cells, hormones, active enzymes, antibodies and at least 400 other unique components. It is a dynamic substance, the composition of which changes from the beginning to the end of the feed and according to the age and needs of the baby. Because it also provides active immunity, every time a baby breastfeeds it also receives protection from disease. Compared to this miraculous substance, the artificial milk sold as infant formula is little more than junk food. It is also the only manufactured food that humans are encouraged to consume exclusively for a period of months, even though we know that no human body can be expected to stay healthy and thrive on a steady diet of processed food.



BREAST MILK	FORMULA	COMMENTS
FATS		
Rich in brain-building omega-3s, namely, DHA and AA. Automatically adjusts to infant's needs; levels decline as baby gets older. Rich in cholesterol; nearly completely absorbed. Contains the fat-digesting enzyme lipase	No DHA Doesn't adjust to infant's needs No cholesterol Not completely absorbed No lipase	The most important nutrient in breastmilk; the absence of cholesterol and DHA may predispose a child to adult heart and CNS diseases. Leftover, unabsorbed fat accounts for unpleasant smelling stools in formula-fed babies
PROTEIN		
Soft, easily digestible whey. More completely absorbed; higher in the milk of mothers who deliver preterm. Lactoferrin for intestinal health. Lysozyme, an antimicrobial. Rich in brain- and body-building protein components. Rich in growth factors. Contains sleep-inducing proteins	Harder-to-digest casein curds Not completely absorbed, so more waste, harder on kidneys Little or no lactoferrin No lysozyme. Deficient or low in some brain- and body-building proteins Deficient in growth factors Contains fewer sleep-inducing proteins	Infants aren't allergic to human milk proteins
CARBOHYDRATES		
Rich in oligosaccharides, which promote intestinal health	No lactose in some formulas Deficient in oligosaccharides	Lactose is important for brain development
IMMUNE-BOOSTERS		
Millions of living white blood cells, in every feeding Rich in immunoglobulins	No live white blood cells or any other cells. Has no immune benefit	Breastfeeding provides active and dynamic protection from infections of all kinds Breastmilk can be used to alleviate a range of external health problems such as nappy rash and conjunctivitis
VITAMINS & MINERALS		
Better absorbed Iron is 50–75 per cent absorbed Contains more selenium (an antioxidant)	Not absorbed as well Iron is 5–10 per cent absorbed Contains less selenium (an antioxidant)	Nutrients in formula are poorly absorbed. To compensate, more nutrients are added to formula, making it harder to digest
ENZYMES & HORMONES		
Rich in digestive enzymes such as lipase and amylase. Rich in many hormones such as thyroid, prolactin and oxytocin. Taste varies with mother's diet, thus helping the child acclimatise to the cultural diet	Processing kills digestive enzymes Processing kills hormones, which are not human to begin with Always tastes the same	Digestive enzymes promote intestinal health; hormones contribute to the biochemical balance and wellbeing of the baby
COST		
Around £350/year in extra food for mother if she was on a very poor diet to begin with	Around £650/year. Up to £1300/year for hypoallergenic formulas. Cost for bottles and other supplies. Lost income when parents must stay home to care for a sick baby	In the UK, the NHS spends £35 million each year just treating gastroenteritis in bottlefed babies. In the US, insurance companies pay out \$3.6 billion for treating diseases in bottlefed babies



Compared to Breastfed babies, **BOTTLEFED BABIES ARE...**

TWICE as likely to die from any cause in the first six weeks of life

TWO TO FIVE TIMES more likely to die from SIDS (sudden infant death syndrome)

FIVE times more likely to be admitted to hospital suffering from gastroenteritis

TWICE as likely to suffer from diarrhoea

TWICE as likely to suffer from otitis media (inner-ear infection)

TWICE as likely to develop eczema or a wheeze if there is a family history of atopic disease

FIVE times more likely to develop urinary tract infections

SIX to TEN times more likely to develop necrotising enterocolitis – a serious infection of the intestine, in the first six months of life.

TWICE as likely to develop juvenile-onset insulin-dependent (type 1) diabetes

FIVE to EIGHT times more likely to develop lymphomas before the age of

In later life, studies have shown that bottlefed babies have a greater tendency towards developing:

childhood inflammatory bowel disease, multiple sclerosis, dental malocclusion, coronary heart disease, diabetes, hyperactivity, autoimmune thyroid disease and coeliac disease.

Bottlefed babies are twice as likely to die from any cause in the first six weeks of life. In particular, bottlefeeding raises the risk of SIDS (sudden infant death syndrome) by two to five times. Bottlefed babies are also at a significantly higher risk of ending up in hospital with a range of infections. They are, for instance, five times more likely to be admitted to hospital suffering from gastroenteritis.

Even in developed countries, bottlefed babies have rates of diarrhoea twice as high as breastfed ones. They are twice as likely (20 per cent vs 10 per cent) to suffer from otitis media (inner-ear infection), twice as likely to develop eczema or a wheeze if there is a family history of atopic disease, and five times more likely to develop urinary tract infections. In the first six months of life, bottlefed babies are six to 10 times more likely to develop necrotising enterocolitis – a serious infection of the intestine, with intestinal tissue death – a figure that increases to 30 times the risk after that time.

Even more serious diseases are also linked with bottlefeeding. Compared with infants who are fully breastfed even for only three to four months, a baby drinking artificial milk is twice as likely to develop juvenile-onset insulin-dependent (type 1) diabetes. There is also a five- to eightfold risk of developing lymphomas in children under 15 who were formula-fed, or breastfed for less than six months.

In later life, studies have shown that bottlefed babies have a greater tendency towards developing conditions such as childhood inflammatory bowel disease, multiple sclerosis, dental malocclusion, coronary heart disease, diabetes, hyperactivity, autoimmune thyroid disease and coeliac disease.

For all of these reasons, formula cannot be considered even 'second best' compared with breastmilk. Officially, the World Health Organization (WHO) designates formula milk as the last choice in infant-feeding: Its first choice is breastmilk from the mother; second choice is the mother's own milk given via cup or bottle; third choice is breastmilk from a milk bank or wet nurse and, finally, in fourth place, formula milk.

And yet, breastfed babies are becoming an endangered species. In the UK, rates are catastrophically low and have been

that way for decades. Current figures suggest that only 62 per cent of women in Britain even attempt to breastfeed (usually while in hospital). At six weeks, just 42 per cent are breastfeeding. By four months, only 29 per cent are still breastfeeding and, by six months, this figure drops to 22 per cent.

These figures could come from almost any developed country in the world and, it should be noted, do not necessarily reflect the ideal of 'exclusive' breastfeeding. Instead, many modern mothers practice mixed feeding – combining breastfeeding with artificial baby milks and infant foods. Worldwide, the WHO estimates that only 35 per cent of infants are getting any breastmilk at all by age four months and, although no one can say for sure because research into exclusive breastfeeding is both scarce and incomplete, it is estimated that only 1 per cent are exclusively breastfed at six months.

Younger women in particular are the least likely to breastfeed, with over 40 per cent of mothers under 24 never even trying. The biggest gap, however, is a socioeconomic one. Women who live in low-income households or who are poorly educated are many times less likely to breastfeed, even though it can make an enormous difference to a child's health.

In children from socially disadvantaged families, exclusive breastfeeding in the first six months of life can go a long way towards cancelling out the health inequalities between being born into poverty and being born into affluence. In essence, breastfeeding takes the infant out of poverty for those first crucial months and gives it a decent start in life.

So why aren't women breastfeeding?

Before bottles became the norm, breastfeeding was an activity of daily living based on mimicry, and learning within the family and community. Women became their own experts through the trial and error of the experience itself. But today, what should come more or less naturally has become extraordinarily complicated – the focus of global marketing strategies and politics, lawmaking, lobbying support groups, activists and the interference of a well-intentioned, but occasionally ineffective,

cult of experts.

According to Mary Smale, it's confidence and the expectation of support that make the difference, particularly for socially disadvantaged women.

'The concept of 'self efficacy' – in other words, whether you think you can do something – is quite important. You can say to a woman that breastfeeding is really a good idea, but she's got to believe various things in order for it to work. First of all, she has to think it's a good idea – that it will be good for her and her baby. Second, she has to think: 'I'm the sort of person who can do that'; third – and maybe the most important thing – is the belief that if she does have problems, she's the sort of person who, with help, will be able to sort them out.

'Studies show, for example, that women on low incomes often believe that breastfeeding hurts, and they also tend to believe that formula is just as good. So from the start, the motivation to breastfeed simply isn't there. But really, it's the thought that if there were any problems, you couldn't do anything about them; that, for instance, if it hurts, it's just the luck of the draw. This mindset is very different from that of a middle-class mother who is used to asking for help to solve things, who isn't frightened of picking up the phone, or saying to her midwife or health visitor, 'I want you to help me with this.'

Nearly all women – around 99 per cent – can breastfeed successfully and make enough milk for their babies to not simply grow, but to thrive. With encouragement, support and help, almost all women are willing to initiate breastfeeding, but the drop-off rates are alarming: 90 per cent of women who give up in the first six weeks say that they would like to have continued. And it seems likely that long-term exclusive breastfeeding rates could be improved if consistent support were available, and if approval within the family and the wider community for breastfeeding, both at

home and in public, were more obvious and widespread.

Clearly, this social support isn't there, and the bigger picture of breastfeeding vs bottlefeeding suggests that there is, in addition, a confluence of complex factors – medical, socioeconomic, cultural and political – that regularly undermine women's confidence, while reinforcing the notion that feeding their children artificially is about lifestyle rather than health, and that the modern woman's body is simply not up to the task of producing enough milk for its offspring.

'Breastfeeding is a natural negotiation between mother and baby and you interfere with it at your peril,' says Professor Mary Renfrew, Director of the Mother and Infant Research Unit, University of York. 'But, in the early years of the last century, people were very busy interfering with it. In terms of the ecology of breastfeeding, what you have is a natural habitat that has been disturbed. But it's not just the presence of one big predator – the invention of artificial milk – that is important. It is the fact that the habitat was already weakened by other forces that made it so vulnerable to disaster.

'If you look at medical textbooks from the early part of the 20th century, you'll find many quotes about making breastfeeding scientific and exact, and it's out of these that you can see things beginning to fall apart.' This falling apart, says Renfrew, is largely due to the fear and mistrust that science had of the natural process of breastfeeding. In particular, the fact that a mother can put a baby on the breast and

do something else while breastfeeding, and have the baby naturally come off the breast when it's had enough, was seen as disorderly and inexact. The medical/scientific model replaced this natural situation with precise measurements – for instance, how many millilitres of milk a baby should ideally have at each sitting – which skewed the natural balance

between mother and baby, and established bottlefeeding as a biological norm.

Breastfeeding rates also began to decline as a consequence of women's changed circumstances after World War I, as more women left their children behind to go into the workplace as a consequence of women's emancipation – and the loss of men in the 'killing fields' – and to an even larger extent with the advent of World War II, when even more women entered into employment outside of the home.

'There was also the first wave of feminism,' says Renfrew, 'which stamped into everyone's consciousness in the 60s, and encouraged women get away from their babies and start living their lives. So the one thing that might have helped – women supporting each other – actually created a situation where even the intellectual, engaged, consciously aware women who might have questioned this got lost for a while. As a consequence, we ended up with a widespread and declining confidence in breastfeeding, a declining understanding of its importance and a declining ability of health professionals to support it. And, of course, all this ran along the same timeline as the technological development of artificial milk and the free availability of formula.'

Medicalised birth

Before World War II, pregnancy and birth – and, by extension, breastfeeding – were part of the continuum of normal life. Women gave birth at home with the assistance and support of trained midwives, who were themselves part of the community, and afterwards they breastfed with the encouragement of family and friends.

Taking birth out of the community and relocating it into hospitals gave rise to the medicalisation of women's reproductive lives. Life events were transformed into medical problems, and traditional knowledge was replaced with scientific and technological solutions. This medicalisation resulted in a cascade of interventions that deeply undermined women's confidence in their abilities to conceive and grow a healthy baby, give birth to it and then feed it.

The cascade falls something like this: Hospitals are institutions; they are impersonal and, of necessity, must run

Are infant formula manufacturers simply clever entrepreneurs doing their jobs or human-rights violators of the worst kind?

BREASTFEEDING

on schedules and routines. For a hospital to run smoothly, patients must ideally be sedate and immobile. For the woman giving birth, this meant lying on her back in a bed, an unnatural position that made labour slow, unproductive and very much more painful.

To 'fix' these iatrogenically dysfunctional labours, doctors developed a range of drugs (usually synthetic hormones such as prostaglandins or syntocinon), technologies (such as forceps and vacuum extraction) and procedures (such as episiotomies) to speed the process up. Speeding up labour artificially made it even more painful and this, in turn, led to the development of an array of pain-relieving drugs. Many of these were so powerful that the mother was often unconscious or deeply sedated at the moment of delivery and, thus, unable to offer her breast to her newborn infant.

All pain-relieving drugs cross the placenta, so even if the mother were conscious, her baby may not have been, or may have been so heavily drugged that its natural rooting instincts (which help it find the nipple) and muscle coordination (necessary to latch properly onto the breast) were severely impaired.

While both mother and baby were recovering from the ordeal of a medicalised birth, they were, until the 1970s and 1980s, routinely separated. Often, the baby wasn't 'allowed' to breastfeed until it had a bottle first, in case there was something wrong with its gastrointestinal tract. Breastfeeding, when it took place at all, took place according to strict schedules. These feeding schedules – usually on a three- or four-hourly basis – were totally unnatural for human newborns, who need to feed 12 or more times in any 24-hour period. Babies who were inevitably hungry between feeds were routinely given supplements of water and/or formula.

'There was lots of topping up,' says Professor Renfrew. 'The way this 'scientific' breastfeeding happened in hospital was that the baby would be given two minutes on each breast on day one, then four minutes on each breast on day two, seven minutes on each on day three, and so on. This created enormous anxiety since the mother would then be watching the clock instead of the baby. The babies

would then get topped-up after every feed, then topped-up again throughout the night rather than brought to their mothers to feed. So you had a situation where the babies were crying in the nursery, and the mothers were crying in the postnatal ward. That's what we called 'normal' all throughout the 60s and 70s.'

Breastmilk is produced on a supply-and-demand basis, and these topping-up routines, which assuaged infant hunger and lessened demand, also reduced the mother's milk supply. As a result, women at the mercy of institutionalised birth experienced breastfeeding as a frustrating struggle that was often painful and just as often unsuccessful.

When, under these impossible circumstances, breastfeeding 'failed', formula was offered as a 'nutritionally complete solution' that was also more 'modern', 'cleaner' and more 'socially acceptable'.

At least two generations of women have been subjected to these kinds of damaging routines and, as a result, many of today's mothers find the concept of breastfeeding strange and unfamiliar, and very often framed as something that can and frequently does not 'take', something they might 'have a go' at but, equally, something that they shouldn't feel too badly about if it doesn't work out.

Professional failures

The same young doctors, nurses and midwives who were pioneering this medical model of reproduction are now running today's health services. So, perhaps not surprisingly, modern hospitals are, at heart, little different from their predecessors. They may have TVs and CD players, and prettier wallpaper, and the drugs may be more sophisticated, but the basic goals and principles of medicalised birth have changed very little in the last 40 years – and the effect on breastfeeding is still as devastating.

In many cases, the healthcare providers' views on infant-feeding are based on their own, highly personal experiences. Surveys show, for instance, that the most important factor influencing the effectiveness and accuracy of a doctor's breastfeeding advice is whether the doctor herself, or the doctor's wife, had breastfed her children. Likewise, a midwife, nurse or health visitor formula-fed her own children is unlikely to be an effective advocate for breastfeeding.

More worrying, these professionals can end up perpetuating damaging myths about breastfeeding that facilitate its failure. In some hospitals, women are still advised to limit the amount of time, at first, that a baby sucks on each breast, to 'toughen up' their nipples. Or they are told their babies get all the milk they 'need' in the first 10 minutes and sucking after this time is unnecessary. Some are still told to stick to four-hour feeding schedules. Figures from the UK's Office of National Statistics show that we are still topping babies up. In 2002, nearly 30 per cent of babies in UK hospitals were given supplemental bottles by hospital staff, and nearly 20 per cent of all babies were

separated from their mothers at some point while in hospital.

Continued inappropriate advice from medical professionals is one reason why, in 1991, UNICEF started the Baby Friendly Hospital Initiative (BFHI) – a certification system for hospitals meeting certain criteria known to promote successful breastfeeding. These criteria include: training all healthcare staff on how to facilitate breastfeeding;

Women do not fail to breastfeed. Health professionals, health agencies and governments fail to educate and support women who want to breastfeed.

helping mothers start breastfeeding within one hour of birth; giving newborn infants no food or drink other than breastmilk, unless medically indicated; and the hospital not accepting free or heavily discounted formula and supplies. In principle, it is an important step in the promotion of breastfeeding, and studies

show that women who give birth in Baby Friendly hospitals do breastfeed for longer.

In Scotland, for example, where around 50 per cent of hospitals are rated Baby Friendly, breastfeeding initiation rates have increased dramatically in recent years. In Cuba, where 49 of the country's 56 hospitals and maternity facilities are Baby Friendly, the rate of exclusive breastfeeding at four months almost tripled in six years – from 25 per cent in 1990 to 72 per cent in 1996. Similar increases have been found in Bangladesh, Brazil and China.

Unfortunately, interest in obtaining BFHI status is not universal. In the UK, only 43 hospitals (representing just 16 per cent of all UK hospitals) have achieved full accreditation – and none are in London. Out of the approximately 16,000 hospitals worldwide that have qualified for the Baby Friendly designation, only 32 are in the US. What's more, while Baby Friendly hospitals achieve a high initiation rate, they cannot guarantee continuation of breastfeeding once the woman is back in the community. Even among women who give birth in Baby Friendly hospitals, the number who exclusively breastfeed for six months is unacceptably low.

The influence of advertising

Baby Friendly hospitals face a daunting task in combatting the laissez-faire and general ignorance of health professionals, mothers and the public at large. They are also fighting a difficult battle with an acquiescent media which, through politically correct editorialising aimed at assuaging mothers' guilt if they bottlefeed and, more influentially, through advertising, has helped redefine formula as an acceptable choice.

Although there are now stricter limitations on the advertising of infant formula, for years, manufacturers were able, through advertising and promotion, to define the issue of infant-feeding in both the scientific world (for instance, by providing doctors with growth charts that established the growth patterns of bottlefed babies as the norm) and in its wider social context, reframing perceptions of what is appropriate and what is not.

As a result, in the absence of communities of women talking to each other about pregnancy, birthing and mothering, women's choices today are more directly influenced by commercial leaflets, booklets and advertising than almost anything else.

Baby-milk manufacturers spend countless millions devising marketing strategies that keep their products at the forefront of public consciousness. In the UK, formula companies spend at least £12 million per year on booklets, leaflets and other promotions, often in the guise of 'educational materials'. This works out at approximately £20 per baby born. In contrast, the UK government spends about 14 pence per newborn each year to promote breastfeeding.

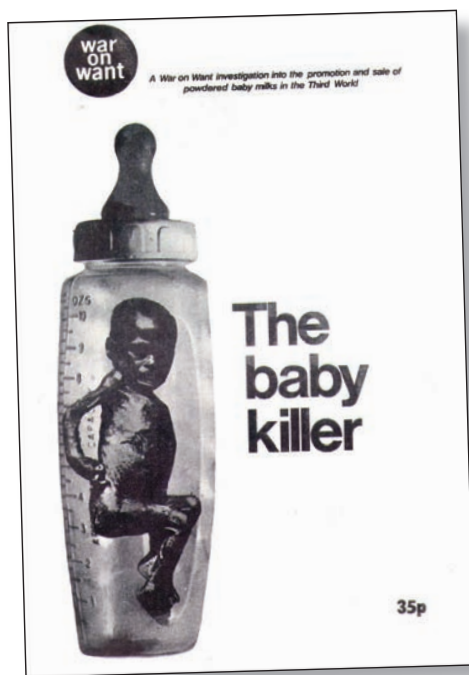
It's a pattern of inequity that is repeated throughout the world – and not just in the arena of infant-feeding. The food-industry's global advertising budget is \$40 billion, a figure greater than the gross domestic product (GDP) of 70 per cent of the world's nations. For every \$1 spent by the WHO on preventing the diseases caused by Western diets, more than \$500 is spent by the food industry to promote such diets.

Since they can no longer advertise infant formulas directly to women (for instance, in mother and baby magazines or through direct leafleting), or hand out free samples in hospitals or clinics, manufacturers have started to exploit other outlets, such as mother and baby clubs, and Internet sites that purport to help busy mothers get all the information they need about infant-feeding. They also occasionally rely on subterfuge. Manufacturers are allowed to advertise follow-on milks, suitable for babies over six months, to parents. But, sometimes, these ads feature a picture of a much younger baby, implying the product's suitability for infants.

The impact of these types of promotions should not be underestimated. A 2005 NCT/UNICEF study in the UK determined that one-third of British mothers who admitted to seeing formula advertisements in the previous six months believed that infant formula was as good or better than breastmilk. This revelation is all the more surprising since advertising of infant



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Nasty

Helmut Maucher, a powerful corporate lobbyist and honorary chairman of Nestlé – the company that claims 40 per cent of the global baby-food market – has gone on record as saying: ‘Ethical decisions that injure a firm’s ability to compete are actually immoral’.

formula to mothers has been banned for many years in several countries, including the UK.

To get around restrictions that prevent direct advertising to parents, manufacturers use a number of psychological strategies that focus on the natural worries that new parents have about the health of their babies. Many of today’s formulas, for instance, are conceived and sold as solutions to the ‘medical’ problems of infants such as lactose intolerance, incomplete digestion and being ‘too hungry’ – even though many of these problems can be caused by inappropriately giving cow’s milk formula in the first place.

The socioeconomic divide among breastfeeding mothers is also exploited by formula manufacturers, as targeting low-income women (with advertising as well as through welfare schemes) has proven very profitable.

When presented with the opportunity to provide their children with the best that science has to offer, many low-income mothers are naturally tempted by formula. This is especially true if they receive free samples, as is still the case in many developing countries.

But the supply-and-demand nature of breastmilk is such that, once a mother accepts these free samples and starts her baby on formula, her own milk supply will quickly dry up. Sadly, after these mothers run out of formula samples and money-off coupons, they will find themselves unable to produce breastmilk and have no option but to spend large sums of money on continuing to feed their child with formula.

Even when manufacturers ‘promote’ breastfeeding, they plant what Mary Smale calls ‘seeds of ‘conditionality’ that can lead to failure. ‘Several years ago, manufacturers used to produce these amazing leaflets for women, encouraging women to breastfeed and reassuring them that they only need a few extra calories a day. You couldn’t fault them on the words, but the pictures which were of things like Marks & Spencer yoghurt and whole fish with their heads on, and wholemeal bread – but not the sort of wholemeal bread that you buy in the corner shop, the sort of wholemeal bread you buy in specialist shops.

The underlying message was clear: a healthy pregnancy and a good supply of breastmilk are the preserve of the middle classes, and that any women who doesn’t belong to that group will have to rely on other resources to provide for her baby.

A quick skim through any pregnancy magazine or the ‘Bounty’ pack – the glossy information booklet with free product samples given to new mothers in the UK – shows that these subtle visual messages, which include luxurious photos of whole grains and pulses, artistically arranged bowls of muesli, artisan loaves of bread and wedges of deli-style cheeses, exotic mangoes, grapes and kiwis, and fresh vegetables artistically arranged as crudités, are still prevalent.

Funding research

Manufacturers also ply their influence through contact with health professionals (to whom they can provide free samples for research and ‘educational purposes’) as middlemen. Free gifts, educational trips to exotic locations and funding for research are just some of the ways in which the medical profession becomes ‘educated’ about the benefits of formula.

According to Patti Rundall, OBE, policy director for the UK’s Baby Milk Action group, which has been lobbying for responsible marketing of baby food for over 20 years, ‘Throughout the last two decades, the baby-feeding companies have tried to establish a strong role for themselves with the medical profession, knowing that health and education services represent a key marketing opportunity. Companies are, for instance, keen to fund the infant-feeding research on which health policies are based, and to pay for midwives, teachers, education materials and community projects.’

They are also keen to fund ‘critical’ NGOs – that is, lay groups whose mandate is to inform and support women. But this sort of funding is not allowed by the International Code of Marketing of Breastmilk Substitutes (see below) because it prejudices the ability of these organisations to provide mothers with independent information about infant-feeding. Nevertheless, such practices remain prevalent – if somewhat more discreet than in the past – and continue to weaken health professionals’ advocacy

for breastfeeding.

Fighting back

When it became clear that declining breastfeeding rates were affecting infant health and that the advertising of infant formula had a direct effect on a woman's decision not to breastfeed, the International Code of Marketing of Breastmilk Substitutes was drafted and eventually adopted by the World Health Assembly (WHA) in 1981. The vote was near-unanimous, with 118 member nations voting in favour, three abstaining and one – the US – voting against. (In 1994, after years of opposition, the US eventually joined every other developed nation in the world as a signatory to the Code.)

The Code is a unique instrument that promotes safe and adequate nutrition for infants on a global scale by trying to protect breastfeeding and ensuring the appropriate marketing of breastmilk substitutes. It applies to all products marketed as partial or total replacements for breastmilk, including infant formula, follow-on formula, special formulas, cereals, juices, vegetable mixes and baby teas, and also applies to feeding bottles and teats. In addition, it maintains that no infant food may be marketed in ways that undermine breastfeeding. Specifically, the Code:

- Bans all advertising or promotion of these products to the general public
- Bans samples and gifts to mothers and health workers
- Requires information materials to advocate for breastfeeding, to warn against bottlefeeding and to not contain pictures of babies or text that idealises the use of breastmilk substitutes
- Bans the use of the healthcare system to promote breastmilk substitutes
- Bans free or low-cost supplies of breastmilk substitutes
- Allows health professionals to receive samples, but only for research purposes
- Demands that product information be factual and scientific
- Bans sales incentives for breastmilk substitutes and direct contact with mothers
- Requires that labels inform fully on the correct use of infant formula and the risks of misuse

■ Requires labels not to discourage breastfeeding.

This document probably couldn't have been created today. Since the founding of the World Trade Organization (WTO) and its 'free trade' ethos in 1995, the increasing sophistication of corporate power strategies and aggressive lobbying of health organisations has increased to the extent that the Code would have been binned long before it reached the voting stage.

However, in 1981, member states, corporations and NGOs were on a somewhat more equal footing. By preventing industry from advertising infant formula, giving out free samples, promoting their products in healthcare facilities or by way of mother-and-baby 'goody bags', and insisting on better labelling, the Code acts to regulate an industry that would otherwise be given a free hand to pedal an inferior food product to babies and infants.

Unfortunately . . .

Being a signatory to the Code does not mean that member countries are obliged to adopt its recommendations wholesale. Many countries, the UK included, have adopted only parts of it – for instance, the basic principle that breastfeeding is a good thing – while ignoring the nuts-and-bolts strategies that limit advertising and corporate contact with mothers. So, in the UK, infant formula for 'healthy babies' can be advertised to mothers through hospitals and clinics, though not via

the media.

What's more, formula manufacturers for their part continue to argue that the Code is too restrictive and that it stops them from fully exploiting their target markets. Indeed, Helmut Maucher, a powerful corporate lobbyist and honorary

'Breastfeeding is a natural negotiation between mother and baby and you interfere with it at your peril'.

PROFESSOR MARY RENFREW,
UNIVERSITY OF YORK

chairman of Nestlé – the company that claims 40 per cent of the global baby-food market – has gone on record as saying: 'Ethical decisions that injure a firm's ability to compete are actually immoral'.

And make no mistake, these markets are big. The UK baby-milk market is worth £150 million per year

and the US market around \$2 billion. The worldwide market for baby milks and foods is a staggering \$17 billion and growing by 12 per cent each year. From formula manufacturers' point of view, the more women breastfeed, the more profit is lost. It is estimated that, for every

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child exclusively breastfed for six months, an average of \$450 worth of infant food will not be bought. On a global scale, that amounts to billions of dollars in lost profits.

What particularly worries manufacturers is that, if they accept the Code without a fight, it could set a dangerous precedent for other areas of international trade – for instance, the pharmaceutical, tobacco, food and agriculture industries, and oil companies. This is why the focus on infant-feeding has been diverted away from children's health and instead become a symbolic struggle for a free market.

While most manufacturers publicly agree to adhere to the Code, privately, they deploy enormous resources in constructing ways to reinterpret or get round it. In this endeavour, Nestlé has shown a defiance and tenacity that beggars belief.

In India, for example, Nestlé lobbied against the Code being entered into law and when, after the law was passed, it faced criminal charges over its labelling, it issued a writ petition against the Indian government rather than accept the charges.

Years of aggressive actions like this, combined with unethical advertising and marketing practices, has led to an ongoing campaign to boycott the company's products that stretches back to 1977.

The Achilles' heel of the Code is that it does not provide for a monitoring office. This concept was in the original draft, but was removed from subsequent drafts. Instead, monitoring of the Code has been left to 'governments acting individually and collectively through the World Health Organization'.

But, over the last 25 years, corporate accountability has slipped lower down on the UN agenda, far behind free trade, self-regulation and partnerships. Lack of government monitoring means that small and comparatively poorly funded groups like the International Baby Food Action Network (IBFAN), which has 200 member groups working in over 100 countries, have taken on the job of monitoring Code violations almost by default. But while these watchdog groups can monitor and report Code violations to the health authorities, they cannot stop them.

In 2004, IBFAN's bi-annual report *Breaking the Rules, Stretching the Rules*, analysed the promotional practices of 16 international baby-food companies, and 14 bottle and teat companies, between January 2002 and April 2004. The researchers found some 2,000 violations of the Code in 69 countries.

On a global scale, reinterpreting the Code to suit marketing strategies is rife, and Nestlé continues to be the leader of the pack. According to IBFAN, Nestlé believes that only one of its products – infant formula – comes within the scope of the Code. The company also denies the universality of the Code, insisting that it only applies to developing nations. Where Nestlé, and the Infant Food Manufacturers Association that it dominates, leads, other companies have followed, and when companies like Nestlé are caught breaking the Code, the strategy is simple, but effective – initiate complex and boring discussions with organisations at WHO or WHA level about how best to interpret the Code in the hopes that these will offset any bad publicity and divert attention from the harm caused by these continual infractions.

According to Patti Rundall, it's important not to let such distractions divert attention from the bottom line: 'There can be no food more locally produced, more sustainable or more environmentally friendly than a mother's breastmilk, the only food required by an infant for the first six months of life. It is a naturally renewable resource, which requires no packaging or transport, results in no wastage and is free. Breastfeeding can also help reduce family poverty, which is a major cause of malnutrition.'

So perhaps we should be further simplifying the debate by asking: Are the companies who promote infant formula as the norm simply clever entrepreneurs doing their jobs or human-rights violators of the worst kind?

Not good enough

After more than two decades, it is clear that a half-hearted advocacy of breastfeeding benefits multinational formula manufacturers, not mothers and babies, and that the baby-food industry has no intention of complying with UN recommendations on infant-feeding or

with the principles of the International Code for Marketing of Breastmilk Substitutes – unless they are forced to do so by law or consumer pressure or, more effectively, both.

Women do not fail to breastfeed. Health professionals, health agencies and governments fail to educate and support women who want to breastfeed.

Without support, many women will give up when they encounter even small difficulties. And yet, according to Mary Renfrew, 'Giving up breastfeeding is not something that women do lightly. They don't just stop breastfeeding and walk away from it. Many of them fight very hard to continue it and they fight with no support. These women are fighting society – a society that is not just bottle-friendly, but is deeply breastfeeding-unfriendly.'

To reverse this trend, governments all over the world must begin to take seriously the responsibility of ensuring the good health of future generations. To do this requires deep and profound social change. We must stop harassing mothers with simplistic 'breast is best' messages and put time, energy and money into reeducating health professionals and society at large.

We must also stop making compromises. Government health policies such as, say, in the UK and US, which aim for 75 per cent of women to be breastfeeding on hospital discharge, are little more than paying lip service to the importance of breastfeeding.

Most of these women will stop breastfeeding within a few weeks, and such policies benefit no one except the formula manufacturers, who will start making money the moment breastfeeding stops.

To get all mothers breastfeeding, we must be prepared to:

- Ban all advertising of formula including follow-on milks
- Ban all free samples of formula, even those given for educational or study purposes
- Require truthful and prominent health warnings on all tins and cartons of infant formula
- Put substantial funding into promoting breastfeeding in every community, especially among the socially

disadvantaged, with a view to achieving 100-per-cent exclusive breastfeeding for the first six months of life

■ Fund advertising and education campaigns that target fathers, mothers-in-law, schoolchildren, doctors, midwives and the general public

■ Give women who wish to breastfeed in public the necessary encouragement and approval

■ Make provisions for all women who are in employment to take at least six months paid leave after birth, without fear of losing their jobs.

Such strategies have already proven their worth elsewhere. In 1970, breastfeeding rates in Scandinavia were as low as those in Britain. Then, one by one, the Scandinavian countries banned all advertising of artificial formula milk, offered a year's maternity leave with 80 per cent of pay and, on the mother's return to work, an hour's breastfeeding break every day. Today, 98 per cent of Scandinavian women initiate breastfeeding, and 94 per cent are still breastfeeding at one month, 81 per cent at two months, 69 per cent at four months and 42 per cent at six months. These rates, albeit still not optimal, are nevertheless the highest in the world, and the result of a concerted, multifaceted approach to promoting breastfeeding.

Given all that we know of the benefits of breastfeeding and the dangers of formula milk, it is simply not acceptable that we have allowed breastfeeding rates in the UK and elsewhere in the world to decline so disastrously.

The goal is clear – 100 per cent of mothers should be exclusively breastfeeding for at least the first six months of their babies' lives. ■



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In the village of Dano, a sacred tree dominates the marketplace. Amma, who lives in the village, tells a story that highlights the deep cultural value and sacred nature of such trees. 'This tree is very important to us. A snake lives in the branches. Many people, good and bad, come into the market. The snake will only appear if a person has very bad thoughts.'

PUSHING BACK THE DESERT

Photographs and story by **Kate Eshelby**


Deforestation and, most recently, drought have turned the West African country of Burkina Faso into a desert – devastating for the 80 per cent of the population that live in rural areas. When the women of Dano province noticed the land around them degenerating after large areas of forest had been removed, they decided to take control. By replanting trees, first in the community and then in the forest, they have regenerated the local economy, local customs and a sense of local pride. 'When you grow a tree before dying,' say the women, 'you have not lived for nothing.'



To regenerate a natural environment devastated by years of tree-felling, women in Dano village began planting trees around their homes. Eventually, a formal association – ATB (Toupouoor Baon-Yen, roughly translated as ‘taking positive steps for self reliance’) – was formed, and the women started regenerating the surrounding forests as well. Since 1998, nine villages in the province have joined the project, funded initially by the government and, more recently, by the UK-based charity Tree Aid.

Each of the villages now has an area of woodland that is managed by the local women. No one is allowed to farm these areas or cut down the indigenous trees, which provide shade, food, firewood, medicines and income.





Trees in the tropical world are fast disappearing, cut down for firewood and house-building or logged for sale abroad. Deforestation has devastated ecosystems in Burkina Faso, a land-locked country with fragile soils and a harsh climate. Without protection from trees – both from direct sunlight and root-binding – the soil quickly loses all minerals / life and becomes a desert. By replanting and protecting the forest, the women of ATB are helping to push back the desert as well as providing food, resources and income for their families. The fermented seeds of the dawadawa (locust bean) tree (*Parkia biglobosa*), for instance, provide a nutritious protein fat-rich food, and soap is produced from shea-butternut oil. The leaves of the baobab tree, as well as mangoes and cashews, are harvested and sold in local markets as food.



In countries like Burkina Faso, conservation has become an important part of daily life, even for the very young. ATB works with 10 schools in the local area, educating children on the importance of preserving the land. Each schoolchild is given a seedling and, every day before lessons start, the children collect their watering cans to water and care for their trees. Fatimata, one of the pupils, says, 'A tree is like a live thing. It is not good for a human being to cut a tree. If they do so, the soil will spoil.'

In rural areas, food is still cooked on open fires or in wood-burning stoves, so collecting dry wood is an important daily task. 'We now have to walk far to find dry wood, lying on the forest floors, instead of cutting the trees like we used to,' says Amma.

To make a donation or get more information on Tree Aid, call 0117 909 6363 or go to www.treeaid.org.uk



TESCOPOLY

Every little hurts

Tesco now controls 30% of the grocery market in the UK, and announced profits in 2005 in excess of £2 billion... it's time to fight back.

Tescopoly is the name of a new campaign group out to curb the power of the supermarkets. It represents a coalition of interests at home and abroad – including Grassroots Action on Food and Farming, Banana Link, War on Want, Women Working Worldwide, the National Group on Homeworking, New Economics Foundation, Friends of the Earth and the GMB trade union – all of which share a common concern: how supermarkets distort the marketplace.

HOW DO THEY OPERATE?

The group's website acts as a hub for local community campaigns to exchange information and expertise on how to combat the battalion of expert witnesses, lawyers and marketing gurus who swing into action behind a supermarket planning application. In its first month of operation, the Tescopoly website recorded more than 500,000 hits, and details community charges of price-fixing and planning blight against all the major supermarket chains.

WHAT'S WORRYING TESCOPOLY?

The big four supermarkets – Tesco, Sainsbury's, ASDA and Morrisons – are accused of using their landbanks – development sites – to prevent their rivals, big and small, from opening a store, and of selling thousands of products below cost to put pressure on smaller rival stores. Another concern is their increasing buyer power, which is flexed to drive down prices paid to their suppliers.

These areas are to be subject to a Competition Commission Inquiry, which the Department of Trade and Industry (DTI)

announced in March. The announcement was a remarkable U-turn as, late last year, the DTI had said that there was no need for such an inquiry, a decision that was challenged by the Association of Convenience Stores and Friends of the Earth. It remains to be seen whether the supermarkets act within the spirit of the Inquiry, which is expected to take two years – more than enough time for the supermarkets to realise the potential of their landbanks, and continue to roll out their Metro and Express 'convenience' stores.

WHAT TESCOPOLY WANT

- A legally binding code of practice to ensure that all suppliers throughout the supply chain, at home and overseas, are treated fairly
- An independent watchdog to ensure the grocery marketplace is operating in the interests of consumers, farmers and small retailers
- A block on any new takeovers by Tesco or other major supermarket
- Support for local shops from local authorities and the government
- Measures to hold supermarkets accountable for internationally recognised workers' rights throughout their supply chains.

CONTACT DETAILS

Website: www.tescopoly.org

Email: info@tescopoly.org.uk



BEHIND THE LABEL

GARNIER'S AMBRE SOLAIRE GLOSS BRONZER

If you're one of the millions of people using fake tan to look attractive and healthy, be wary: they are full of chemicals that can cause damage to your skin. BY PAT THOMAS

INGREDIENTS

Aqua, cyclopentasiloxane, cetearyl alcohol, glycerin, dihydroxyacetone, Brassica olerifera, C12-15 alkyl benzoate, tri-C14-15 alkyl citrate, mica, cetearyl glucoside, caramel, dimethicone, Prunus armeniaca, CI77891, CI45380, tocopherol, hydroxyisohexyl 3-cyclohexene carboxaldehyde, phenoxyethanol, ethylparaben, dimethiconol, limonene, linalool, benzyl salicylate, propylparaben, isobutylparaben, alpha-isomethyl ionone, geraniol, methylparaben, BHT, butylparaben, butylphenyl methylpropional, citronellol, citral, coumarin, Glycine soja, parfum



Fear is a great motivator – especially in cosmetics. The more you can make people afraid of something, the more stuff you can sell them. On this basis, the market for fake-tan preparations is booming.

Fearful that the sun causes skin cancer, and that pale skin looks unhealthy, we now spend millions annually on skin-darkening preparations to add a little sun-kissed magic to our lives.

The market for fake-tan products has grown by some 80 per cent since 1997 and shows no sign of stopping. In the UK, we spend around £20 million a year on fake tanning. In the US, which accounts for half of all global self-tanner sales, consumers spend around \$86 million in pursuit of a great-looking, effortless and sunless tan. Sales are at their highest in spring and early summer, as we shake off our winter lethargy and start thinking about our holidays.

In Europe, Garnier's Ambre Solaire is the market leader, accounting for 21 per cent all by itself. Globally, it is second most popular brand after Neutrogena. But while products like these are widely promoted as safer than sun exposure, inevitably, there are problems.

The most effective products contain a chemical called dihydroxyacetone (DHA). This sugar derivative has been the staple active ingredient in self-tanners for many years. It can smell bad and it can sometimes turn you a funny shade of orange but, more important, it has never been fully evaluated for safety.

Some products also use another chemical – erythrose. This agent works

just like DHA, but develops more slowly. So, using the two chemicals together can produce a longer-lasting effect.

But both DHA and erythrose can cause skin irritation.

DHA is not a dye. It imparts temporary colour to the skin through a free radical-generating chemical reaction with amino acids in the superficial layers of the skin. The way it works is not unlike the way exposure to the air can turn the flesh of a cut-up apple brown.

The irony of this won't be lost on anyone who has ever skimmed through a women's magazine. Most anti-ageing creams, for instance, include ingredients that help fight the damaging effects of free radicals, known to promote premature skin-cell death. But using a fake tan means volunteering for this kind of damage to your skin. A 2004 laboratory study in the journal *Mutation Research* underscored this fact with the finding that DHA interferes with the normal cell cycle in human skin, induces DNA damage and accelerates cell death within 24 hours of application.

Fake-tan products also suffer from the same plethora of toxic ingredients as body lotions. Ambre Solaire contains numerous film-formers – not just silicones, but tri-C14-15 alkyl citrate (often used for food packaging). It is also a highly fragranced product containing known central nervous system (CNS)-disrupting chemicals such as coumarin and butylphenyl methylpropional, as well as potentially cancer-causing and ever-present parabens preservatives.


INGREDIENTS	PURPOSE	ADVERSE EFFECTS
Dihydroxyacetone	Skin-colouring agent	Causes a free-radical reaction in the skin with the potential to cause skin-cell death and breaks in DNA chains.
Cyclopentasiloxane, dimethicone, dimethiconol	Film-formers	Film-formers trap other substances (including other ingredients in the product) beneath them. Because they don't allow the skin to breathe, they can exacerbate skin irritation caused by sweat or other substances.
Mica	Colour additive, light reflector	As the formula dries, mica becomes a respiratory hazard; if swallowed, it's toxic to the liver and gastrointestinal tract. The mineral is dangerous to mine – a process that often involves young children working under perilous conditions.
Phenoxyethanol	Preservative	Causes skin irritation, contact dermatitis and contact allergies.
Ethylparaben, propylparaben, isobutylparaben, methylparaben, butylparaben	Preservatives	Cause skin irritation, contact dermatitis and contact allergies. Parabens are oestrogen mimics, and excess oestrogen is a trigger for oestrogen-dependent cancers of the breast, ovary, uterus and testicles, and may even affect fetal development. Scientists analysing breast-cancer tissues have found accumulated parabens in every sample.
Alpha-isomethyl ionone	Synthetic fragrance	Causes skin sensitisation and CNS disruption.
Benzyl salicylate	Synthetic fragrance, fixative	Causes skin sensitisation.
BHT (butylated hydroxytoluene)	Antioxidant	Causes contact allergies and contact dermatitis; a suspected carcinogen; may cause reproductive defects. Once absorbed, BHT can accelerate the breakdown of vital nutrients such as vitamin D (which maintains immunity, and healthy bones and teeth).
Coumarin	Naturally derived fragrance	A skin sensitiser, several types have already been banned in the EU because of their potential to cause serious skin reactions and photosensitisation (sensitivity to light). In animals, it causes lung and liver cancers, and kidney damage. According to the International Agency for Research on Cancer (IARC), coumarin is 'rapidly and extensively absorbed after topical or oral administration to human subjects'. Human data show it to be liver-toxic. It may also cause CNS disruption.
Butylphenyl methylpropional	Synthetic fragrance	A skin irritant, its use is restricted in both leave-on and wash-off products because of its powerful sensitisation potential. In animals, skin applications at high concentrations caused sperm damage and CNS effects such as drowsiness and breathing difficulties.
Geraniol, citronellol, citral, benzyl salicylate	Synthetic fragrances	These must now be listed separately on cosmetics labels as a warning to consumers because they are known to be powerful allergens and sensitisers.
<i>NOTE: Space restrictions prohibit full referencing; however, Behind the Label draws on data from published studies and reports in medical, scientific and trade journals, government-sponsored databases (e.g. the US National Library of Medicine) and relevant Material Safety Data Sheets (MSDS).</i>		

ALTERNATIVES

There are no safe fake tans. All products of this type use the same few chemicals to produce results.

If you want a glow that is truly healthy, then regular, moderate sun exposure is the only way to go. This doesn't mean foolishly baking in the sun for hours, but just enjoying the sun as a natural part of your daily routine. Studies show that we all need around

15 to 20 minutes of sun on our face, arms and legs every day to produce and maintain vital supplies of vitamin D. Staying out of the sun means that many of us don't get enough vitamin D, as witnessed by the reemergence of diseases like rickets, and has contributed to spiralling rates of depression as well as cancers of the breast, prostate and colon.



**Can you hear yourself
above the din? Or has your
voice been drowned out by
the cacophony of society
straining at the seams?**

NICK KETTLES REPORTS



**LISTEN TO THE
RAINDROPS**

It's almost 30 years since R. Murray Schafer, Canada's foremost composer and author of the seminal study in acoustic ecology described in *The Tuning of the World* (New York: Knopf, 1977), first drew our attention to the way an increasing number of natural sounds were disappearing into clouds of homogeneous, unwanted, anonymous noise of modern life with its ubiquitous keynote – traffic. With society becoming increasingly noisy and antisocial, his message has never been more important.

Schafer argued that, in an increasingly visual culture, such a sound-wall of white noise was responsible for the deterioration of our listening skills and, by implication, our ability to listen to one another's needs and, therefore, the breakdown of the community.

He noted that, ever since the harnessing of electricity and the invention of the internal combustion engine, sounds have become more continuous (lo-fi) and, where they overlap, they create noise or non-sound, which masks more natural (hi-fi) discontinuous sounds (see box on page 46). Discontinuous sounds allow for the echoes and reverberations that express an environment's size in relation to the listener.

In a pre-industrial society, the sound of church bells, the clank of the farrier's anvil, the river rushing along and the clatter of horses' hooves would all be recognised as 'soundmarks' (analogous to landmarks) forming a distinctive local soundscape which, just like the local architecture, customs and dress, expressed a community's identity and helped to create feelings of belonging. For example, in small villages, bells would frame daily, seasonal and cultural time – both those ringing from church towers and those hanging from the sheep returning from the hills.

We have become so conditioned to aural blight that many need sound to feel comfortable with themselves

With the visual sense less dominant, people could tell the difference between different locations by their distinctive sounds.

Today, sitting in an office, one could argue that the opposite

is true. The flicker of fluorescent lights, the drone of traffic outside and the hum of a computer all merge to pollute the natural acoustic environment, which might otherwise foster a sense of place.

In the countryside, too, natural soundscapes of birds, animals, insects and weather have been eroded by the loss of natural habitats, but also by the impact of human-induced noise.

According to acoustic ecologist Barry Krause, in the wild, all animal and insect vocalisations

tend to occupy different frequency bands, leaving 'spectral niches' into which the calls of other birds, animals and insects can fit. Krause suggests that the increase of urban sprawl and its associated continuous, lo-fi noise might block out or mask specific frequency niches, resulting in mating calls going unheard.

The idea that all of nature is like a symphony playing in harmony has never been fully corroborated but, according to the Royal Society for the Protection of Birds, the population of finches, warblers and orioles in London is in rapid decline. City noises seems to be interfering with the birds' learning of their own mating calls so that, rather than a melodious song, some youngsters can only manage a generic sort of chirp.

Indeed, the underlying sense of acoustic ecology is that the more we become enveloped in a blanket of relentless background noise, even to the point where we can't hear our own footsteps on the street, the more insular we become. The psychological significance of using sound as a controlling force is that both the environment and the community become the enemy. By example, boom-car stereo-makers Sony's Xplod is advertised as having subwoofers that are 'your biggest allies in making the sound that your neighbours fear'.

Dr Michael Bull, a media lecturer at Sussex University who writes about sound in urban cultures, says sound becomes the mediator by which people control the space in which they are living at any particular time. He says: 'In a world in which we control very little, mobile phone and iPod users are controlling the visual by indicating they are not available to talk to. It allows us to look at others without inviting their communication back.'

He adds that we have become so conditioned to aural blight from such an early age that many people actually need sound to feel comfortable with themselves, and to mediate and construct their thoughts: 'People come in from work and switch on the TV to avoid being in a quiet house. We become conditioned to ambient background noise through different media and so, if you switch it off, people feel uncomfortable.'

Kendall Wrightson, a freelance writer and expert in music technology, is more pointed in his remarks, saying that, fundamentally, we are afraid of quiet. He says: 'We use sound as a form of audio analgesic, or acoustic perfume, to drown out a critical inner voice and the associated feelings it creates. Despite an increased awareness of psychotherapeutic principles, the belief that emotion is somehow controlled through distraction prevails. The quiet reality of how I feel now is devalued and ignored. The cost to society of

this unexpressed emotion is an epidemic of stress-related illness that reflects a struggle to adapt to the speed and sustained arousal of city life.'

In their book *The Human Jungle* (Ebury Press, 1996), Stanton Newman and Susan Lonsdale suggest that, in fact, 'life' has become associated with noise and continuous activity, while quiet (where we might learn to appreciate natural soundscapes) has become associated with boredom, lassitude, lack of choice and, more worryingly, the fear of being out of touch with what the 'new new thing' is.

If this wasn't already a damning indictment of our social malaise, acoustic ecologists say that, unlike New Guinea tribesmen, who can recognise the calls of over a hundred different birds, our inability to appreciate more subtle sounds means that, if we've never had direct experience of a particular bird's song, we won't mind if it becomes extinct. Does this also mean that if we are unable to listen to the needs of others, we won't care if they remain unfulfilled?

This may make for depressing reading: we are always on, comfortably numb by degree, deaf to our own feelings and those of others. At best, the only time for reflection in our lives is the minute's silence we might observe after a natural or man-made disaster. Certainly, the extraordinary level of awareness of blind people – many of whom can tell the gender of someone walking into a room by their footsteps – reveals just how underused our hearing ability is. We think nothing of visiting the optician to have our eyes tested, but who takes care of their hearing in the same way?

And yet, our intolerance to the need of people to let off steam and have fun, arguably caused by the same insularity, has also resulted in bizarre solutions that leave the individual even further dislocated from the whole. In response to strict early-morning noise restrictions enforced by the local council, Private Dance Parties equipped 1,000 Glastonbury Festival-goers with 1000 pairs of wireless headphones so they could go 'crazy-ape' without disturbing the neighbours. DJs added audience noise into the mix, so dancers could enjoy the atmosphere of being part of a festival of thousands.

Quite. The notion that you can be individually part of a whole, but not experience the noise that the whole makes, is a recipe for insanity. One punter said it was like showering in a raincoat.

What we need is balance and, although acoustic ecology's tone is anti-industrial – Murray Schafer has been known to not even have a fridge because of the hum – the supposition that preserving meaningful soundscapes can help improve social cohesion has merit. And the



NOISE AND COGNITIVE DEVELOPMENT: Trying to hear themselves think

Over 2,800 children, aged 9–10 years, from 89 primary schools located near three major airports – Schiphol in the Netherlands, Barajas in Spain and Heathrow in the UK – took part in the RANCH study (Road traffic and Aircraft Noise exposure, Children's Cognition and Health), headed by Professor Stephen Stansfeld of Queen Mary, University of London, and recently published in *The Lancet*. On pooling the data from the three countries, the researchers found that exposure to aircraft noise impaired reading comprehension – even after adjusting for socioeconomic differences between high-noise and low-noise schools.

Reading age in children exposed to high levels of aircraft noise was delayed by up to two months in the UK, and by up to one month in the Netherlands, for each five-decibel change in noise exposure.

A round-up of other airport research worldwide

■ **Los Angeles, 1980.** Sheldon Cohen *et al.* examined the impact of aircraft noise on children's health, and found higher blood pressure in those living near the airport than in those living further away; also, children attending school near the airport had more difficulty solving cognitive problems.

■ **New York, 1982.** K.B. Green *et al.* found that airport noise lowered the reading ability of school-aged children in the city.

■ **Munich, 1995.** Dr Gary Evans *et al.* found a relationship between chronic noise exposure and raised neuroendocrine and cardiovascular measures for children living near the International Airport.

■ **New York, 1997.** Dr Evans *et al.* also reported that New York children living near an international airport tended to be poor listeners and did not read as well as matched children in quiet schools.

■ **Munich, 2002.** Dr Evans *et al.* took advantage of a switch in Munich airports to conduct the first before-and-after study into the effects of airport noise on cognitive development. At the end of 24 months, long-term memory, reading and speech perception had been impaired in the children newly exposed to noise near the new airport.

Furthermore, the reading and memory deficits in this group were even more pronounced 18 months after the opening of the new airport than after six months, suggesting a cumulative effect. The reading and long-term memory of the children living near the old airport site improved, although their speech perception deficits did not recover.

Restoring natural soundscapes would provide the necessary spaces in our acoustic environment that are required to bring some rhythm into our lives



HAS SOCIETY GOT LOUDER?

According to MORI, 10 per cent of the population has complained about noise at some time. Rachel McCormick, an environmental health practitioner with Leeds Borough Council, says that, sadly, neighbours will even use noise to deliberately wind each other up, sometimes with dire consequences. A Middlesborough man was recently convicted of murdering his neighbour with a knife following a DIY noise dispute. This is not an uncommon occurrence.

A growing body of research indicates that noise is increasing and becoming harder to contain. For example, with the increase in inner-city living and the growing market for late-night entertainment, a Hallam University study showed that some areas of Sheffield are 10 times louder than a decade ago. According to the World Health Organization, more than a third of Europeans experience levels of noise that disturb their sleep. According to the Council for the Protection of Rural England (CPRE), our urban sprawl continues to cause the diminution of 'tranquil' areas, by at least 20 per cent since 1960. Noise from transport adds to the hubbub. Cars may be quieter today, but there are more of them and more roads – the annual budget in the UK for new roads is in excess of £20 billion. Moreover, 90 per cent of goods are transported by road in the UK. In the home, Dr Michael Bull says that the new technologies of sound – like home hi-fi and digital surround-sound TVs – give us as much sound as we want. 'But,' he says, 'domestic architecture has not caught up with this acoustic explosion. As our living spaces become smaller and flimsier, we make more noise.' The UK Noise Association (UKNA) estimates that some 2.5 million people live in so-called 'acoustic slums' – homes with poor sound insulation – where even acceptable noise levels can be amplified by the structure of the building. Noise is often referred to as the forgotten pollutant. Campaigners say that if it was oil in the water, or a pernicious smell in the air, it would be dealt with immediately. But, like a Will o' the Wisp, it doesn't linger in the air like carbon dioxide, making it easier to ignore.

suggestion that all we need to do to solve our collective malaise is turn the volume down a little and listen to natural sounds doesn't necessarily mean we need to quiet down the buzz of the city either. It is more a case of reducing the relentless blanketing lo-fi hum – in particular, ambient traffic noise – that prevents us from enjoying the variety of natural sounds on offer.

In his Ambient Noise Strategy programme for the capital, Mayor Ken Livingstone says: 'Our soundscape needs as much attention as our landscape or townscape. Reducing [traffic] noise can allow people to hear more of the sounds they enjoy, whether that is gulls over water, wind in trees, or the bustle of an open market. Since the remodelling of Trafalgar Square, people have remarked that they can hear the fountains from the gallery steps for the first time.'

Last year, the citizens of Stockholm were given a chance to vote for their favourite 'sound sanctuaries' – places of quiet and reflection, or of acoustic interest – in their busy metropolis.

Good examples of greater acoustic responsibility from businesses within the community are the exception, not the rule. At Tarmac's plant in Arundel, the gentle whooshing sound of Brigade's bbs-tek broadband backalarm, has brought peace to its neighbours, who were previously blighted by the intense single frequency of multiple reversing alarms. With zero complaints even from employees, broadband backalarms are now a company-wide policy. Indeed, other companies cannot deliver to the site unless they have one, too.

There is, however, an emerging trend that demands greater quiet in our lives, so-called 'acoustic comfort', suggesting that we instinctively know there are limits to how much stimulation we can endure. In *The Quiet Pint Guide* (1000 pubs without background music), tranquility lovers will find the perfect antidote to 24-hour licensing. Hush Technologies claim they apply the 'science of silence' to their range of ergonomically designed, silent, computing solutions and, on the road, Intelligent Energy's hydrogen-powered motorbike makes almost no noise whatsoever.

But it is in education that real changes can be made. In her latest book, *Listen to the Raindrops*, Arline Bronzaft, one of the world's leading experts on noise, introduces the wonder of natural sounds to very young children. Through a simple poem, accompanied by illustrations of a family of mice, children are introduced to the need to protect their hearing by drawing their awareness to the joy of natural sounds, and the danger of the ones that can hurt their ears such as road drills, horns, sirens and boom cars.

For a generation tuned constantly in to their iPod or mobile, this book offers children the opportunity to learn to appreciate quiet, serenity and peacefulness in their lives. Essential, she says, for consolidating thoughts, relaxation and reflection, deepening children's awareness of how they fit into the lives of others, rather than how others fit into theirs. Education ministers might make note of her earlier book, *Top of The Class*, which explores the importance of quiet in the early home lives of high academic achievers.

Val Weedon, national coordinator of the UK Noise Association (UKNA), says it is currently seeking funding to make a copy of *Listen to the Raindrops* available to every primary school in the country. She says: 'This is part of a shift in their overall strategy to tackle the root cause of noise nuisance. Instead of telling people to pipe down, we are inviting them to appreciate quiet and tranquility instead.'

There is no beat in our excess culture, just a racing pulse. Restoring natural soundscapes would provide the necessary spaces in our acoustic environment that are required to bring some rhythm into our lives.

By implication, a quieter society that better affords our enjoyment of natural soundscapes is also likely to be a slower one. Slowing down, both physiologically and psychologically, means becoming more like a human being than a human doing. Even if we don't become more prone to seek a tranquil space for reflection, a quieter society that augments our listening skills can only lead to a more tolerant one. As Dr Bronzaft says: 'We're not looking to return to a quiet sleepy village; it's about concern for others.'

Ultimately, tolerance will be the mediator as to what is a meaningful sound to one person and invasive to another. Acoustic ecology may yet take its place alongside other more notable environmental causes.

■ The author thanks Kendall Wrightson for additional research.

WEBLINKS

- The Noise Abatement Society: www.noiseabatementociety.com
- The UK Noise Association: www.ukna.org.uk
- The Institute of Acoustic Ecology: www.acousticecology.org
- Earth Ear (Soundscape recordings on CD): www.earthear.com/index.html

SOUNDSCAPES

HI-FI

- Each sound differentiated from another
- Source of each sound identifiable
- Sounds not masked by noise (see Lo-fi below)
- Lots of information for the listener in the environment.

LO-FI

- Undifferentiated, homogeneous, anonymous, continuous
- Isolates (insulates) the listener from the external environment
- Blocks natural hi-fi sounds out
- Ubiquitous 'sound-wall' increases by 1 dB every year
- A psychosocial stressor resulting in the release of stress-related adrenaline
- Sustained exposure may result in an increased risk of cardiovascular disorders.



AN AURAL QUESTIONNAIRE: HOW KEENLY ARE YOU LISTENING?

- Count the number of motor-driven or electrical sounds (including household appliances) you remember hearing today
- Name an urban sound you particularly dislike
- Name a rural sound you particularly dislike
- Name a sound you particularly disliked as a child
- Name three environmental sounds (not recorded music) that you remember hearing today
- Name a sound (not recorded music) you remember enjoying when you were a child
- Name a sound (not recorded music) you enjoy hearing in the countryside
- Name a sound (not recorded music) that you enjoy hearing in the city.

If you found questions 1–4 easier, it's probable that you are filtering out the natural acoustic environment. If so – and particularly if you found question 5 difficult – you may like to take the time to detail your own local soundscape.

Wherever you live or work, go outside and find a place to sit for a moment. Listen to the background noise for a few minutes and then, excluding traffic, see if you can identify the following environmental sounds:

- The quietest
- The loudest
- The closest
- The most distant
- The sounds of your own body
- The mix of natural and human sounds (including the spoken voice).

Source: *The Institute of Acoustic Ecology*



'OKAY, NOW LET'S HAVE SOME FUN. Let's talk about sex. Let's talk about women. Freud said he didn't know what women wanted. I know what women want: a whole lot of people to talk to. What do they want to talk about? They want to talk about everything.

'What do men want? They want a lot of pals, and they wish people wouldn't get so mad at them.

'Why are so many people getting divorced today? It's because most of us don't have extended families anymore. It used to be that when a man and a woman got married, the bride got a lot more people to talk to about everything. The groom got a lot more pals to tell dumb jokes to.

'A few Americans, but very few, still have extended families. The Navahos. The Kennedys.

'But most of us, if we get married nowadays, are just one more person for the other person. The groom gets one more pal, but it's a woman. The woman gets one more person to talk to about everything, but it's a man.

'When a couple has an argument nowadays, they may think it's about money or power or sex or how to raise the kids or whatever. What they're really saying to each other, though without realizing it, is this: "You are not enough people!"

'A husband, a wife and some kids is not a family. It's a terribly

vulnerable survival unit.

'I met a man in Nigeria one time, an Ibo who had six hundred relatives he knew quite well. His wife had just had a baby, the best possible news in any extended family.

'They were going to take it to meet all its relatives, Ibos of all ages and sizes and shapes. It would even meet other babies, cousins not much older than it was. Everybody who was big enough and steady enough was going to get to hold it, cuddle it, gurgle to it, and say how pretty or handsome it was.

'Wouldn't you have loved to be that baby?

'I sure wish I could wave a wand, and give every one of you an extended family, make you an Ibo or a Navaho – or a Kennedy.

'Now, you take George and Laura Bush, who imagine themselves as a brave, clean-cut little couple. They are surrounded by an enormous extended family, what we should all have – I mean judges, senators, newspaper editors, lawyers, bankers. They are not alone. That they are members of an extended family is one reason they are so comfortable. And I would really, over the long run, hope America would find some way to provide all of our citizens with extended families – a large group of people they could call on for help.'

Extracted from A Man Without a Country by Kurt Vonnegut, published by Bloomsbury (£14.99)





PHOTOGRAPH BY DREW GARDNER

PESTICIDE NUN

Jonathan Leake meets **Georgina Downs**, the one-woman whirlwind who's holding the pesticide industry and politicians to account

Downs lives in what looks like an idyllic village just outside of Chichester, West Sussex. The home she shares with her parents is surrounded by trees and fields – the kind of place most townies dream of.

When the family moved in over two decades ago, the adjoining field was used for grazing but, within a year, it was ploughed up for arable crops – and the spraying started.

Over the next few years, Downs' health deteriorated, but she didn't know why. By 1989, she had enrolled herself into a performing-arts college course, but kept having to take time off with a mysterious set of ailments.

Rajasana Otiende, a former fellow student, said: 'She had a big voice and was very confident, but there was a shadow over her. Some days she'd come in and have difficulty eating or drinking anything. When I asked her what was up, she'd open her mouth and there were blisters everywhere, right down her throat. She regularly suffered from headaches and flu-type illnesses as well, and was off sick a lot. We wouldn't see her for weeks on end.'

By her second year at college, Downs began suffering leg pain and had difficulty walking and, in September 1991, not long after she finished college, she was hospitalised with severe muscle wasting, overall muscle weakness and other chronic symptoms.

Downs was in hospital for a month, and underwent a series of tests and scans to try to find out why her health was failing. One by one, the doctors ruled out diseases such as multiple sclerosis



PESTICIDES

(MS), motor neurone disease (MND) and Parkinson's disease, but still couldn't identify the cause.

Downs, now 32, puts it more starkly, 'I was absolutely devastated. I didn't know what was wrong with me; my body just completely failed me. I had only just turned 18 and kept thinking that this is the time I should be out enjoying myself, but instead, I could see everything slipping away, and there was nothing I could do about it.'

Eureka!

On leaving hospital, Downs was determined to find out what had made her so ill. Was it her diet? Was it the cosmetics she was wearing? Was it a virus? For months, she ran through a host of possible causes until, one day, as she was sitting at home looking out of her window, she saw a tractor in the adjoining field spraying something. Suspicions raised, Downs made inquiries, and found that the tractor was spraying a cocktail of poisonous chemicals into the air next to her home. Astonished by this, Downs started down the road that has turned her into the scourge of the agrochemical industry. First, she looked at how pesticides affected humans – and discovered striking similarities between their effects and the symptoms she had been suffering. These

included the blisters, headaches, sore throats, flu-type fevers and bodily pain.

More worryingly, she came across studies showing that many pesticides can cause longer-term damage by attacking the nervous system, promoting cancer and disrupting hormonal systems.

For Downs, the obvious next step was to find out what she had been exposed to but, when she asked the farmer, he would not tell her. What's more, she found she had no right to know: incredibly, farmers are under no legal obligation to tell anyone what chemicals they have used or to provide any prior notification before they spray. Indeed, until January of this year, they were also under no obligation to even keep records of what they had sprayed.

To anyone outside farming, this is an astonishing situation. Across Britain, farmers spray around 31,000 tonnes of pesticides a year. All of these compounds are designed to kill some form of life and to do so in extremely low concentrations.

Every experience with chemicals of this kind shows the need for caution. In industry, this is a lesson that has been learned through bitter experience of handling toxic substances like mercury, asbestos, lead and carbon disulphide.

The historical poisoning of tens of thousands of workers with apparently low levels of such substances means that

modern industry is now more tightly regulated by bodies like the Health and Safety Executive (HSE).

Farmers, by contrast, are under no legal requirement to be trained in the use of sprays, and are free to purchase and use whatever chemicals they choose. Once again, Downs makes the absurdity of this situation painfully clear: 'A farm worker is legally allowed to know what chemicals they are using and their potential health effects, plus they are required to wear protective equipment; yet members of the public, breathing in the very same air, are not.'

Barely pausing to draw breath, she continues, 'The same double standards apply far more widely. In particular, there is no obligation on farmers to observe a buffer zone around buildings or other areas used by people such as paths and parks.'

'This means that farmers are legally allowed to spray right up to the open window of any occupied premises, whether it be a house, a school, a home for the elderly or any office or workplace. There are literally hundreds of thousands of places around Britain where farmland directly adjoins such establishments. One report puts the number of premises at half a million. If the figure were expanded to include all those homes, businesses and schools near enough to farmland simply



to be reached by spray contamination, it would run into the millions.'

So, for people living or working near farmland, perhaps the only guide to their risk of being poisoned is by checking to see what crops are growing around their homes and workplaces. Most, however, only make the link between their condition and exposure to farm sprays long after they have become ill.

What's clear is that the type of crop grown makes a huge difference to the potential exposure risk because each type has its own pesticide regime. Those living near cereal crops, for example, might expect the national average of five or six chemical dousings a season.

If, however, your local neighbourhood farmer is growing potatoes, then that figure goes up to around 13 sprays in a season. And if their speciality is fruit orchards such as apples, then 18 sprays a season is typical.

The risk is multiplied even more by the fact that many farmers will use a range of different chemicals in each application and will change these as crops mature, so dozens of different chemicals can be applied to a single crop – and expose those living around it – over one season.

For Downs, it was powerful evidence that pesticides were the cause of her illnesses, especially after she noticed

that some of the sprays that she and her family were breathing were also stripping the paint from her father's car.

She tried complaining to the HSE and her local environmental health department, but to no avail – because the farmer was breaking no laws.

At this point, and following the lack of any assistance from the authorities, Downs decided it would be better to be away from home whenever the fields were sprayed. No small sacrifice, given that the main spraying season can run for five months or so. 'I ended up staying on friends' sofas and going from one place to the next for weeks at a time,' she explained bitterly. Adding with a laugh, 'I was literally living out of a suitcase. Friends nicknamed me 'the bag lady'.'

Enough's enough

By 2001, however, while staying with a friend, she decided 'enough was enough' and vowed to fight back. 'I remember thinking, if a farmer is legally allowed to be doing this, then there has to be something seriously wrong with the government's policy. From that moment on, I knew what I had to do. I had to change the government's policy on pesticides.'

Downs knew nothing about politics. Her naivety at that time becomes apparent when she admits that she

thought her plan would only take a year. 'I decided that I would put everything else in my life on hold for a year – my singing, work, relationships – and just give it my best shot.' Five years on, and Georgina is known by her friends as the 'pesticide nun', having dedicated herself exclusively to this one issue.

What made her task even harder was that her prime target was not scientists or ministers, but a mathematical model. It's a model that has been used for years by the government's Advisory Committee on Pesticides (ACP) and the official regulator, the Pesticides Safety Directorate (PSD), to work out the risk such chemicals present to the public.

When scientists talk about mathematical models in such contexts, it implies some kind of carefully calculated and calibrated means of working out genuine risk. It also implies complexity of a kind that only another mathematician could challenge.

Downs, however, demolished the model with simple logic. She discovered that the model was no more than a piece of mathematical guesswork. It had never been formally published or subjected to peer review in any scientific journal. What's more, it was based on the assumption that 'bystanders' would only receive occasional, short-term exposure from the spray cloud at the time of the



application only and, furthermore, to only one individual pesticide at any time.

It was a model far removed from the real-life situation, where residents and communities living near fields suffer long-term exposure to complex cocktails of potentially deadly chemicals. As a tool for calculating real exposures and health impacts, it was irrelevant.

The government's chief scientific advisors on pesticides first became aware of Downs in July 2001, when she attended the ACP's annual open meeting. She asked a number of penetrating questions, including whether each member of the committee would be happy to be exposed in the same way as she and her family had been.

She left quite an impression on Professor David Coggon, the ACP's chairman, which was reinforced by regularly questioning him at subsequent conferences and private meetings.

It was in early 2002, after being accosted by Downs for two hours in a hotel bar, that Coggon invited her to give a presentation to the committee's 2002 open meeting on the adequacy of the 'bystander risk assessment.'

Little did he realise what he had unleashed, as it was this presentation that catapulted Downs and her campaign into the political and media spotlight. It included a video to illustrate the dangers of crop-spraying, made in her own back garden, starring a group of mannequins of a pregnant woman, two babies and a young child, all having a mock picnic.

It was simple, but effective. The video, taken as the adjoining crops were sprayed three times in one month, shows the mannequin family's repeated exposure to toxic chemicals as they sit on her lawn.

She said: 'I asked the committee members to raise their hands if they thought that the video showed an acceptable system for protecting public health. Not a single hand went up.'

Downs subsequently presented the committee with a database of the diseases she had found among rural residents and communities exposed to pesticides, which included clusters of cancer, leukaemia, non-Hodgkin's lymphoma, Parkinson's disease, ME (myalgic encephalomyelitis) and asthma, among other conditions.

Downs' data also included a

substantial collection of case histories of people who had linked their ill-health to pesticides – many supported by their doctors. Some of the cases had been formally diagnosed as being pesticide-related ill-health, but there was no overall statistical analysis to support her case. However, the sheer volume of cases and the consistency of symptoms in so many geographically separate areas spoke for themselves.

Later, when the Royal Commission for Environmental Pollution (RCEP) carried out its own investigation, it, too, drew attention to the number and similarity of such cases, and recommended a proper, statistically based survey.

Downs' ACP presentation led to a meeting with Lord Whitty, the then farming minister, and Michael Meacher, the environment minister in December 2002. She showed them her video, and presented the case for a change in the regulations and legislation governing agricultural spraying. In particular, she wanted a ban on crop-spraying near homes, schools, workplaces and other places of human habitation, and direct public access to the information on the chemicals sprayed on crops.

What happened next can be interpreted in two ways. Either the ministers didn't realise the sheer scale of the inertia, vested interests and bad science that Downs was trying to tackle. Or they recognised a troublesome issue and cynically decided to fudge their response for long enough to make Downs give up and go away.

Whatever the thinking, the response of Alun Michael, who by this time had taken over from Lord Whitty as the DEFRA (Department of Environment, Food and Rural Affairs) minister responsible for pesticides, was to order two consultations on the safety of the rules on crop-spraying – but to have them carried out by the Pesticides Safety Directorate (PSD).

In effect, he was asking the PSD to investigate itself – which meant that, if it found any faults in the system, it would involve criticising its own protocols and, by implication, its own senior staff.

This, of course, was never going to happen. The PSD, along with the ACP and DEFRA's Chief Scientific Advisor

Howard Dalton, advised ministers in June 2004 that the existing system was robust and provided adequate protection. The PSD had cleared itself of any failures and declared everything in the pesticide garden to be lovely. But its report to ministers has never been released to the public.

Meanwhile, Downs had been busy with the media and a flurry of newspaper, TV and radio reports had shown that this was an issue 'with legs'. What's more, Alun Michael, the rural affairs minister, despite publicly expressing confidence in the advice he had received, could see there had been a fudge. He decided to call in the RCEP and ask it to examine all the issues raised by Downs.

Breakthrough?

This was the first time in history that the work of a single campaigner had resulted in an inquiry by the Royal Commission. It was also likely to be the best-ever chance of having a full and independent inquiry into the archaic safety rules surrounding pesticide use in Britain.

The RCEP inquiry started on 3 August 2004, and ended with its final report, entitled 'Crop Spraying and the Health of Residents and Bystanders', published on 22 September 2005. By the end, it had heard evidence from a range of individuals and organisations, along with government agencies and advisors, and had travelled across Britain talking to people who reported that they, too, had been poisoned by farm chemicals.

One rural resident, who gave oral evidence to the RCEP, was Sally Brown, who lives surrounded by fields in a small village in Suffolk. Brown has reported acute health problems, including sore eyes and throat, headaches and nausea. In spring 1996, Brown was in her garden with one of her dogs when they were both covered in spray as the tractor passed the boundary.

The following summer, Brown's dog died of cancer and Brown was diagnosed with breast cancer. This could have been a coincidence but, Brown told the RCEP, she had always felt there could be a connection. She also informed the Commission members of a number of cancer clusters in her village and in other places nearby.

Another resident who gave evidence, Richard Bruce, has been recording cases of cancer, leukaemia, Parkinson's and other illnesses on the Isle of Wight for years (see box on page 56). Bruce himself has been exposed to pesticides through both his occupation and from living surrounded by sprayed fields, and now suffers from long-term neurological damage, while his wife Shirley has had breast cancer. Bruce's local GPs also gave evidence to the RCEP in support of Bruce's case, adding further concerns about similar illnesses among other islanders.

Among the many witnesses, Downs played a major role. She made a presentation to the RCEP's public meeting in September 2004 and gave oral evidence to the Commission a few months later.

The RCEP recognised her as an expert as well as a witness, asking her to peer-review their draft report before publication – something no other lay person has ever been asked to do.

On 22 September 2005, Professor Tom Blundell, then chair of the RCEP, delivered the judgment Downs had been waiting for. The mathematical model used by the regulators was indeed deeply flawed, as Downs had previously identified, and the chemicals approved under it were potentially dangerous to at least a million people in rural areas.

He said farmers should become obliged to warn anyone at risk of exposure – residents, workers, walkers and schools – whenever they planned to spray. Plus, they should keep public records of all the chemicals used and be prepared to show them to anyone on demand.

Blundell also wants the government to carry out a full epidemiological survey to find any links between pesticides and chronic ill health.

It was the kind of result far beyond what professional environmental groups such as the Pesticide Action Network (PAN) had been able to achieve, and they have relatively huge budgets compared with what Georgina has been working on. It was also one that industrial farmers and the agrochemical industry have been dreading. Any data showing that pesticides can damage health would leave them vulnerable to the same kinds of compensation claims that have beset



companies promoting tobacco or, in the past, using asbestos.

Such a result means Downs has won herself a reputation – and powerful enemies as well as friends. But whatever people think of her, they can't ignore her, as witnessed by *Farmers Weekly's* recent decision to include her in a list of the top-20 power-players in UK farming.

Meacher, now a backbencher, is full of praise for Downs, albeit glad he is out of her way. He said: 'Georgina Downs is a phenomenal campaigner, the like of which I have never met. She is the kind of

Lower: Aerial view of Georgina Downs' house (the red dot, circled). The yellow line marks a five-metre buffer zone

Upper: A crop-sprayer passing by a house owned by the photographer (Vincent Fallon, Essex)

person ministers dread because they are so persistent. But you cannot ignore her because she knows her subject, and what she is saying makes absolute sense.'

Blundell also praises her.

He said: 'She is a lay person, but she has provided us with a huge amount of information, and it is always accurate and useful.'

However, even though the RCEP report has vindicated Downs, she is very concerned that its recommendation that farmers observe five-metre 'no-spray' buffer zones alongside residential property and other buildings, in an attempt to decrease the likelihood of exposure for residents and bystanders, could ultimately undermine the effectiveness of the report.

And as ever, she's absolutely right.

In principle, the idea of buffer zones is a good one, but why five metres? The RCEP is supposed to be a strictly scientific body, so one would expect it to have good research-based evidence to show that spray concentrations drop rapidly over this distance.

In fact, the opposite is true. There is extensive research into the way chemical sprays disperse in the air, and all show that they can spread over huge distances.

One reputable study carried out in California showed that pesticides could be detected up to three miles away from treated areas. Many such chemicals have been detected as far as 25 to 50 miles away from the point of release.

Another study published last year in the *Journal of the American Medical Association* linked pesticides used on farmland near schools with outbreaks of acute illnesses among pupils. A wealth of similar studies have convinced seven American states to impose no-spray buffer zones of up to 2.5 miles around schools.

So why did the RCEP recommend a buffer zone of just five metres? According to the RCEP, it was guided by evidence from the Silsoe Research Institute, a government-funded centre for agricultural science that has since been closed down. It had done research on how chemical sprays, in the form of droplets, can drift, and on technological issues such as the design of spray nozzles.

It had not, however, carried out any research into longer-term exposure issues such as those that Downs had been raising. Chemical sprays can, for example, settle out of the air, only to be reactivated by subsequent wind or rain. Nor had it looked at volatilisation or the long-distance spread of such chemicals. Above

PESTICIDE POISONING: THE EVIDENCE

Over the last five years, Georgina Downs has received thousands of emails, letters and telephone calls from rural villagers all over the world testifying to local clusters of acute and chronic illnesses and diseases. They are all united by the fact that their villages are surrounded by fields that are regularly sprayed with pesticides. The following are a fraction of the total, but serve to illustrate their stories well.

■ Over the last 10 years, Richard Bruce has been recording reported illnesses in his rural village of Thorley, on the Isle of Wight, along with reports from other nearby villages that are surrounded by sprayed fields. He has amassed over 242 reports of illnesses and diseases, including 106 cases of cancer, of which 40 – including cases of breast, stomach, bowel, brain, lung, skin, throat, mouth, liver, pancreas and testicular cancers – and 18 neurological diseases – including Parkinson's disease, motor neurone disease (MND), multiple sclerosis (MS) and myalgic encephalomyelitis (ME) – were reported in his own village. Other conditions include leukaemia, asthma, diabetes, joint and bone problems, as well as 14 patients with serious heart disorders. Many of these conditions have occurred over the last few years, with a number of them afflicting young children.

■ A small hamlet of 12 houses next to sprayed fields in North East Essex has seen five cases of cancer – one brain, one testicular, one breast and two skin cancers – as well as other conditions, including liver problems, over a period of only five years. Other diseases reported outside of that time frame include Parkinson's, multiple sclerosis, labyrinthitis (inflammation of the inner ear), epilepsy, miscarriages, asthma and acute allergic reactions.

■ A Worcestershire village has reported four cases of leukaemia, nine cases of cancer, including of the breast, prostate, bowel and skin, and six neurological diseases in just 50 properties – again over a five-year period. In addition, a number of dogs that had walked through fields shortly after crop-spraying have died from cancer. There have also been reports where entire ponds of fish have died following spraying.

■ Lamberhurst, Kent, has seen 38 incidents of chronic illnesses within a two-mile radius that include cancers (including of the breast and stomach), brain tumours, arthritis, strange blood disorders, lupus, fibromyalgia (widespread musculoskeletal pain) and ME (myalgic encephalomyelitis or chronic fatigue syndrome), including three cases in one house alone surrounded by sprayed fields).

■ In Coleby in Lincolnshire, 10 schoolchildren suffered from vomiting, headaches, fever and extreme rashes over the course of a few days. Their school is located next to sprayed fields, and the attacks occurred during the height of the spraying season.

■ In Blackwater, on the Isle of Wight, there were five cases of breast cancer in this tiny hamlet surrounded by sprayed fields.

■ Wellingore, in Lincolnshire, had four cases of cancer and two cases of leukaemia, all within a small area surrounded by pesticide-sprayed fields.

If you live in a rural area where pesticide-spraying takes place, please get in touch with Georgina at georgedownsuk@yahoo.co.uk.

all, neither Silsoe nor anyone else in the UK had ever looked at how pesticide sprays affect the health of people living and working around sprayed farmland.

For Downs and others, the decision to accept Silsoe's recommendation turned an otherwise excellent report from the RCEP into a potential disaster. If the government adopted the five-metre recommendation, it would mean no effective reduction in pesticide exposure, and a waste of all of their campaigning efforts. Which makes it all the more surprising that PAN has also been in support of a five- or six-metre buffer zone.

Downs said: 'I remain at a loss to understand how the RCEP could have considered five-metre buffer zones to be acceptable and protective. Most of the evidence submitted, except that from Silsoe, showed it was far too small a distance. It would be a travesty if Silsoe's five-metre recommendation turns out to be the undoing of the RCEP report.'

Since then, the picture has been muddied further with the ACP publishing its response to the RCEP report. The ACP's new report is a masterpiece of obfuscation, with Professor Coggon, its outgoing chair, dismissing most criticisms of its past failures.

More fudge, minister?

On the face of it, this leaves Lord Bach, the DEFRA minister now responsible for pesticides, with a real headache. The government's response to the RCEP report is due in the summer but, with two of his main advisory committees at loggerheads over whether crop-spraying threatens health, whose advice does he take?

The risk is that this apparent clash in advice will lead simply to another consultation or inquiry – and years of more delays. This is, of course, exactly the result the agrochemical industry has successfully achieved with every other report on rural pesticide use to date.

And yet, successive governments have had repeated warnings that agricultural chemicals, just like many of those used in industry, are potentially toxic to hundreds of thousands of people. There is no longer any doubt over the scientific and medical issues. Nor is there any doubt that the companies making such chemicals have long known about these concerns and

done all they could to avoid dealing with them. The real problem now lies with ministers who are too gutless to act on the clear warnings and evidence.

In industry, medical evidence alone has never been enough to bring about new safety legislation. It was the growing pressure of union organisations and the threat of legal cases that prompted various governments to impose new safety rules.

More recently, there has been a similar victory over restricting smoking in public places as a way of preventing secondary smoke-inhalation. Again, the medical evidence on passive smoking had been around for years, but was mostly ignored by successive governments. It was only when those concerned by the evidence became properly organised that their campaign became irresistible.

In rural areas to date, there has been no effective organisation representing the interests of the hundreds of thousands of people being poisoned by pesticides – and so there has been no change in the law.

Downs has single-handedly transformed that situation. She has won every battle yet and, although she has not yet won the war, she has got closer than anyone else so far.

Downs currently has a Judicial Review application lodged in the High Court against the government for failing in its duty to protect the public from pesticides.

She said: 'I am not going to give up on this fight. There are too many people having their lives ruined by these chemicals. The government and the farming industry can throw what they want at me, but whatever it is, I'll be back.'

■ Jonathan Leake is Science Editor for *The Sunday Times*.

'I am not going to give up on this fight. There are too many people having their lives ruined by these chemicals. The government and the farming industry can throw what they want at me, but whatever it is, I'll be back'

BREAKING NEWS:

Georgina Downs has been nominated campaigner of the year in the Observer Ethical Awards 2006. It would help to raise her profile and further her campaign hugely if you took the trouble to vote for her. To do so, visit Georgina's campaign site at www.pesticidescampaign.co.uk and click on the voting link.

RECOMMENDED BOOKS

Confessions of an Economic Hit Man

John Perkins
Ebury Press, 2005, £7.99

Thank heaven for whistleblowers like John Perkins. Describing himself and his colleagues as 'economic hit men', he recounts in fast-paced detail how he travelled the world in the 1970s and 1980s, convincing 'developing economies' to invest in hugely expensive infrastructure projects paid for by loans from the World Bank and IMF. As only someone who's been on the inside can really do, Perkins shows that this money moves sweetly from Western financial institutions straight into the pockets of Western multinational construction companies, with the host economy eventually forced to sell off their primary resources in return for debt cancellation. This book will grip and shock you in equal measure.

Reviewed by Bob Dwight

When The Rivers Run Dry

Fred Pearce
Transworld Publishers, 2006,
£18.99

We are facing a global water crisis, with almost half the world's population expected to face chronic water shortages by 2025. Fred Pearce gives a factual and alarming account of why the world is running out of water and the potential consequences, including the danger of 'water wars' as water becomes increasingly commercialised and scarce. Whether we can avert this crisis isn't clear but, at least, Pearce leaves the reader with a sense of hope – offering solutions for facilitating an essential 'blue revolution', including the childishly obvious 'more crop per drop' approach to growing rice, with the potential to cut rice-growing water use by 20 per cent.

Reviewed by Dick Buchnall

The Weather Makers

Tim Flannery
Penguin Books, 2005, £20.00

In this book, Tim Flannery gives a comprehensive and integrated description of the earth's dynamic climate, both over geological time and in recent human history. He explains how the actions of humans are changing the climate in a catastrophic manner, and forecasts the collapse of civilisation in the absence of immediate reductions in carbon emissions. Flannery argues that it is not too late to avert some of the worst disasters that have been predicted, including the collapse of the Gulf Stream, and proposes that a clearer understanding of climate issues

by 'Joe Public' is the key to effecting change.

Reviewed by Clare Sutton

Plan B 2.0: Rescuing a Planet Under Stress and a Civilization in Trouble

Lester R. Brown
W.W. Norton & Company, 2006,
£17.20

Plan B 2.0 expands upon and updates 2003's *Plan B*, but with greater emphasis on the need to build a new economy. Lester R. Brown gives concise, but very informative, summaries of what he regards as the key issues facing civilisation as a consequence of the stress we exert on our environment. He goes on to present 'Plan B 2.0', a proposed response which emphasises the need to use existing technologies to build the new 'eco-economy', which he thinks will be able to progress in a sustainable manner. At times dense, this is a valuable contribution to the ongoing debate: 'If the current system's broken, what do we need to do to fix it'.

Reviewed by Richard Buxton

Deep Jungle

Fred Pearce
Eden Project Books, 2005, £18.99

This volume takes the reader on a fascinating exploration of the rainforest. The vast diversity of life in the rainforest is conveyed by the infusion of beautiful illustrations and photographs found throughout the book, creating a sense of wonder that is placed in alarming perspective by the images of the destruction that deforestation has already caused. Pearce's conclusion is that, if we are to make peace with nature, we must stop



seeing the rainforest as 'other'. We need instead to realise that human life is intricately linked with that of the jungle. *Deep Jungle* drives home the irrationality of the exploitation of its resources in the name of economic 'progress'. Worth buying for the photos alone, this is a book that should make any logger think again.

Reviewed by Clare Sutton

Let My People Go Surfing: The Education of a Reluctant Businessman

Yvon Chouinard

Penguin Press, 2005, £15.48

Yvon Chouinard, the founder and owner of Patagonia®, a company renowned for quality, innovation and environmental responsibility, has written an intimate and inspiring story of his life. If you are constantly frustrated by the capitalist attitudes of many business people and their inability or unwillingness to see beyond the profit margin, you will love this book. Chouinard, as in other areas of his life, has embraced the challenge, and the success of his pioneering 'value-led' approach to business (and to life itself) and his willingness to listen to others sets an example for business and non-business people alike.

Reviewed by Clare Sutton

The Secret Life of Trees: How They Live and Why They Matter

Colin Tudge

Penguin Books, 2005, £20.00

Did you know that there are trees that warn each other when giraffes and elephants are nearby, or that there is a banyan tree as big as a football



The Harvill Press

ecologist BOOK CLUB

The Man Who Planted Trees

By Jean Giono

“After the midday meal he started sorting more acorns to sow. I must have been very pressing with my questions, because he answered them. He'd been planting trees in this wilderness for three years. He'd planted a hundred thousand of them. Out of those, twenty thousand had come up. Of the twenty thousand he expected to lose half, because of the rodents or the inexplicable ways of Providence. That still meant 10,000 oaks would grow where before there had been nothing. But it struck him that this part of the country was dying for lack of trees, and having nothing much else to do he decided to put things right.”

It's a big question, being asked to write about the most extraordinary person you've ever met. That was the 'amazing stories of real-life people' kind of brief presented to Jean Giono by *The Reader's Digest* in the 50s. From such prosaic beginnings grew an allegorical tale, and legend, which has inspired so many readers since.

The most extraordinary man Giono ever met was shepherd Elzeard Bouffier, who lived a hermit's existence in the barren highlands, where the Alps run into Provence. There the wind is cruel, the earth dry, the houses deserted. The few inhabitants are as bitter as the climate. It is, Giono tells us, oppressive in its desolation. But Bouffier is untouched by it all. His life is spent nurturing and planting seeds from which trees will grow – from which, by the time of his death in 1947, a mighty forest will grow. With the forest, the earth is rejuvenated, streams

run again and people return to the abandoned towns. Bouffier is the creator of all this from his simple habit of planting the seeds he found as he shepherded his small flock of sheep.

Giono's book has been printed under many titles; *The Man Who Loved Trees* is just the latest. He writes directly in a style reminiscent of Jorge Luis Borges, and some will find his tale reminiscent of Paul Coelho. Giono hoped his book would inspire a worldwide reforestation movement. His story will make you think again about how from little acorns mighty things do indeed grow. It's only a 30-minute read, but the poetry in the prose will stay with you for life. This volume is beautifully illustrated with woodcuts by Harry Brockway.

As for the legend, that is explained in an Afterword by Giono's daughter Aline. You'll have to read it to find out what it is.

IT'S EASY TO JOIN THE ECOLOGIST BOOK CLUB...

STEP 1: Buy the Book of the Month at our special Book Club price of £4.20 (incl p&p) (RRP £6.55 incl p&p). Tel: 01795 414 963 (Mon–Fri 9:30am–5:30pm), quoting ref: BOOK306. Offer good while stocks last. **STEP 2:** Take time to read and think about the Book of the Month. (We allow about 40 days for each month's Book to be up on the main website's discussion forums before archiving it.) **STEP 3:** Visit www.theecologist.org/bookclub and tell us how the book made you feel. Were you moved by it? What more would you have liked to have known? Have you started planting trees randomly on your way to work? **STEP 4:** Keep your eyes peeled for your April Book Club comment in the June 2006 issue of the magazine – you might have won the 'Comment of the Month' and a £20 book token.

■ March's Book of the Month... *Stuart: A Life Backwards* by Alexander Masters is currently online and under discussion. Visit www.theecologist.org/bookclub for the review and ordering details.

HIGHLIGHTS FROM THIS MONTH'S ONLINE DEBATE

field in Calcutta? In addition to such fascinating facts, Tudge takes the reader through the whats, whys and hows of trees, demonstrating that they are integral to the world ecosystem and arguing that they are 'the centre of all terrestrial ecology'. The chapter entitled 'Trees and Us' provides a particularly interesting insight into the ecological position of trees in relation to humans. As with previous books by Tudge, this is rich in detail, immaculately researched and thought-provoking.

Reviewed by Harry Wilmot

The Meadowlands: Wilderness Adventures on the Edge of New York City

Robert Sullivan

Granta Books, 2006, £8.99

Just five miles west of New York City lies the Meadowlands, a wild area of swampland and garbage hills. Robert Sullivan takes the reader on a captivating exploration of this habitat, which appears, on the surface, somewhat unlikely. Over the years, his wanderings have led him to discover the richness of the region – its rare birds, dead bodies and the remains of the original Penn Station. But what really engages the reader is his portrayal of the perpetual struggle between people, progress and our environment.

Reviewed by Clare Sutton

Every month we host a debate on the *Ecologist* website. If you want to take part, please register online at www.theecologist.org, and get stuck in.



CAN WE REALLY CHANGE PEOPLE'S BEHAVIOUR BY CHANGING THE FOOD THEY EAT?

Sherill Chapman 02/03/2006 15:11:58

I think the old saying 'you are what you eat' has stood the test of time for a good reason: It's absolutely true. It just makes sense that what you eat will not only affect your physical health, but your mental wellbeing as well. Despite being tasty, food is essentially fuel for our bodies. Many people put greater care into the quality of fuel they use in their cars or lawnmowers than the fuel they put into their own bodies and the bodies of their children. The results of this widespread disregard for good nutrition are evident in the high rates of cancer, heart disease, diabetes, depression, asthma and a host of other ailments that are plaguing the developed world. Prevention should be practised and promoted far more than it currently is, and that, of course, includes good food and nutrition.

Susan Win 02/03/2006 19:24:38

Barbara Reed served as an Ohio probation officer for 20 years. In 1971, she developed a programme on the relationship of diet and behaviour. A five-year study showed that over 80 per cent of people on her programme did not get back into trouble with the courts. Fourteen scientific studies have since proven that behaviour is indeed affected by diet. Also, doctors did X-ray-testing of lead levels in criminals' bones and found them to be significantly higher than in non-criminals'. Since the US has phased out leaded gasoline, criminal activity has dropped year after year . . .

Ken Hargeshheimer 03/03/2006 01:46:09

Everyone should view the DVD *The Impact of Food on Learning and Behaviour* on an alternative high school in Michigan, USA – all organic food and snacks. After a short time, the 'school policeman' was no longer needed. And another one *You Do What You Eat . . .* (both of which will be reviewed in next month's *Ecologist*).

Tony Green - 05/03/2006 23:33:27

We have been using food for years to correct health problems, sugar is a massive problem, not only causing ADD/ADHD but asthma as well. I have proven this time and again but unfortunately there is money to be made from people being sick. It doesn't take a genius to work out that the only people that Big Pharma doesn't make money out of are either healthy or dead.

Jordan Tan - 11/03/2006 02:06:55

There is a relentless "cooperation" between the US\$1.4 trillion food industry and US\$1 trillion sickness industry. The food industry creates patients so the sickness industry can treat the symptoms, not seek a cure.

Sarah Emmerson - 02/03/2006 13:31:34

It seems so obvious, just look at what Jamie Oliver did in schools. Just by feeding kids vegetables instead of chips he dramatically improved their concentration and performance in a few weeks. More awareness is needed of the effects food can have on our brains, not just our physical appearance. Healthy food would be such a logical and simple way to help young offenders to improve their lives.

HAVE YOUR SAY . . . join the *Ecologist* online debate on: www.theecologist.org/debate.



green pages

DO YOU SUFFER FROM ELECTRICAL INCONTINENCE?

Dave Hampton takes Matilda Lee on a hunt for lost watts

FARMERS' MARKET CHIC

...ethical shopping bags

READ THE LABEL

Moisturisers. Softening you up for the kill?

FOOD HERO OF THE MONTH

Meet Guy Watson, founder of Riverford organic box scheme

MAKE EVERY £1 YOU SPEND COUNT... in over **200** local, independent, ethical, and inspirational online retailers.

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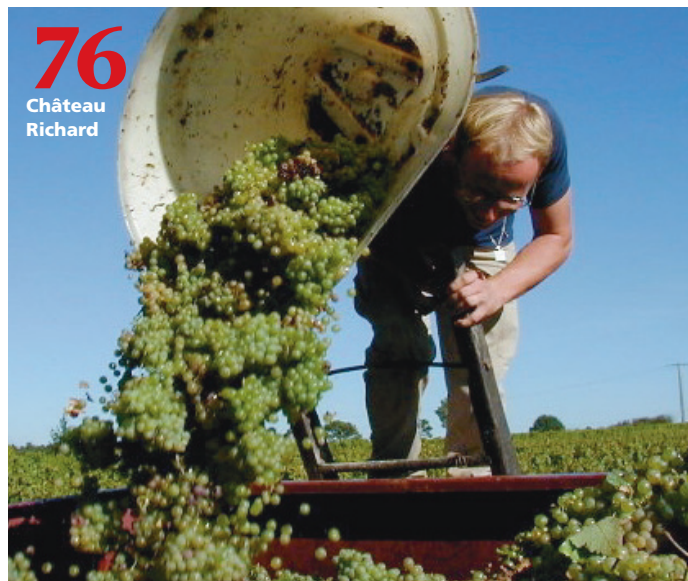


Towels

Liv 

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green pages green pages



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...making every £1 count

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FOOD HERO: *Guy Watson*

Just seven words started Devon farmer Guy Watson's organic vegetable-box business.

'No, sonny: When we whistle, you jump.' **Mike Stones** reports

The remark was the considered response of an organic veg buyer from Safeway to Watson's request to delay a meeting by one day. The first response was to slam the phone down.

Maddened by such arrogance, Watson tore down the packing house he was building at Riverford Farm, Devon, to supply Safeway, and looked for another way to sell organic veg, an independent way that would never depend on supermarkets and the whims of their arrogant buyers.

He found it in the back of his old yellow convertible, a Citroen Diane, the car he used to deliver his organic veg to shops around Totnes. It worked for shops, so why not deliver directly to doorsteps?

Thirteen years later, the fleet delivering Riverford Organic veg boxes has swelled to 100 vans and six articulated lorries, transporting 35,000 boxes a week to 75,000 customers. It delivers up to 100 vegetable varieties from the South of England to the Midlands through 61 franchised carriers.

Further expansion is planned through agreements with organisations in Cambridge and Yorkshire. It's an achievement recognised when Watson



Guy Watson
picking lamb's
lettuce

won the BBC 2004 Food Awards Farmer of the Year.

'People ask: Why do you have to be so big,' says 45-year-old Watson. 'But I'm proud of what we've achieved.' Tall, spare and clad in a blue Riverford Organics sweat shirt, blue cords and walking boots, Watson is not a man who finds it easy to be still.

Bemoaning pain in his back – the result of too much bending down in veg fields – he spends part of our conversation knees bent, back against a wall. He sits down, gets up and saunters around his Spartan office: desk, computer, phone, big coffee table and dilapidated red sofa. But he stays focused on our conversation – mostly: 'What was your question?'

He is a man who gets bored easily but, when engaged, he speaks with passion and conviction. Both qualities are evident in our conversation about organic food, and his desire to share the health, taste and environmental benefits he believes it brings with as many people as possible.

Watson is a one-man campaign, backed by a 250-strong team, dedicated to providing a choice, an alternative to supermarket vegetables that are selected more for ease of handling and shelf life than for flavour. 'Supermarkets supply androgynous, tasteless food from who knows where.'

Nevertheless, although he believes supermarkets are here to stay, and even sells some surplus to them, he remains optimistic that more consumers want something better.

'Supermarkets are very good at logistics, but find it hard to be fluid enough to serve customers well. Their size and dependence on focus groups makes them big, unwieldy dinosaurs.'

Riverford customers won't find and don't expect perfectly polished carrots. Neither will they have access to, or apparently want, year-round sweet corn, tomatoes and strawberries.

'Our customers are looking for vegetables with better flavour than they can buy in supermarkets. They want to know where and how it's produced. They want to know their buying decisions are making the world a better place,' says Watson. It's a view formed not from focus group research, but from personal experience on the doorstep, delivering vegetable boxes.

There's a pause while he gets up and makes another leisurely circuit of his office. Back pain temporarily quelled, Watson sits down to explain the ethical soil in which his organic vegetable-box scheme and farming techniques are rooted.

'Never liked the idea of pesticides; so when I started in 1987, I wanted to work with nature by farming organically. Also, I felt organic farming had strong marketing potential.'

It took two years without pesticides to win organic accreditation from the Soil Association. Annual inspections verify the farm's organic status. Riverford's variable clayey loam soils grow about 400 hectares of organic vegetables, some from 19 polytunnels.

Watson was a founder member of South Devon Organic Producers, which includes 15 other farms dedicated to sharing labour, equipment and expertise – although expansion has meant that Watson's farm has become more autonomous. All vegetables are delivered to Riverford Farm for packing and are marketed jointly.

'It's damned difficult growing a big range of organic vegetables selected for taste rather than ease of handling or durability and getting them to doorsteps as soon as possible.'

The task proved too tough for some. 'Five years ago, there were a lot of diabolical box schemes about, but most have now gone,' he says.

So what makes a great organic vegetable-box scheme? Watson does not

hesitate: 'Vegetables packed with flavour, quick delivery with the minimum of food miles, information about the produce and the knowledge that buying them is making a positive contribution to the environment.'

Flavour is critical and that means selecting the right variety. Not for Riverford customers the long-life, bland, perfectly presented offerings typical of many supermarkets.

He picks carrots as an example. 'The number one variety in Europe is Nairobi because it's robust and resistant to breakage. But, at best, it's tasteless and, at worst, nasty.' His preference is for the much tastier, more fragile variety Junior, which has to be hand-harvested.

Flavour depends upon freshness – the quicker the journey time from gate to plate, the better. Most of Riverford's leafy vegetables reach doorsteps within 48 hours of harvest, and some even within 24 hours. In contrast, from his experience of supplying supermarkets, field to shelf time is about a week, and produce can languish on the shelf for several days more. Also, organic vegetables can sometimes be older because the supply chain is often longer and the sales volumes smaller, he says. The older the veg, the less tasty and nutritious, as minerals and vitamins decay.

His choice of varieties is also influenced by resistance to pests and

He speaks with passion and conviction about organic food, and his desire to share the health, taste and environmental benefits he believes it brings





Moss picking lamb's lettuce with Henry, the dog, looking on

diseases, and ease of handling in the kitchen. 'We should not ask too much at the kitchen sink – there are varieties of Jerusalem artichoke that are ridiculously difficult to peel.' With four children aged between 7 and 13, he knows the value of convenience.

By nature a pragmatist, not a purist, Watson says: 'I'm no Luddite. Technology plays a key role in the business. Mechanical harvesters, chilled storage and distribution are vital.' Early potatoes are imported from Brittany when tasty domestic varieties are unavailable. And most orders for veg boxes are received online.

Waste is a word Watson cannot abide. Field waste is minimised by refusing to discard vegetables that are not cosmetically perfect.

Packaging waste is avoided by using boxes made from 85-per-cent recycled materials that are used up to 10 times before recycling.

Transport waste is avoided by restricting food miles. Riverford vegetables accumulate about 140 food miles from farm to fork, compared with between 500–600 miles for supermarket vegetables, he says. After striking new partnerships in Cambridgeshire and Yorkshire, Watson hopes to achieve an average of 50 food miles for his produce.

Most new customers are found by word of mouth, and advertising is seldom used. A relationships of trust built up over the years with co-op members means that administration costs are low. Also, the costs of complying with supermarket protocols are avoided completely.

It's a virtuous circle, which means that Watson can keep the cost of boxes low enough to compete with supermarkets despite their alleged economies of scale. In a booklet sent by Riverford Organic Vegetables to its customers, Watson writes: 'To buy the contents of our small, medium and large boxes from a supermarket would cost on average twice as much.'

Besides the booklet, his website (www.riverford.co.uk) and newsletters encourage customers to take an interest in how vegetables are produced.

Watson's pride in what he and his team have achieved sticks out like a prize leek. 'We are using our commercial success and our wonderful system of distribution to change the way people buy and enjoy vegetables. We are providing customers and farmers with a viable alternative to supermarkets.'

But with success comes size. And size, for Watson, really does matter. A recurrent theme in our conversation is how his organisation can retain the

'It's the hideous institution of supermarkets that makes people act the way they do'

benefits and character of a small company as it continues to grow. He knows the depressing trajectory of small businesses that don't plan their growth. 'As businesses grow, the focus tends to move from the person with the passion to the accountant and then to the shareholders. With scale come cumbersome, impersonal companies and unmotivated staff.'

It's not a future he plans for Riverford. 'I've no intention of selling out to a big company or leaving the business to my children – wealth screws up children. It will be left to the people running the business in some sort of trust.'

Despite the organisation's projected turnover of £22m this year, Watson is adamant that profit is not his main goal. 'Profits are a byproduct, a necessary lubricant to make it work. It's really about providing a genuine service to staff, customers and suppliers.'

So, after the success of Riverford, what would Watson's advice be to the vegetable buyer with the terrible telephone technique? 'Get another job,' is Watson's characteristically forthright reply. 'But I still believe people are intrinsically good. It's the hideous institution of supermarkets that makes them act the way they do.'

■ Riverford Organics website:
www.riverford.co.uk



STILL NOT CONVINCED ABOUT BOX SCHEMES?

Click on www.theecologist.org/boxscheme for 15 reasons to get a box scheme and for a list of suppliers throughout the UK.



SEEDS OF HOPE

With the coming of spring comes the sowing of seeds. **Paul Kingsnorth** passes on his tried-and-tested tips

Spring is on the way, and I can smell it. I can always smell it down here. To get to my allotment, I have to cycle down main roads and through housing estates, where the air smells of car fumes or wet paving slabs, or nothing in particular. But the first thing that hits you when you get to the plot is that smell. It's warm soil, young leaves on the trees, shy flowers and the distant river. Down here, it smells like life.

And spring is my second-favourite time of the year on the allotment – my favourite being late summer/early autumn, when I get to pick and eat the things I've been lovingly tending for six months. Second only to that, though, is April – planting time, the birth of the year.

The planting of seeds, to me, is one of the most fulfilling things I do all year. And the best thing about it is that it's easy. Sure, you'll get all sorts of fancy tips from gardening experts about liming the soil, double-digging and perfecting your 'tilth' but, to get started, all you actually need is some well-dug, healthy soil that isn't full of weeds. If it's a plot that's been recently used, you'll want to fertilise it – horse manure, household compost or pelleted chicken manure (which you can buy from hardware shops and garden centres) are all good for feeding your soil, so that it gets back the nutrients that have been taken out by previous plantings. If you have a new plot that hasn't been used for years, you might get away without fertiliser the first year – but if in doubt, dig some in.

But that's it: the soil is ready to receive you. For more detailed instructions on what to sow and where, check out some of the burgeoning number of good books on offer, which will tell you all you need to know (see box). But don't let the technical stuff drag you down: the most important

thing is that you enjoy the process of beginning to coax your food into life. Get down on your knees and grub about in the warm soil. Sit still and watch the bird life. Look out for wild flowers and, if there aren't any, plant some. Revel in the birth of summer.

As you do this, I'll share with you just a few basic bits of advice for this crucial month, which I've picked up through trial and error over the last few years.

1. PLAN BEFORE YOU PLANT As soon as spring shows its face, I go down to my plot with a notebook and pen, and stalk about excitedly, measuring the beds, looking the place over and deciding what to plant. Then I go home, get out my seed packets and a draw up a plan of what to sow and where. This allows me to ensure that I have enough space for it all and that I don't forget to plant anything crucial.

2. BE AWARE OF THE WEATHER And in particular, the frost. There's nothing more frustrating than seeing a frost reduce your young, fragile plants to black, shrivelled husks. Last year, a late frost in early June (thanks, climate change), destroyed all my courgette seedlings, and I had to start



again. Try not to plant delicate seeds until you're pretty sure the last frost has gone. If in doubt, buy yourself some fleeces from any garden centre, and peg them out over your precious seeds. Then, if a late frost does surprise them, they'll survive.

3. KEEP IT SIMPLE I've failed to do this in the past, and it's always been a mistake. It's tempting to try planting something complex, like asparagus, but unless you know what you're doing, you end up with a mess. Last year, I tried cultivating mushrooms, and ended up with a few bits of soggy wood. This year, I'm sticking to the old reliables.

Also, as reader Kirsty Rowlinson contacted me to point out, most of us are restricted in the time we can put into our plot: work, children, shopping and the daily grind limit most of us to weekends and the odd evening. There are ways around this, of course (and I'd love to hear yours). I have a friend, for example, who has a 'no-dig' policy on his plot. His allotment society has invested in vast amounts of heavy-duty woven plastic sheeting, of the type you can buy in any garden centre. He covers his plot in this, cuts holes in it and plants seeds through them. The sheeting keeps the weeds out and there's little effort involved.

4. SAVOUR THE SOIL Finally, and most important of all, make sure you take some time to enjoy what you're doing, and where you are. Sprinkling rows of seeds into lovingly prepared ground, watering them and watching them creep shyly up towards the sun is one of the simplest and most enduring pleasures in life. Savour it. When I've finished sowing my last line of carrots, I plan to sit back in the grass, crack open a can of beer and survey my kingdom as I watch the sun setting over the poplar trees that line the river. I can't recommend it enough.

■ Please keep sending me your tips and questions: paul@paulkingsnorth.net

BOOKS AND PLOTS

- *Fruit and Vegetable Gardening* (Dorling -Kindersley, Royal Horticultural Society)
- *Organic Bible* by Bob Flowerdew
- *The Vegetable & Herb Expert* by Dr D.G. Hessayon (Transworld)

ECO-CLOTHING NEWS

A CLEAN SLATE FOR SCHOOL UNIFORMS

The UK's first Fair Trade and organic uniforms

Today's £1-billion schoolwear market thrives on a cheap and expendable garment worker force and helps drive the conventional cotton market – one of the world's most harmful and environmentally-damaging agricultural practices.

At long last there is an ethical alternative. Clean Slate are offering a competitively-priced range of Fair Trade and certified organic school uniforms. 'We want to do for school uniforms what Jamie Oliver did for school dinners,' said Mark Rogers, Clean Slate's co-founder. Rogers is creating a coalition including NGOs and activist parents to help campaign to inform and

change schools' buying practices.

Clean Slate's Junior Range of uniform basics for children ages 4 to 12 include sweatshirts, collared shirts, polo shirts, girls' blouses, skirts, trousers and pinafores. Their PE kit includes shorts, t-shirt and gym bag. They sell directly to schools and individuals.

■ **Go to www.cleanslateclothing.co.uk or email enquiries@cleanslateclothing.co.uk for more info.**



IT TAKES A VILLAGE

Community building makes good business at Bishopston Trading



Carolyn Whitwell at the inauguration of Bishopston's new building in K.V. Kuppam, India

Hats off to Bishopston Trading Company who are celebrating 21 years of growing a successful independent and ethical clothing company. Long before fair trade became the buzzword it is today,

Carolyn Whitwell started selling fairly traded clothes made by four elderly tailors in a village in Southern India from a small shop in Bristol. She has guided Bishopston to become a worker's co-operative employing over 470 tailors, weavers and craft workers selling 45,000 pieces of clothing a year. Always respecting the interests of the producers, Carolyn has never sought external investment or high-profile retail partnerships, as the impact of very fast growth on the K.V. Kuppam village would be too risky. To learn more about her extraordinary story and see Bishopston's range of adult and children's clothing go to www.bishopstontrading.co.uk

PICK OF THE MONTH


Bags for men

Versus Form's Messenger bags are made from recycled advertising banners.

Small £24.50, large £35, extra large £45

TO BUY: email info@versusform.com



- 
1. Silver clutch bag
2. Kimono clutch bag

ETHICAL BAGS

Stylish bags for nights out and trips to the market



3. Ghana shopper basket
4. Flock print bag



5. Concrete shopper bag
6. Red bottle bag



8. String shopping bag
9. Burnt orange/maroon carry bag



7. Mango fruit juice bag

STOCKISTS HOW TO FIND OUR FEATURED BAGS

1. Silver clutch bag £35 by Matt and Nat

Vegan bags made with contrasting stitch work and a hidden key ring.

Range: black, blush, cognac, green, mud and bronze

To buy: call 0207 377 1002 for info on the 60 stockists throughout the UK

2. Kimono clutch bag £120 by Martha Evatt

One-off bags made of vintage kimonos sourced from Yamaguchi, Japan.

Range: various traditional kimono patterns

Coming soon: Martha Evatt's line of Fair Trade cotton/silk mix clutch and shopper bags made in India will be available in May

To buy: mail order from www.thenaturalstore.co.uk, tel: 01273 746781

3. Ghana shopper basket £20 by Design Africa

Handmade in Ghana from Savannah Grass. Design Africa source their traditional African shopping baskets from various small, rural-based groups and businesses throughout Africa.

Range: navy blue, sea green, raspberry and antique brown

Sizes: small £7.50, large £20

To buy: mail order from www.designafrica.net, tel: 01865 302 937



4. Flock print bag £10 by People Tree

Black flock screenprint on natural jute, with snap clasp and cane handles. Handmade in Bangladesh. People Tree

is a pioneering eco fashion label whose main focus is to help people out of poverty through Fair Trade.

To buy: mail order from www.ptree.co.uk, tel: 0845 450 4595



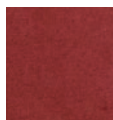
5. Concrete shopper bag £14.99 by Ganesha

Handmade in Dhaka, Bangladesh from recycled jute bags that carried concrete.

Bags made by workers at Tarango (Training, Assistance and Rural Advancement NGO), which aims to help women in Bangladesh, and particularly rural widows, to secure an income through the production of handicrafts.

Range: saffron, yellow and netlon

To buy: mail order from www.ganesha.co.uk, tel: 0207 928 3444



6. Red bottle bag £3.99 by Tree 2 My Door

Made in India from jute. Tree 2 My Door is an ethical gift company offering a selection of tree and wild flower gifts.

Sizes: small £1.99, medium £3.99, large £4.50

To buy: mail order from www.tree2mydoor.com, tel: 0845 241 8733



7. Mango fruit juice bag £18 by Octopus

Made from stitched-together recycled fruit juice cartons in Cebu, Philippines.

Range: apple, orange, pineapple, melon and lemon

Sizes: hand bag £12, shoulder bag £14, tote bag £16,

To buy: mail order from Octopus, tel: 0207 287 3916



8. String shopping bag £3.90 by Green Fibres

Made from organic, unbleached cotton. Green Fibres produce a wide range

of clothing and accessories – the majority of which are made from organic raw materials.

To buy: mail order from www.greenfibres.com



9. Burnt orange/maroon carry bag £12.99 by Freeset

Made from jute, includes an internal pocket and a shoulder

strap. Freeset provide free sewing lessons and employment to prostitutes from one of Calcutta's oldest and largest sex districts. Around 100 women so far have received training.

Range: burnt orange/maroon, light blue/navy, olive/forest green, or grey/black and red.

To buy: go to www.freesetbags.com for a list of 50 stockists throughout the UK

Clothing featured...

p.69 Models are wearing second-hand clothing from charity shops and markets.

p.70 Models are both wearing dresses by Amira

To buy: 261 Portobello Road, London, W11 1LR, tel: 020 7792 0166 or Launderette, 49 Grand Parade, Brighton, BN2 9QA, tel: 01273 692068. Boots by Terra Plana available at www.terra-plana.co.uk. Vintage heels from Portobello Market.

PRODUCTION: ELIZABETH LASKAR. **PRODUCTION ASSISTANT:** PAMELA DANIELS. **STYLISTS:** PAMELA DANIELS & ELIZABETH LASKAR.

PHOTOGRAPHER: MARCELLO CAPOTOSTI. **HAIR:** LAUREL STAPLE USING AVEDA. **MAKEUP:** MARIE ANNE COULTER USING AVEDA.

MODELS: ROSANNA ROONEY AND DI KUANG.

LOCATION: ST MARY'S VAULTS AND GARDEN - ORGANIC AND FAIR TRADE CAFE, OXFORD, www.vaultsandgarden.co.uk, tel: 01865 279112 AND THE ANUBA BAR. FOOD PROPS PROVIDED BY UHURU, FAIR TRADE AND ORGANIC FOODS, OXFORD.



READ THE LABEL MOISTURISERS

If you really want younger-looking and healthier skin, you may do better to think more carefully about what you put inside your body than what you put on it. By **Pat Thomas**

Moisturisers have one basic function: to maintain the water balance in the most superficial layers of the skin. This layer of the skin, known as the 'stratum corneum', is made up of cells that are being constantly shed and replaced as new cells emerge from the deeper layers of the skin.

The stratum corneum is approximately 30-per-cent water. Two-thirds of this is bound to biological tissues and usually do not change unless there is a serious skin condition such as eczema or psoriasis.

But the remaining water content rises and falls according to what's going on in the environment – for instance, dry weather conditions, over-washing, or exposure to central heating, air-conditioning and certain chemicals.

Moisturising ingredients work in two ways to help slow down this water loss. Humectants such as propylene glycol and urea act like water magnets, drawing moisture from the atmosphere and keeping it near the skin. Emollients are generally fats, oils and waxes that form a barrier on the surface of the skin.

For years, moisturising creams and lotions relied on emollients like lanolin and mineral oil to create this protective barrier.

Today, synthetic derivatives of vegetable oils such as isopropyl palmitate and hexyl laureate are more commonly used, as are a range of synthetic 'film-formers'

such as silicone and PTFE (polytetrafluoroethylene), better known as Teflon.

Do they work?

Moisturisers are basically mixtures of oil and water. To keep these two opposing substances bound together, and to ensure that the product has a long shelf life, a cream or lotion will need to include a raft of emulsifiers, stabilisers and preservatives. To make it nice to use, it will also contain perfumes and colours. If a cream also claims to have other properties, such as improving wrinkles, then further ingredients are added.

So, what starts out as a simple emulsion quickly becomes a cocktail of harmful ingredients. And here's the catch. The emollients also act like penetration enhancers – agents that aid the absorption of other, more toxic substances into the skin and, eventually, the bloodstream.

It's hardly surprising, then, that moisturising creams can and do cause problems like allergic reactions, skin irritation and contact dermatitis, characterised by redness, itching, burning and stinging sensations. Used over the long term, they can also create the very problem they are intended to

PHOTOGRAPH BY CORBIS



'...healthy skin begins on the inside'

solve by actually encouraging water loss from the skin.

Toxic ingredients

Some moisturising ingredients, however, are harmful in their own right. Mineral oil, a byproduct of the distillation of gasoline from crude oil, impedes the skin's ability to breathe, attract moisture and detoxify. It can also slow down cell renewal

and so promote premature skin-ageing. Moreover, any mineral-oil derivative can be contaminated with cancer-causing polycyclic aromatic hydrocarbons (PAHs).

Humectants such as alpha-hydroxy acids (lactic or glycolic acid) act like chemical peels, thinning the stratum corneum and, ultimately, accelerating water loss.

Many emollients trap dirt and sweat under the skin, and some, such as petrolatum, degrade the skin's natural protective barrier, rendering it more vulnerable to bacteria and viruses.

Film-forming ingredients like PTFE (Teflon) and dimethicone are now routinely added to cosmetics and bodycare products, despite the lack of any comprehensive evaluation of their safety. Both are non-biodegradable.

Teflon contains the potential carcinogen perfluorooctanoic acid (PFOA), and some silicones are known to be tumour promoters, and to accumulate in the liver and lymph nodes.

The latest moisturisers are already using nanoparticles that can slip into the spaces between skin cells before releasing their active ingredients. Yet, no research has been conducted to show how

much more of these substances is absorbed into the bloodstream using this 'technology', so if you want to avoid them, look for words like 'liposome' or 'nanosome' on the label.

Do you really need a moisturiser?

While the cosmetics industry loudly trumpets the benefits of moisturisers, most of these

miracle effects are unsubstantiated and temporary.

In truth, healthy skin begins on the inside, and nothing you put on your skin will be as effective as sorting out your diet, your sleep, your stress levels and your environment.

Unless you have an underlying skin condition that requires medical attention, you probably don't

need a regular moisturiser.

If your skin is occasionally dry, consider using natural oils after bathing or washing to temporarily seal in moisture. Effective do-it-yourself moisturisers can be prepared on an 'as needed' basis by almost anyone from a simple mixture of vegetable or biological oils (coconut, jojoba, almond or emu) and plant 'butters' (shea or mango), water and glycerine. With practice, these can be made to suit different areas of the body and in response to the skin's seasonal needs (for example, heavier oils in winter, lighter ones in summer).

The advantage of natural oils is that they contain all the nutrients normally found in the plant or animal. Many of them, such as jojoba and emu oils, are amazingly similar to the oils in human skin and, as such, are non-irritating, don't clog the pores and are deeply nourishing.

Unless you have a skin condition that requires medical attention, you probably don't need to use a moisturiser on your skin every day

ACTION POINT

WHAT YOU CAN DO

1 Go into your bathroom and look at the labels of your favourite products. Do any of them contain the following moisturisers?

- | | |
|------------------------------------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Acrylates/C10-30 alkyl acrylate crosspolymers | <input type="checkbox"/> Isopropyl palmitate |
| <input type="checkbox"/> Cyclomethicone | <input type="checkbox"/> Isopropyl stearate |
| <input type="checkbox"/> Cyclopentasiloxane | <input type="checkbox"/> Octyl dodecanol |
| <input type="checkbox"/> Decyl oleate | <input type="checkbox"/> Oleyl alcohol |
| <input type="checkbox"/> Dimethicone | <input type="checkbox"/> Paraffinum liquidum |
| <input type="checkbox"/> Dimethicone copolyol | <input type="checkbox"/> Petrolatum |
| <input type="checkbox"/> Dioctyl cyclohexane | <input type="checkbox"/> Propylene glycol |
| <input type="checkbox"/> Hexyl decanol | <input type="checkbox"/> Simethicone |
| <input type="checkbox"/> Hexyl laureate | <input type="checkbox"/> Lactic acid |
| <input type="checkbox"/> Isopropyl myristate | <input type="checkbox"/> Glycolic acid |
| | <input type="checkbox"/> Urea |



2 If so, photocopy these pages, tick on the boxes of the worrying preservatives you have found on the label and write to the manufacturer's customer services department, asking them why, given that the following natural, non-toxic and equally effective moisturisers are available, they are using such ingredients in their product.

- | | |
|-----------------------------|--------------------------|
| Almond oil | Hempseed oil |
| Aloe vera | Honey |
| Apricot-kernel oil | Jojoba |
| Avocado oil | Macadamia nut oil |
| Beeswax | Mango butter |
| Castor oil | Olive oil |
| Cocoa butter | Rosa mosqueta oil |
| Coconut oil | Shea butter |
| Emu oil | Squalene |
| Evening primrose oil | Wheatgerm oil |
| Glycerine | |
| Grapeseed oil | |



3 Ask the manufacturer to send a copy of their reply to The Ecologist, Unit 18 Chelsea Wharf, 15 Lots Rd, London SW10 0QJ or, failing that, pass the reply you do get on to us, as we will be monitoring all feedback for future investigations and campaigns.

ECO POWER CAMPAIGN

AIM To meet the UK's energy needs from local, clean, renewable sources

In the UK we need to move from our dependence on non-renewable, air polluting, climate changing, centrally generated, hugely inefficient and increasingly expensive sources of energy – gas (40%), coal (30%), nuclear (20%), oil (5%) – to non-polluting, small-scale energy sources generated as close to users as possible, eg wind, hydro, tidal, solar, biofuels, ground source heat etc.

HOW? Supplying the current (and expected increased) energy demand in the UK, while keeping prices for energy low is IMPOSSIBLE. We either confront this and start to adapt or we stick our heads in the sand and moan about the inexorable rise in our energy bills. Each one of us, starting at home and then moving out into our local communities and workplaces, needs to:

- 1 SWITCH our energy SUPPLY to ECOTRICITY**
- 2 REDUCE our energy DEMAND**
- 3 LOCALISE our energy SUPPLY... individually, and in our communities.**

We can't wait for politicians to act, and can't rely on an energy market that profits from rising energy prices and increasing demand. This is why the *Ecologist* and Ecotricity have teamed up to ease your transition from expensive centrally supplied energy to clean, locally supplied energy at home (and at work). Our combined research and practical expertise will ensure that the options we recommend for reducing demand and generating your own supply will work without costing you a fortune.

STEP 3: CURING ELECTRICAL INCONTINENCE

Clutching a large purple balloon, a plug-in meter and a feather duster, Dave Hampton takes **Matilda Lee** hunting for lost watts



Electricity leakage? I had the Carbon Coach on the phone again. This time, he was on

about how my appliances weren't working properly. I assured him that if any of my appliances leaked electricity, I wouldn't be fanning about with him – I'd be on to an electrician pronto. But no, he was itching to help me take the next step in home-carbon reductions. He said he wanted to make my electricity usage 'visible', take £100 off my annual electricity bill and show me how, in addition, that would reduce my CO₂ emissions by half a tonne a year. I accepted, on one condition – that he pull his home apart, not mine.

So there I was – sitting in his beautifully 'energy-efficient', lightbulb-lit and airy living room – with Dave, his purple carbon balloon and a little contraption called the Plug-In power meter that displays watt usage. He passed it to me. 'Buy yourself one of these from Maplin electronics and you could save yourself a fortune in 'lost watts'.' 'Lost watts' – what on earth was he going on about? I smiled. Dave smiled.

First, he hooked it up to his TV – one of three in his six-person home – and it started beeping until the watt sign flashed. And yet, the TV wasn't turned on. It was leaking electricity on standby, right before my eyes. By not turning his TV off at the mains, it continued to waste electricity – at the rate of 3 watts continuously all year. Dave insisted we do an exhaustive round of every appliance with standby in his house – including the DVD, the VCR, the stereo and the kids' game console. I was astonished that, altogether, they added up to 27 watts of leakage.

In the study, he used the Plug-In on his laptop charger which, even though

the laptop was turned off and fully charged, was also leaking electricity. 'Once my laptop is fully charged, I switch it off at the mains, and save at least 2 watts a year,' Dave added.

Next stop – the kids' room. 'My daughter has an electronic piano with a charger that gets quite warm even when the piano is switched off. It may sound funny, but you've got to trust your senses,' he said. 'If a transformer feels slightly warm to the touch – that'll be a watt or two.'

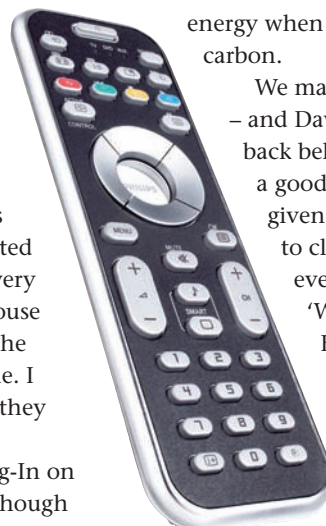
Dave's hunger for 'lost watts' really showed through when he told me that even his burglar alarm was leaking electricity until he got the chap doing the 12-month service inspection to go round disabling all the LED lights on the sensors. 'For a total saving of 5 watts a year,' he said, with a broad grin.

I was now starting to 'see' his electricity usage – standby, permanently illuminated displays, warm transformers – I was getting what he meant by electricity leakage.

We had somehow managed to breeze past the big box perched on his TV. 'Let's hook up the Plug-In meter to that,' I ventured. 'Oh,' he said, looking sheepish, 'That's the Sky Plus box my sons use to watch sports. I haven't quite mastered that yet. Sky Plus uses a massive 15 watts on standby and they insist you keep it on all night to download updates. I've been hounding them about getting the wattage down . . .' I knew not to underestimate the Carbon Coach's boundless energy when it came to the subject of carbon.

We made our way into the kitchen – and Dave, dustring in hand, reached back behind the fridge to give the coils a good once-over. I thought he had given in to a sudden bizarre urge to clean until he told me dusting every year keeps it running well. 'What do you mean?' I asked. He 'fessed up, 'It saves around 10 watts a year.'

Even our tea break became an example. 'The kettle, its simple, but just fill it with what you need.



That's a 20-watt saving averaged out over the year,' he said.

The last measure had to do with reducing the use of the dishwasher, washing machine and tumble-dryer. By only using these appliances with full loads – according to Dave's calculations – I could save a whopping 60 watts over the course of a year.

And that was it. An hour was up, and Dave managed to get our 125 watts base load savings (half a tonne of CO₂) and show me how to cut my electricity bill by £100.

On the way home, as I passed hundreds of brightly lit homes, I imagined all of us – all 26 million households in the UK – each saving half a tonne of CO₂ a year. Wow, no wonder Dave was so obsessed.

Maybe I will get a Plug-In power meter, just to keep an eye on my electricity leakage. In the meantime, I've taken the batteries out of our remote controls, to be sure that I don't slip back into standby mode. My husband isn't pleased.

■ Sign up to Dave Hampton's newsletter at www.carboncoach.com

HOW DAVE SAVED £100 AND HALF A TONNE OF CO₂ OVER A YEAR

Standby:

TV (three at 3W each)	9W
DVD	1W
VCR	2W
Game consoles	8W

Computers 2W

Burglar alarm 5W

Power transformer equipment 8W

Dusting refrigerator coils 10W

Kettle savings 20W

Minimising tumble-dryer use 40W

Minimising dishwasher and washing machine use 20W

NOTE: Calculations are based on an average 9 pence a unit (kWh) paid for electricity and the UK average of 0.45 kilos of CO₂ upstream at the power station for each kWh. So, 125 W x 8760 hr (24 hr per day x 365 days) = 1095 kWh = **£99 and 0.5 tonnes of CO₂.**

ERRATUM: In the last issue, we attributed 100 g of CO₂ to Dave Hampton's 1 metre diameter purple balloon. The correct figure is 1 kg. This means that a traditional 100W lightbulb produces one of the 1-kg balloon's worth of CO₂ every 22 hours, and 160 balloons every year. By contrast, a 20W energy-efficient lightbulb would produce only 30 balloons worth of CO₂ a year.

ECO POWER CAMPAIGN STEP 1: SWITCH TO ECOTRICITY

No matter where you live you can switch your electricity supply to Ecotricity.

WHY ECOTRICITY?

■ Since it was founded in 1995, Ecotricity has built 17.5MW of new wind energy, and currently supplies enough electricity to power 12,000 homes.

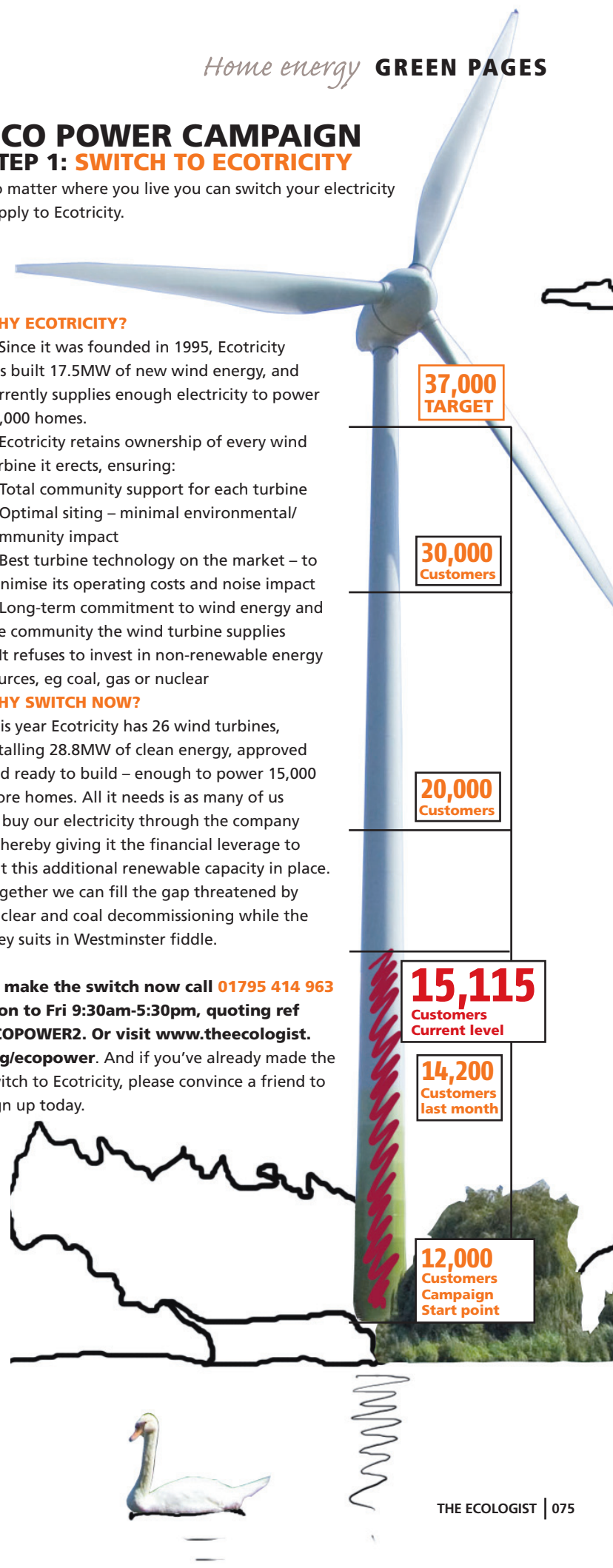
■ Ecotricity retains ownership of every wind turbine it erects, ensuring:

- Total community support for each turbine
- Optimal siting – minimal environmental/ community impact
- Best turbine technology on the market – to minimise its operating costs and noise impact
- Long-term commitment to wind energy and the community the wind turbine supplies
- It refuses to invest in non-renewable energy sources, eg coal, gas or nuclear

WHY SWITCH NOW?

This year Ecotricity has 26 wind turbines, totalling 28.8MW of clean energy, approved and ready to build – enough to power 15,000 more homes. All it needs is as many of us to buy our electricity through the company – thereby giving it the financial leverage to put this additional renewable capacity in place. Together we can fill the gap threatened by nuclear and coal decommissioning while the grey suits in Westminster fiddle.

To make the switch now call **01795 414 963** Mon to Fri 9:30am-5:30pm, quoting ref **ECOPOWER2**. Or visit www.theecologist.org/ecopower. And if you've already made the switch to Ecotricity, please convince a friend to sign up today.



37,000 TARGET

30,000 Customers

20,000 Customers

15,115 Customers Current level

14,200 Customers last month

12,000 Customers Campaign Start point

THIS MONTH'S VINEYARD:

CHÂTEAU RICHARD

Monty Waldin discovers why giving grape bunches space to breathe leads to riper-tasting and more intense wines



Château Richard's organic vineyards produce some of southwest France's most consistently enjoyable and easy-to-get-to-grips-with wines. They are ripe-tasting, clean and intensely flavoured. In fact, Château Richard is a rare example of a French wine estate that produces both dry and sweet whites, red and even rosé wines of high quality. Most winemakers manage to get just the one type of wine right – perhaps the whites and rosés in a cooler year, or the reds in a hotter one – but few seem to be able to maintain, as Château Richard does, top quality across the board, year in and year out, for all of its wines.

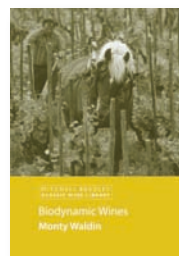
Even more unusually, Château Richard is owned by a Brit – Richard Doughty. There are plenty of ex-pats making wine in foreign

lands, but few can match this bear-like man for determination and skill.

Born in Windsor, Doughty took over the 17-hectare (42-acre) Château Richard near Bergerac in 1988. 'For the first few years, I didn't have many grapes as we got hit by spring frost and hail, which reduced the amount of wine we could make, and rain at harvest-time which adversely affected quality,' says Richard, 'and we almost went bankrupt.'

However, Doughty by name and, er, doughty by nature, Richard stuck at it, and converted to organic methods as soon as was practicable. 'I love walking around my vineyards,' says Richard, 'and so do the tourists who pay to stay in our holiday apartment, or *gîte rurale*. I want to be sure that the air we are all breathing is not polluted by vineyard chemicals, potentially dangerous substances that you have no need of if you get your soils in balance. If your soil is balanced, your vines will be more naturally resistant to disease. So, instead of spending money and time spraying chemicals against diseases you should never have in the first place, you can concentrate on doing jobs in the vineyard that promote quality.'

Biodynamic Wines by Monty Waldin is published by Mitchell Beazley. To order at the special price of £20.00, including post and packing (RRP £25.00), please call 01903 828 503 and quote the code PUB320.



One key practice here is removing excess leaves and water shoots from around the grape bunches in early summer. 'This allows light and wind around the grape bunches. They get more sunlight, so you get riper-tasting and more intense wines, and it means that when it does rain, the moisture dries quickly, so you don't get rot.'

Château Richard is located between the famous wine towns of Bordeaux and Bergerac in southwest France's Dordogne valley. 'Rainfall levels here are some of the highest in France due to westerlies coming in off the Atlantic,' says Richard, who knows a thing or two about oceans, having trained as a geographer and an oceanographer.

'The other real benefit of maintaining a healthy, airy leaf zone is that healthy populations of wild yeast are more likely to form on the grapeskins,' explains Richard. 'You can see these wild yeasts on the grapeskins as a whitish-grey, powder-like or waxy layer which we winegrowers called the 'bloom'. Individual wild yeast cells are microscopic, but they are floating all around us all of the time: in the home, in the office and, of course, in the wild. ►



ECOLOGIST ORGANIC & BIODYNAMIC WINE CLUB

Why buy 'ORDINARY' wine when Organic & Biodynamic wines are...

- ✓ Intriguingly different and reassuringly delicious
- ✓ Grown without chemicals, using traditional viticulture methods
- ✓ Fighting the commoditisation of wine by multinational wine labels
- ✓ Lovingly produced by small-scale, family-owned & -run vineyards
- ✓ Creating rich and diverse habitats for creatures great and small
- ✓ Excellent value

TO ORDER YOUR CASE of 'SPRING BLOOMERS', please telephone 01795 414 963 Mon to Fri 9:30am-5:30pm, quoting ref VINTAGE02

Case 2 (12 bottles) SPRING BLOOMERS £60.67 (15% off the RRP £71.38, incl VAT) +£6.95 delivery

CHATEAU RICHARD: 1) Bergerac Blanc Sec AC, Les Charmes White (X2); 2) Bergerac Blanc Sec AC, Château Richard (X2); 3) Bergerac Rouge AC, Les Charmes Rouge (X2); 4) Bergerac Rouge AC, Château Richard (X2); 5) Saussignac AC, Château Richard (X2)

DOMAINE DE PAJOT (see May issue for tasting notes): 6) Vin de Pays des Côtes de Gascogne Blanc (X2)



PHOTOGRAPHS BY ADRIAN TAYLOR

TERMS & CONDITIONS

*Available in the mainland UK only. Please allow seven working days for delivery. Purchasers must be 18 years or over. Offer open to *Ecologist* subscribers. One case per subscriber while stocks last. No customer substitutions. Wines supplied and delivered by Vintage Roots, Bridge Farm, Reading Road, Arborfield Berkshire, RG2 9HT.



Each vineyard will have its own population of wild yeast, but you must encourage the yeasts to settle on your grapes. The grapeskins must be strong and healthy, thick enough to offer the wild yeast a home. You only get thick skins if your grapes get enough sun and the soils are in balance. If the soil is too rich in chemical fertilisers, the grapeskins become too thin and, instead of beneficial wild yeasts, you get nasty rot spores, which destroy the grapeskins by puncturing and then causing them to rot.

‘Rather than using chemical fertilisers, we allow native vegetation like wild leaves and clovers to grow between the vine rows between autumn and spring. As well as making delicious wild winter salads for us humans, these wild plants also help feed the soil in which our vines grow. When we plough them into the vineyard soil in spring, the green matter breaks down and provides just enough nutrient for the vines. You could say we do the minimum amount of work to get the maximum result.’

This ethos is carried through into the winemaking where, as you would hope, the natural yeasts on the grapeskins do the work of making the wine by feeding on the grape sugar and converting it into wine alcohol in the process called ‘fermentation’.

‘If your vineyard is out of balance, you’ll have to use chemical fungicides,’ explains Richard. ‘And if you are using chemical fungicides, you will kill off the native yeasts on the grapeskins. As

a result, you will have to chuck a few kilos of commercially prepared, pre-dried yeasts sold in vacuum packs into the grape juice to get it to ferment.

‘Nothing wrong with that, you may say, but if winegrowers in Alsace, Bordeaux and our region of the southwest are buying exactly the same brand of artificial yeast for the same manufacturer, you can be sure that their wines will start to taste similar, even though the vineyards are located hundreds of miles apart.

‘We know our wines are unique because our wines are fermented by wild yeasts native to our vineyards. But we also have to be sensitive to these yeasts, so we use the bare minimum of sulphur dioxide and, in the case of our red ‘Cuvée Osée’ wine, no sulphur dioxide at all.

‘Sulphur dioxide is used by many winemakers as a disinfectant. They add it to the grape juice to kill off the native yeasts before they add these powerful commercial yeasts – a bit like sterilising a patient before an operation in a hospital. Their aim is to make the fermentation as predictable and short as possible – sometimes lasting as little as a week – so the winemakers can put their feet up and not have to bother with the winery until spring, when the wines are bottled.

‘We, on the other hand, are quite happy to let the yeast ferment the grape sugar at their own pace. Some of our wines take six months to ferment, but longer fermentations produce more complex wines, just as a slow-cooked steak is going to taste more interesting than a fast-food burger.’

CONTACT DETAILS

Château Richard, 24240 Monestier (Dordogne), France
Tel 05.53.58.49.13
Email info@chateaurichard.com
Internet www.chateaurichard.com

CHATEAU RICHARD TASTING NOTES

Château Richard has been certified organic since 1990 by Ecocert France. The following wines are all suitable for vegetarians and vegans.



1) Bergerac Blanc Sec AC, Les Charmes White

Tingly, fresh dry white wine comprising: Sauvignon Blanc for crispness and gooseberry flavours; Semillon for a soft buttery texture; and a small percentage of Muscadelle for a juicy wholesomeness.



2) Bergerac Blanc Sec AC, Château Richard

This dry white wine is made from the same grapes as the Les Charmes White (see above). This version is ‘lees-aged’, meaning it is kept on the dead yeast after fermentation. The technique keeps wines fresher for longer and adds a bread-y softness to the fruit flavours.



3) Bergerac Rouge AC, Les Charmes Rouge

An immediately drinkable dry red wine made from Merlot, Cabernet Franc and Cabernet Sauvignon, the Merlot brings soft bramble-fruit flavours and the Cabernet Franc, sensuous liquorice flavours, while the Cabernet Sauvignon adds some blackcurrant spice.



4) Bergerac Rouge AC, Château Richard

A dry red wine, the same grapes as the Les Charmes Rouge (see above), it has more structure, so it can be aged in bottle for several years. A wine to savour.



5) Saussignac AC, Château Richard

World-class, late-picked sweet white wine, fermented in barrels and made from 70 per cent Semillon, 25 per cent Muscadelle and 5 per cent Sauvignon Blanc. These grapes are picked late enough for beneficial rot to have formed on the grapeskins, which concentrates the sugars, making for an incredibly intense wine.

GREEN SHOPPING GUIDE

Make every £1 you spend count



READER OFFERS 82 Organic Smokehouse taster box **86** Cleaner water with a natural filter system **90** Fabulous Fair Trade trainers **92** Organic skincare from mybeingwell **94** No Excuse! Cloth Nappy trial pack **95** Hejhog baby essentials 20% off

Timberland® Make it better.™

Scholarship

Timberland is a brand synonymous with environmental, community and corporate social responsibility. The Timberland Scholarship is an extension of this company ethos. Now moving into its second year the Timberland Scholarship is a fund set aside by Timberland to sponsor great ideas, initiatives, challenges or activities.

The idea for the Timberland Scholarship was borne out of the company's culture to support inspiring, interesting, unique and adventurous out-door activities and incorporate them into their community work.

The first Scholarship Award to be completed was the Yippee Group Expedition to Iceland. This project aimed to enable young people with an ABI (Acquired Brain Injury) to discover and

explore the outdoors for themselves whilst building self-confidence.

Another award which is currently underway is the Alpha Global Expedition. This is an attempt to sail the first global, single-handed, non-stop circumnavigation along a longitudinal route. Adrian Flanagan set sail from Hamble Point Marina on the 28th October 2005 and will end 300 days and 35,000 miles later.

The Timberland Scholarship is celebrating its second year in 2006 and is currently inviting applications to be submitted for this year's awards. The deadline for 2006 applications is April 28th.

For further information please email: applications@thescholarshipaward.co.uk

Make it Better



GREEN SHOPPING GUIDE

Dear Green shopper

OUR VISION

Vibrant, self-sustaining communities, full of locally owned and supplied independent shops and businesses providing all of a community's diverse needs.

TODAY'S REALITY

Chain stores and supermarkets are choking the life out of communities. Money, which once circulated within communities, now lines the pockets of distant head offices and shareholders. Where once there were towns and villages with unique identities, there are now identikit, one-size-fits-all high streets.

WHAT CAN WE DO?

We all need to turn the tide of blandness and buy from our local independent shops. For those of us bereft of genuine local shops, use this guide to shop ethically via the web and bring us one step closer to the vibrant real communities we long for.

WHY THESE ONES?

These organisations have been carefully chosen to include inspiring and independent producers and retailers who are committed to offering products and services that:

- are non toxic to you and the environment
- ensure highest standards of animal welfare
- support local communities
- offer a fair wage and decent working conditions to all parts of the supply chain
- use minimal packaging
- minimise transport miles.

FEEDBACK

Please tell us (gsg@theecologist.org), and them, what you think. If you're unhappy, don't move on silently. We need all the support we can get!

ADVERTISING IN THE *ECOLOGIST* REALLY WORKS!

WE HAVE TESTIMONIALS TO PROVE IT.

If you have a product that is produced ethically from organic materials and sustainable sources The *Ecologist* can offer you an audience of 400,000 potential new customers. The editorial in the Green Pages strongly supports such producers and

actively encourages readers to use their services. We offer flexibility on the price of advertising for small and start-up businesses to enable them to take advantage of this wonderful opportunity to gain new and loyal customers.



"For advice and information how to advertise call Zayda on 020 7351 3578"

ADVERTISING RATES

DISPLAY ADVERTISING

Lineage	£2 per word
1/16 page	£125 [series of 10, £65 each]
1/8 page	£275 [series of 10, £125 each]
1/4 page	£375 [series of 10, £220 each]
1/2 page	£700 [discounts negotiable]
Full page	£1,200 [discounts negotiable]
Double page spread	£2,200
Inside front cover	£2,500
Inside back cover	£1,500
Outside back cover	£1,750

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We live in a country where: every week one farmer kills himself; £1 in every seven is spent in Tesco; apples are flown in from New Zealand, yet two-thirds of our apple orchards have been destroyed; one-sixth of what we pay for food in the UK goes on packaging; pesticides are a £500 million market; and local, independent food shops – including butchers, bakers, greengrocers and fishmongers – go out of business every week.

THIS IS NOT ACCEPTABLE

We challenge the **FOOD & DRINK** industry to:

- Grow organic
- Stop factory farming
- Cut packaging
- Pay fair wages
- Minimise food miles
- Remove all carcinogens and toxins such as: synthetic colours; additives; aromas and flavourings; artificial preservatives; flavour enhancers and hydrogenated fats.

What we can do as consumers:

- Never shop in supermarkets
- Buy local fresh food
- Cook more
- Grow our own food
- Support small, independent and ethical producers and retailers in these listings.



ecologist
READER OFFER

Organic Smokehouse taster hamper £27.50
10% off for Ecologist readers



com

At The Organic Smokehouse, the smoking process is about the continuance of a centuries-old craft. All of the smoking is carried out without any mechanical intervention, using the traditional 'draft method', with air-dried, naturally fallen, Shropshire oakwood. It is a slow process, giving a greater depth of flavour to our products.

Our salmon are reared in open seas off the coast of the Outer Hebrides, where fast-flowing currents combine with low stocking densities to give the salmon their natural strength. The sweetness of the oak smoke compliments the salmon's delicate natural flavours, ensuring a smoked salmon of the highest quality. All products are sourced from small, organic – and, where possible – local producers.

To see our full range of smoked goods, go to www.organicSmokehouse.com.

For £24.75 (including p&p) you will receive a hamper containing:

Organic Smoked Salmon	200 g
Organic Smoked Salmon Mousse	100 g
Smoked Halen Mon Sea Salt	50 g
Organic Smoked Cheddar	220 g
Organic Smoked Butter	250 g
Organic Smoked Extra Virgin Olive Oil	100 ml



TO ORDER YOUR TASTER HAMPER, please call **01588 660 206**, quoting 'Ecologist reader offer' (valid until 28 April 2006).

FRESH PRODUCE

Fed up walking the strip-lit aisles of your 'local' supermarket and buying overly packaged, non-ripe, tasteless varieties of 'non-fresh' produce? Why not free yourself from this supermarket hell, and visit one of these excellent local producers online. Get them to deliver their genuinely fresh, seasonal fruit, veg, fish and meat direct to your door – safe in the knowledge that they're environmentally sound, locally sourced and meet the highest animal welfare standards . . .

FRUIT & VEGETABLES

No local greengrocer or farmer's market? Why not discover what real fruit & veg tastes like, and sign up for a local box scheme? For 15 reasons to join one, and a list of suppliers throughout the UK, go to www.theecologist.org/boxscheme . . .




ORGANIC BEEF, LAMB, PORK & POULTRY

No local butcher? Reliant on heavily processed, packaged and factory-reared supermarket meat? Find out what meat should really taste like – order your next steak online . . .



How can I be sure my meat will arrive

fresh? Fresh meat and fish is carefully wrapped in insulated boxes with ice packs, ensuring that frozen goods stay frozen and chilled items stay chilled.



Sheepdrove Organic Farm

ORGANIC Beef, Lamb, Mutton, Pork, Chicken & Meat Boxes
Delivered Nationwide

Sheepdrove is a 2,000 acre traditional mixed farm, where crops and livestock are cultivated and reared naturally, without GMOs, artificial fertilizers and pesticides, growth-promoting hormones or routine antibiotics.

Call 01488 674747 or visit www.sheepdrove.com

Sheepdrove Organic Farm, Lambourn, Berkshire RG17 7UU Email: sales@sheepdrove.com

Graig Farm Organics

www.graigfarm.co.uk

Higher Hacknell Farm

www.higherhacknell.co.uk

Sheepdrove Organic Farm

www.sheepdrove.com

The Real Meat Company

www.realmeat.co.uk

Well Hung Meat

www.wellhungmeat.com

FRESH FISH

No local fishmonger? Want your omega-3 fatty acids without further endangering chronically depleted fish stocks? Have your sustainably caught/reared fish delivered to your door.



Graig Farm Organics

www.graigfarm.co.uk

Inverawe Smokehouses

www.smokedsalmon.co.uk

The Organic Smokehouse

www.organicsmokehouse.com

Deverill Trout Farm

www.purelyorganic.co.uk



What happens if my delivery arrives and I'm not in? Carriers can be instructed to leave your delivery in a safe place, with a neighbour, or at a local shop. The

companies listed in this guide will do their utmost to cater to your specific needs – if you are not at home – please do let them know and alternative arrangements can be made.



STORE CUPBOARD ESSENTIALS

Faced with your weekly box of fresh produce, all you'll need to make a huge number of delicious recipes is a well-stocked store cupboard. What could be more convenient than having these 'essentials' delivered/topped-up once a month from one of these excellent online ethical general stores. Or why not club together with a bunch of friends and form a food-buying group – and save huge amounts of money on good, local, organic 'essentials' from one of the ethical wholesalers listed opposite.

BASIC INGREDIENTS

Baking powder
Beans
Cocoa
Flour
Herbs
Honey
Ketchup
Lentils
Mayonnaise
Mustard
Oats
Olive oil

Pasta
Pepper
Rice
Salt
Spices
Stock cubes
Sugar
Tabasco
Tinned tomatoes
Vanilla extract
Vinegar
Worcestershire
Yeast

Graig Farm

www.graigfarm.co.uk

Goodness Direct

www.goodnessdirect.co.uk

Hider

www.hider-foods.co.uk

Naturally Good Food Ltd

www.goodfooddelivery.co.uk

Real Food Direct

www.realfooddirect.co.uk

Traidcraft Plc

www.traidcraft.co.uk



ECOLOGIST ACTION

FOOD-BUYING GROUPS

Save money on your groceries by joining or creating your own local food-buying group. To set one up see www.theecologist.org/foodbuyinggroups. The wholesalers listed below supply a comprehensive range of ethically produced and organic 'store-cupboard essentials'.

Clearspring

www.clearspring.co.uk

Community Foods

www.communityfoods.co.uk

Eostre

www.eostreorganics.co.uk

Essential Trading

www.essential-trading.coop

Organico

www.organico.co.uk

Suma

www.suma.co.uk

CRAZY JACK ORGANIC CRANBERRIES 100G



Our naturally dark berries are dried WHOLE, without squeezing out all the juice first!

Try it and taste the difference yourself
Find out more at www.crazyjack.co.uk and www.communityfoods.co.uk

Crazy about food, serious about the planet



DRINK

BEERS, ALES & CIDER



Beers in a Box

www.beersinabox.com

Black Isle Organic Beers

www.blackislebrewery.com

Broughton Ales

www.broughtonales.co.uk

Dunkerton's Cider and Perry

www.orchard-hive-and-vine.co.uk

Freedom Organic Beer

www.freedombeer.com

WINE

Festival Wines

www.festivalwines.co.uk

Pure Wine

www.purewine.co.uk

Vinceremos

www.vinceremos.co.uk

Vintage Roots

www.vintageroots.co.uk

SPIRITS

Juniper Green Organic Gin

www.junipergreen.org

Stonelink Farm (organic sloe gin)

www.stonelinkfarm.co.uk

ORGANIC SPIRITS

Juniper green gin. UK5 vodka. Papagayo white and spiced rums.

Order direct from: **Vintage Roots/ Vinceremos** or call **01483 894650**

COFFEE



A Lot of Coffee

www.alotofcoffee.co.uk

Café Direct

www.cafedirect.co.uk

Equal Exchange

www.equalexchange.com

Origin

www.origincoffee.co.uk

The Bean Shop

www.thebeanshop.com

SELECTED AS ONE OF THE BEST HOME SHOPPING COMPANIES BY THE INDEPENDENT

frozen foods + chilled foods + groceries + wholefoods + fresh foods + supplements =

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healthy shopping made easy

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When you buy our chocolate you are actively supporting farmers in the Dominican Republic who use sustainable farming methods.

The range includes a festive seasonal **Santa**, an **Easter Bunny**, and two delicious 95g Bars including an **Orange Bar** flavoured with organic orange oil, and a **Plain Bar** for purists. The Bars also contain extra cocoa butter to give them a really smooth, indulgent melt-in-the-mouth texture.

The Bars are available from independent health food stores around the UK and the Santa and Bunny are available seasonally from larger food retailers.

www.buxtonfoods.com





ecologist READER OFFER

Go to simplywater.com/uk now for a special offer worth £92!

**Do you want pure, clean water?
Why not try Simply Water's under-sink water-filtering system?**

The system:

- uses all natural filtering materials
- includes a lifetime guarantee.

Simply Water would like to offer *Ecologist* readers a bonus package **WORTH £92** when they buy this water-filtering system. This bonus package will provide you with **PURE** water for up to two years.

THE PACKAGE INCLUDES:

An introductory discount of **£30 off the rrp** of £198 plus **FREE extra water-filter element, worth £32**
FREE upgrade to the world's number-one tap, worth £30
ALL FOR JUST £168.

This easy-to-use and easy-to-install water-filtration system removes/reduces:

- 99% of dangerous bacteria
- all parasites and cysts, including *Cryptosporidium*
- chemicals such as chlorine, pesticides and solvents
- metals such as lead
- dirt, rust and sediment
- foul tastes and odours
- discoloration.
- the lowest environmental footprint of any such system.

To take advantage of this introductory offer, go to www.simplywater.com/uk.
{Offer valid until 31 May 2006}
Simply Water
tel: 00353 1492 0414;
email info@simplywater.com

3 SIMPLE STEPS TO WASTEBUSTING! MORE THAN HALF OF YOUR RUBBISH ISN'T RUBBISH AT ALL.



1 Feed the WasteBuster plate scraps, old clothes, coffee grinds, fruit and veg peelings and cardboard.

2 Watch as the worms get to work and transform them into rich composting soil.

3 Jiggle the tray to let the vermicompost sift through.

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Made from FSC wood, 64cmH x 45cmW x 54cmD. Includes worms, worm bedding and full instruction manual. Perspex viewfinder let's you watch the worms' progress. Suitable for 4-6 family members and for school groups and classrooms.

The best worm compost system around

Designer and vermicompost expert, George Pilkington, has developed the most natural, efficient and easy way to compost household food scraps and organic material using worms:

- No smell
- No handling of waste
- Hygienic
- Secure for indoor and outdoor use.

WASTEBUSTER'S GUIDE! JUST £6.99



Composting with Worms by George Pilkington. He's packed 20 years of experience into a family guide that explains: how worms turn waste into compost, the best uses for worm compost and what to do when good bins turn bad. The perfect companion for your WasteBuster. Call **0117 942 0165.**

**£139 incl
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delivery,
normally
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**GREAT
PRICE!**

Call **01254 820
088** quoting ref
*Ecologist Wastebuster
Offer*

BUILDING & MAINTENANCE

DIY ESSENTIALS

Building materials, flooring, insulation, paints and windows & doors

Construction Resources

www.constructionresources.com

Ecomerchant

www.ecomerchant.co.uk

Green Building Store

www.greenbuildingstore.co.uk

The Green Shop

www.thegreenshop.co.uk

The Healthy House

www.healthy-house.co.uk

Nigel's Eco Store

www.theinsightecostore.com

CONSTRUCTION/RENOVATION

Cob in Cornwall

www.cobincornwall.com

Concept Timber

www.concept-timber.co.uk

Finch Macintosh Architects

www.finchmacintosh.co.uk

Gale and Snowden

www.ecodesign.co.uk

Insideout Buildings

www.iobuild.co.uk

Nicholas Hare

www.nicholashare.co.uk

Mike Wye and Associates

www.mikewye.co.uk

Quattro Design

www.quattrodesign.co.uk

PAINTS

Auro Organic Paints

www.auro.co.uk

Earth Born Paints

www.earthbornpaints.co.uk

Ecomerchant

www.ecomerchant.co.uk

Ecopaints

www.ecopaints.co.uk

Eco Solutions Ltd

www.ecosolutions.co.uk

Nutshell Natural Paints

www.nutshellpaints.com

The Green Shop

www.greenshop.co.uk

TILES

Natural Tile

www.naturaltile.co.uk

Siesta Cork Tile Co

www.siestacorktiles.co.uk

TIMBER

Altham Hardwood Centre

www.oak-beams.co.uk

Victorian Wood Works

www.victorianwoodworks.co.uk

WOOD FLOORING

Treework Flooring

www.treeworkflooring.co.uk

green
building
store

sustainable building products

mail order & online

timber windows
and doors

super-efficient
glazing

new range of
aluminium-clad
timber windows
and doors

natural paints

timber finishes

paint strippers

timber
preservatives

garden timber
treatments

ultra-efficient
WCs

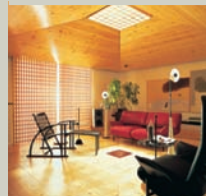
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water-saving
fittings

natural
insulation

steel rainwater
drainage

and more. . .

At Green Building Store we only sell building products which promote healthy, environment-friendly homes. Whether you are redecorating, building or refurbishing we can help you do it safely and sustainably.



- Ecoplus System. High performance timber windows, doors and conservatories, with a unique environmental specification.
- Ifö ultra-efficient WCs. Elegance and water conservation combined.

- The Natural Paint Collection.* Natural ingredients; healthy, effective paints and woodfinishes.
- Lindab rainwater drainage system. The solid steel alternative to PVC guttering.

* Some products contain some non-natural ingredients.



To find out more, visit our website or call our sales team:

www.greenbuildingstore.co.uk
01484 854898

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www.greenfibres.com



Whatever colour you choose, it's good to know that it's green

Now you and your family can breathe a little easier. We supply organic based solvent-free wall paints by AURO, the leading name in natural paint. Learn more, view our full range and enjoy discount prices by visiting our online shop. www.ecopaints.co.uk **Ecopaints**

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Are you looking for a well-established UK company who can provide 90% of the energy saving products you need to reduce energy and energy costs in your home or business by up to 70%? **Look no further...**

Powertech Solar Ltd is a One Stop Shop for renewable energy technologies. Our systems can be used in a wide range of domestic and commercial applications. Give us ring to find out what energy saving solutions we can offer you.



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Hybrid Power Systems
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Water-to-Water Heat Pumps
Multi Fuel Thermal Stores
Plypipe Underfloor Heating
Specialist Lighting

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F - 08707 300 222
E - sales@solar.org.uk
W - www.solar.org.uk

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INTERIORS

BEDDING & LINEN

- Albatross**
www.albatross-global.com
- Green Fibres**
www.greenfibres.com
- Schmidt Natural Clothing**
www.naturalclothing.co.uk
- NEW**
- Arbor Vetum**
www.arborvetum.co.uk
- Rawnsley Woodland Products**
www.cornishwoodland.co.uk

RECYCLED & SALVAGED

- Reclaimed Pine Online**
www.reclaimed-pine-online.co.uk
- Treesave Reclamation Ltd**
www.buresreclamation.co.uk
- Viking Reclamation**
www.reclaimed.co.uk

CLEANING PRODUCTS

- Ecotopia**
www.ecotopia.co.uk
- Ecover**
www.ecover.com
- Greenlands**
www.greenlands-env.co.uk
- Natural Collection**
www.naturalcollection.com
- Vertue**
www.vertue.com



WATER

CONSERVATION


- Eco Logic**
www.ecologicuk.com
- Hippo the Water Saver**
www.hippo-the-watersaver.co.uk
- Tap Magic**
www.tapmagic.co.uk

RAINWATER HARVESTING

- Centre for Alternative Technology**
www.cat.org.uk
- Envireau Rainwater Management**
www.envireau.co.uk

PURIFICATION

- Earthly Goods**
www.earthlygoodsgroup.co.uk
- Pure H2O**
www.pureh2o.co.uk
- Simply Water**
www.simplywater.com

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paints, oils
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RENEWABLE ENERGY TECHNOLOGIES (wind, hydro, solar PV)

Dulas Ltd
www.renewable-resources.com

HiTech Energy Ltd
www.hitechenergy.co.uk

Power Tech Solar
www.powertech-solar.com

Wind and Sun Ltd
www.windandsun.co.uk

LIGHT BULBS

Energy Saving World
www.energysavingworld.co.uk

Lightbulbs Direct
www.lightbulbs-direct.com

Nigel's Eco Store
www.theinsightecostore.com

SUPPLIERS
Ecotricity
www.ecotricity.co.uk

GROUND SOURCE HEAT PUMPS

Conservation Engineering Ltd
www.heating-designs.co.uk

Eco Heat Pumps
www.ecoheatpumps.co.uk

Geothermal Heating International
www.geoheat.co.uk

Green Systems
www.greensystems.net

Groenholland UK Ltd
www.groenholland.com

Ice energy
www.iceenergy.co.uk

Kensa Engineering Ltd
www.kensaengineering.com

SOLAR WATER PANELS

Solar Twin
www.solartwin.com

Sustainable Energy Installations
www.sustainable-energy.org.uk

WOOD FUEL STOVES

Chilli Penguin Stoves
www.chillipenguin.co.uk

Ebc wood fuels
www.ebc-ecofuel.co.uk

Rural Energy Ltd
www.ruralenergy.co.uk

Wood Energy Ltd
www.woodenergyltd.co.uk



GARDEN

GARDEN ESSENTIALS *Compost & wormeries, garden furniture, pest & weed control, seeds, soil and plant care.*

British Eco
www.britisheco.com

Green Gardener
www.greengardener.co.uk

The Organic Gardening Catalogue
www.OrganicCatalogue.com

Tamar Organics
www.tamarorganics.co.uk

The Natural Collection
www.naturalcollection.com

FURNITURE & FENCING

English Hurdle
www.hurdle.co.uk

Forest Stewardship Council
www.fsc-uk.info

Pendlewood
www.pendlewood.com

Wilderness Wood
www.wildernesswood.co.uk

NURSERIES

Ryton Organic Gardens
www.hdra.org.uk

Landlife Wildflowers
www.wildflower.org.uk

National Wildflower Centre
www.nwc.org.uk

SEEDS

EXCHANGE
Flora Locale
www.floralocale.org

Henry Doubleday Research Association
www.hdra.org.uk

SUPPLIERS
Kokopelli Seeds
www.organicseedsonline.com

EcoSeeds
www.ecoseeds.co.uk

Tamar Organics
www.tamarorganics.co.uk

The Real Seed Catalogue
www.realseeds.co.uk



nigel's
eco store
eco stuff you'll love...

this is my website, it sells eco friendly stuff...

www.nigelsecostore.com
or phone 01273 821683

The information web site that promotes care of the environment

envocare

Would you like to improve the environment without a lot of fuss?
Visit the site designed to provide the information.

www.envocare.co.uk

Come and find hundreds of descriptions, tips, suggestions and links on a wide variety of environmental issues.

The site also offers reference articles on a range of selected topics.
You can find loads of high-res backgrounds to download and send virtual cards and there's always more.



CLOTHING

'Ever more precisely marketed products, and the power of the fashion industry, create a fetishistic concern to have this consumer good rather than that one, even though there is often no significant practical or aesthetic difference,' psychologist Oliver James wrote in the *Ecologist* in 2004. Behind the £48 billion a year we in the UK spend on clothing and jewellery, there is a cheap and expendable workforce, excessive pesticide use and carcinogenic dyes.

THIS IS NOT ACCEPTABLE

We challenge the CLOTHING & JEWELLERY industry to:

- manufacture and sell long lasting, durable products
- employ sweatshop-free labour
- use organic and natural fibres
- use natural dyes.

What we can do as consumers:

- Buy fewer clothes
- Look for quality
- Buy second-hand
- Don't be fashionable sheep
- Make our own
- Hold manufacturers and retailers to account
- Support small, independent, ethical producers and retailers in these listings.

Want to look good, but don't want to support sweatshops, pesticide abuse or dull brands? Then these online clothing retailers are for you. All stock a range of well-made, stylish and ethical clothes. Precise sizing charts make it easy to find the right size for you – and if it doesn't fit, or you don't like it, simply return it.



PHOTOGRAPH BY KATE ESHELBY

ecologist READER OFFER

New from the Fair Deal Trading Partnership

ETHICAL FAIR TRADE TRAINERS

Stylish, made to last and comfortable, Ethletic Trainers come in men's, women's and children's sizes. *Ecologist* readers can buy them for only £30 (£5 off the rrp).

Made with Forest Stewardship Council (FSC)-accredited natural rubber soles, for every pair made, a Fair Trade premium is paid that goes to support workers in Sialkot, Central Pakistan.

To take advantage of this readers offer, call 0870 766 5196, quoting 'Ecologist reader offer' and your shoe size (sizes available: 1 to 12).

This offer is valid until 30 June 2006. To see the full range of Fair Trade products, go to www.fairdealtrading.com



CLOTHING DESIGNERS

50/50

www.5050clothing.com

Enamore

www.enamore.co.uk

Junky Styling

www.junkystyling.co.uk

Keep and Share

www.keepandshare.co.uk

Natural Dye Company

www.naturaldyecompany.com

MEN & WOMEN'S CASUALWEAR

Bishopston Trad. Comp

www.bishopstontrading.co.uk

Green apple

www.the-green-apple.co.uk

Green Fibres

www.greenfibres.co.uk

Howies

www.howies.co.uk



Natural Store

www.thenaturalstore.co.uk

Pachacuti

www.pachacuti.co.uk

Romp

www.romp.uk.com

Sari

www.saricouture.com

Natural Collection

www.naturalcollection.com

People Tree

www.ptree.co.uk

Schmidt Natural Clothing

www.naturalclothing.co.uk

Terramar

www.terramar.co.uk

SLOGAN T-SHIRTS

Equop

www.equop.com

Funky Gandhi

www.funkygandhi.com

Icons Incorporated

www.icons-incorporated.com

Soliloquy Clothing

www.soliloquyclothing.com

THTC

www.thtc.co.uk

Tonic T-Shirts

www.tonictshirts.com

SHOES

Beyond skin

www.beyondskin.co.uk

Birkenstock

www.birkenstock.com

Black Spot Sneakers

www.adbusters.org

Fair Deal Trading

www.fairdealtrading.co.uk

Freerangers

www.freerangers.co.uk

SPORTSWEAR

Epona

www.eponasport.com

Gossypium

www.gossypium.co.uk

Zoozoo2

www.zoozoo2.com

Green Shoes

www.greenshoes.co.uk

Terraplana

www.terraplana.com

The Natural Shoe Store

www.thenaturalshoestore.com

Vegetarian Shoes

www.vegetarian-shoes.co.uk

LINGERIE

Greenknickers

www.greenknickers.org

Buttress and Snatch

www.buttressandsnatch.co.uk

ORGANIC JEANS

Hug

www.hug.co.uk

Kuyichi

www.kuyichi.com



ECOLOGIST ACTION

DIY STYLE

Get your local tailor working! Buy organic and naturally dyed fabrics from the companies listed below, and have your very own bespoke eco-clothes made in the style you want, with a perfect fit.

COTTON

Aurora Silk

www.aurorasilk.com

Green Fibres

www.greenfibres.co.uk

Peru Naturex

www.perunaturex.com

WOOL

Organic pure wool

www.organicpurewool.co.uk

Organic Wool Company

www.organicwool.co.uk

Isle of Mull Weavers

www.isleofmullweavers.co.uk

ACCESSORIES

BAGS

Design Africa

www.artworksforafrica.com

Ganesha

www.ganesha.co.uk

Matt and Nat

www.mattandnat.com

VoodooBlue

www.voodooBlue.co.uk

Smart Tart

www.smarttart.co.uk

Refab

www.refab.co.uk

Suitcase

www.suitcase-london.com

Tree 2 My Door

www.tree2mydoor.com

JEWELLERY

Jungleberry

www.jungleberry.co.uk

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- Organic blankets, bedlinens, towels & soft toys

Terramar organics
fair trade, organic
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kids tops
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and more...

custom printing | wholesale
info@terramar.co.uk

www.terramar.co.uk
enquiries and brochure 07929371684

MISSION THE MISSION THE

If you use modern cosmetics and bodycare products, then you are exposing yourself to harmful chemicals. On average we each use 9 different products, with over 120 unique ingredients, daily; 90 per cent of these have never been fully evaluated for safety. Your skin can't protect you from these. Individually and in combination most can quickly and easily penetrate the skin and be absorbed into your body where they are linked to a range of problems including cancer, birth defects and central nervous system damage.

THIS IS NOT ACCEPTABLE

We challenge the COSMETICS industry to make products with:

- No potential carcinogens, neurotoxins and reproductive toxins
- No petrochemicals
- No synthetic perfumes
- No synthetic colours
- Ingredients with full safety data
- Ingredient label on the product
- Internationally standardised ingredient names
- Packaging that minimises the need for preservatives
- Organic ingredients.

What we can do as consumers:

- Read and learn to understand the label
- Buy fewer products
- Use less of what we do buy
- Dilute
- Ignore label hype (eg 'scientifically proven', 'visible results in seven days')
- Make our own
- Report adverse effects to manufacturers
- Challenge stockists to sell safer products.

BODYCARE & COSMETICS



ecologist READER OFFER

Fabulous organic skincare from mybeingwell

mybeingwell was conceived as Verity Cunliffe helped her husband Jonathan rebuild his health, following his recovery from chronic fatigue syndrome. They looked at how to minimise their intake of potentially harmful toxins and discovered that even some of the most luxurious skincare products are not what they seem.

As a result, mybeingwell brings together the very best, natural cosmetics and organic skincare from all corners of the world, in one clean and simple online shop. Every single one of its beauty products is 100-per-cent free of petrochemicals, artificial colours, fragrances and preservatives. mybeingwell stocks Trevarno, Living Nature, Weleda, Mother Earth, Lavera, Aubrey Organics and much, much more.

MYBEINGWELL WOULD LIKE TO OFFER *Ecologist* readers a free **Organic Lip Balm stick** (15 ml) and a wonderful **Avocado and Tea Tree Soap** (75 g), **WORTH £5.10**, when they buy the fabulous **Organic Day Cream** or the soothing **Organic Aftershave Cream** (£12.50 each). The creams and the free gifts, all made by Cornwall-based Trevarno in its historic garden workshops, are rich in moisturising oils and antioxidants, and are suitable for all skin types.



To take advantage of this special offer, visit www.mybeingwell.com and enter promotional code 'ecofreebie' at the checkout. You can also order by phone on **01326 377 555** (offer valid until 12 June 2006).

mybeingwell
naturally organic

BODYCARE ESSENTIALS

ASPIRE TO LESS –The best way to ensure healthy skin is to maintain a healthy diet, get enough sleep and keep stress levels low. If you do buy products for your face or body, try to make sure they are based on natural ingredients. The companies listed below carry products that have not been tested on animals; they contain no parabens, no petrochemicals and no synthetic ingredients. Product lines include cosmetics, deodorants, men's products, skin, bath and body care.

Barefoot Botanicals
www.barefoot-botanicals.com
Earthbound Organics
www.earthbound.co.uk
My Being Well
www.mybeingwell.com

Pure Nuff Stuff
www.purenuffstuff.co.uk
The Organic Pharmacy
www.theorganicpharmacy.com

SANITARY PRODUCTS

Natracare
www.natracare.com
Menses
www.menses.co.uk
The Mooncup
www.mooncup.co.uk



ECOLOGIST ACTION

MAKE YOUR OWN

Everyone's skin is different, so why not make your own bodycare products and cosmetics at home to suit your needs? The websites listed below will help guide you through ingredients that work for your skin and hair type, and offer a range of ideas for customising your favourite natural scents.

Aromatic
www.aromatic.co.uk
Bay House Aromatics
www.bay-house.co.uk
Cosmetics at Home
www.cosmeticsathome.co.uk

New Directions
www.newdirectionsuk.com
The Soap Tub
www.meltsandpoursupplies.com

www.earthbound.co.uk

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HEALTH & HOMEOPATHY SPECIALISTS

Ainsworths
www.ainsworths.com
Helios Homeopathic Pharmacy
www.helios.co.uk
Optima
www.optimahealthcare.co.uk
Pure Potions
www.purepotions.co.uk
Revital
www.revital.com

The Organic Health Shop
www.baughdell.co.uk



Certified Organic Moisture!



Essential Care make a sumptuous range of Soil Association certified organic moisturisers. For maximum vitamin and mineral content they use cold-pressed organic plant oils – you can feel the difference! Try the 100% organic Calendula Balm with its therapeutic dose of healing calendula for “gardeners’ hands”, cracked fingers and the odd sore patch. Or Ultra Rich - as the name suggests, a great emollient – rich in soothing extra virgin olive oil and fair-trade shea butter - for very dry or easily irritated skin.

Essential Care products are hand-made in Suffolk by aromatherapist and herbalist, Margaret Weeds.
Tel: **01638 716 593** or visit www.essential-care.co.uk

Organic Ultra Rich: RRP £6.75 for 57g, Organic Calendula Balm: RRP £6.25 for 30g



MISSION THE MISSION THE

The amount of baby gear we purchase in the name of 'good' parenting- nappies, wipes, bottles, car seats, pushchairs, clothes, shoes, toys and other nursery items - is staggering. Given the ongoing expense of raising a child and the heavy competition that exists between different manufacturers for parents' custom, it's little wonder that many of the most common baby and child accessories have been made in sweatshops using chemicals that harm both our children's health and the environment.

THIS IS NOT ACCEPTABLE

We challenge the **BABY & CHILD** industry to make products with:

- No potential carcinogens, neurotoxins and reproductive toxins
- No artificial additives, colourings or perfumes
- No petrochemicals
- No synthetic fibres
- Minimal packaging
- Organic ingredients
- Stop marketing to children under 16 years old

What we can do as consumers

- Read and understand the label
- Buy fewer products
- Buy reusable products, eg cloth nappies
- Make our own, eg food
- Challenge stockists to sell safer products
- Support the small, independent and ethical producers and retailers in these listings.



BABY & CHILD

Why use disposables when cloth nappies are easy to use, easy to clean and best for your baby?



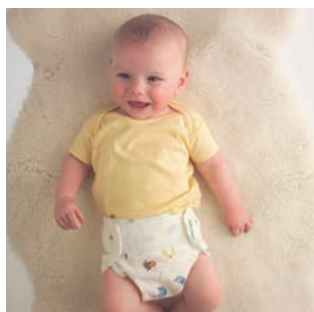
1 Lay open baby-shaped cotton nappy



2 Place flushable liner on top for easy removal of poo



3 Close using adjustable poppers



4 Add the waterproof wrap

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BREATHABLE Keeps bottoms cool & dry

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sleeping bags, toys, slings and more!

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BABY ESSENTIALS

Includes bedding, breastfeeding equipment, maternity clothing, nappies (both cloth and eco disposable), nursery furniture, slings, skin and body care and toys and games.

Born

www.borndirect.com

Green Baby

www.greenbaby.co.uk

Greenfibres

www.greenfibres.co.uk

Hejhog

www.hejhog.co.uk

Little Earthlings

www.littleearthlings.com

Natural Collection

www.naturalcollection.com

See Saw

www.seesawnappies.co.uk

Smile Child

www.smilechild.co.uk

CLOTHING

Baby Organics

www.babyorganics.co.uk

Bishopston Trading Company

www.bishopstontrading.co.uk

Gossypium

www.gossypium.co.uk

Huggababy

www.huggababy.co.uk

Natural Child

www.naturalchild.com

Organics for Kids

www.organicsforkids.com

Schmidt Natural Clothing

www.naturalclothing.co.uk

Tatty Bumpkin

www.tattybumpkin.com

TOYS & GAMES

Arujo

www.arujo.co.uk

Dawson & Son Wooden Toys

www.dawson-and-son.com

Escor Toys

www.escortoys.com

Gaia Distribution

www.gaiadistribution.com

Holz Toys

www.holz-toys.co.uk

Lanka Kade

www.lankakade.co.uk

Myriad

www.myriadonline.co.uk

Toyworm

www.toyworm.co.uk

Tulip Toys

www.tuliptoys.co.uk



SKIN & BODYCARE

Burt's Bees

www.myburtsbees.co.uk

Earth Friendly Baby

www.earth-friendly-baby.co.uk

Earth Mama Angel Baby

www.earthmamaangelbaby.com

CLOTH NAPPIES

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www.nappies.net

Snazzypants

www.snazzypants.co.uk

The Nappy Lady

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GIFTS

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Weleda

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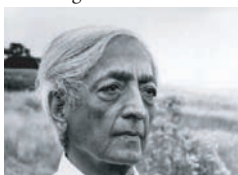
COURSES

The Krishnamurti Centre

"I think it is essential sometimes to go to retreat, to stop everything that you have been doing, to stop your beliefs and experiences completely, and look at them anew ... You would then let fresh air into your minds."

J. Krishnamurti (1895 - 1986)

In the peaceful countryside of southern Hampshire, the Krishnamurti Centre is a place of study for those interested in J. Krishnamurti's teachings. The Centre is open for **individual retreats** all year round, except during the month of January. Guests can arrange their own study programme, use the library, listen to Krishnamurti tapes or watch Krishnamurti video's, and have quiet time or go for walks.



Theme weekends and study retreats are also organised for those who would like to enquire together in an atmosphere of openness with like-minded people.

Fri. 24th - Wed. 29th March:

Love

Fri. 21st - Sun. 23rd April:

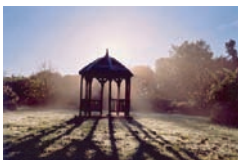
Enquiring into the nature of thought

Sat. 20th May:

An introduction to Krishnamurti's teachings



All meals at the Centre are vegetarian. You can also call us regarding monthly Krishnamurti video showings in London.



To find out more and for online bookings visit www.krishnamurticentre.org.uk or contact The Krishnamurti Centre, Brockwood Park, Bramdean, Hampshire, SO24 0LQ, Tel: +44 (0)1962 771 748 E-mail: info@krishnamurticentre.org.uk

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Founded in 1969 by J.Krishnamurti. Part of Krishnamurti Foundation Trust Registered Charity No. 312865

THE SUNTAN DIVERSION

BY EDWARD GOLDSMITH

Scientific research has just revealed that battery eggs are as good as free-range ones. Measurements published in *Nature* have shown that they only differ in their vitamin B12 content. Any difference in taste, we are assured, is without scientific basis and must therefore be purely imaginary.

This is a perfect illustration of both 'The Lamp Post Lark' and 'The Suntan Diversion' – associated variants of the same basic fallacy.

Let us start with 'The Lamp Post Lark'. It is a particularly dark night. A number of people are clustered round a lamp-post frantically searching for something on the pavement. 'What are you looking for?' asks a passer-by.

'My wallet,' answers a rather desperate searcher. 'Are you sure you lost it here?' asks the passer-by. 'No,' answers the searcher, 'but this is the only part of the street that is lit up.'

Our scientists proceed on precisely the same way. They have been taught to look at things that are measurable to the exclusion of those that are not. Hence, they pretend that the latter do not exist.

Anyone but a fool must realise that, if measurements have revealed that battery eggs are as good as free-range ones, then these measurements must be wrong. In the same way, if you introduce a stick into your petrol tank and find that it is empty, and you then get into your car, turn on the ignition, and lo-and-behold it runs perfectly smoothly, you do not conclude that your car has learned overnight to function without petrol. Instead, you will assume, quite rightly, that you didn't put the stick in far enough, or didn't look at it carefully. In other words, you are not going to accept the results obtained from a measurement if it is incompatible with all the knowledge you have built up on the subject.

This is precisely the case with the conclusion drawn from the measurements reported in *Nature*. They are incompatible with the information built into the human tasting process.

Let us consider this a little more closely. It is reasonable to suppose that, to an animal living in its natural environment, things that taste good are good. The mechanism of taste can only be regarded functionally as a device to enable animals, including man, to select the correct constituents of their diet. Through the functioning of this mechanism, dung beetles, fiddler crabs and also primitive people know what to eat and not to eat. None of them requires nutritionists to advise them on this score. It follows that there must be a vast amount of

information built into this mechanism – information which clearly reflects the experience of the species over many millions of years.

Why should we, the most sophisticated of creatures, have lost the ability to feed ourselves correctly? The answer, of course, is that this mechanism cannot work once our environment has been too radically modified, and no longer resembles that in which we have evolved. For instance, in the artificial conditions in which we live, we can only imperfectly distinguish between real food and its better imitations, and we possess no means whatsoever for detecting the presence in our food of contaminants of which we have had no evolutionary experience such as DDT, or radioisotopes. Our environment, in fact, has become counter-intuitive. That is why we need science to provide us with the information that we can no longer obtain by normal means.

It is my thesis that, even with the best possible science, we cannot adapt to a counter-intuitive environment, and, as it is, our science is far from being the best possible science.

'The Suntan Diversion' takes things a stage further. Its object is to divert attention from the important factors involved in a given situation, which are quite irrelevant to the situation at hand. We are deluded into accepting a particular thesis because we have been persuaded to judge it on the basis of totally false criteria.

The fact that cow's milk contains more protein than human milk is used to support the thesis that it must be better than a human mother's milk, but it ignores the fact that human babies at birth require less protein than do calves for the simple reason that they don't grow so quickly. On the other hand, more polyunsaturated fats are required in human milk to build up nerve tissue because a child's brain grows at birth much more quickly than does a calf's.

To take another example, Lord Zuckerman tells us that the seas are in excellent shape, since 'catches of fish have never been higher', thereby applying a totally false criterion for judging the health of a marine ecosystem. This can only be judged by its stability, which involves maintaining the requisite variety and number of trophic levels, and these will have the negative effect of reducing total production. Production is never higher, for instance, than before a population crash. And so it goes on.

It is by means of such expedients as 'The Lamp Post Lark' and 'The Suntan Diversion' that we are made to accept the false criteria applied by our experts to judge the functioning of the biosphere and to justify their increasingly counterproductive efforts to control it.



Edward Goldsmith
 Ecologist editorial, June 1974
www.edwardgoldsmith.org

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What is ecotricity?

See encarta.msn.com.

e-co-tric-i-ty

noun

ecofriendly electricity: electric energy produced by ecologically friendly means, for example, by solar power or wind power (informal)

[Late 20th century. A blend of ecological and electricity.]

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