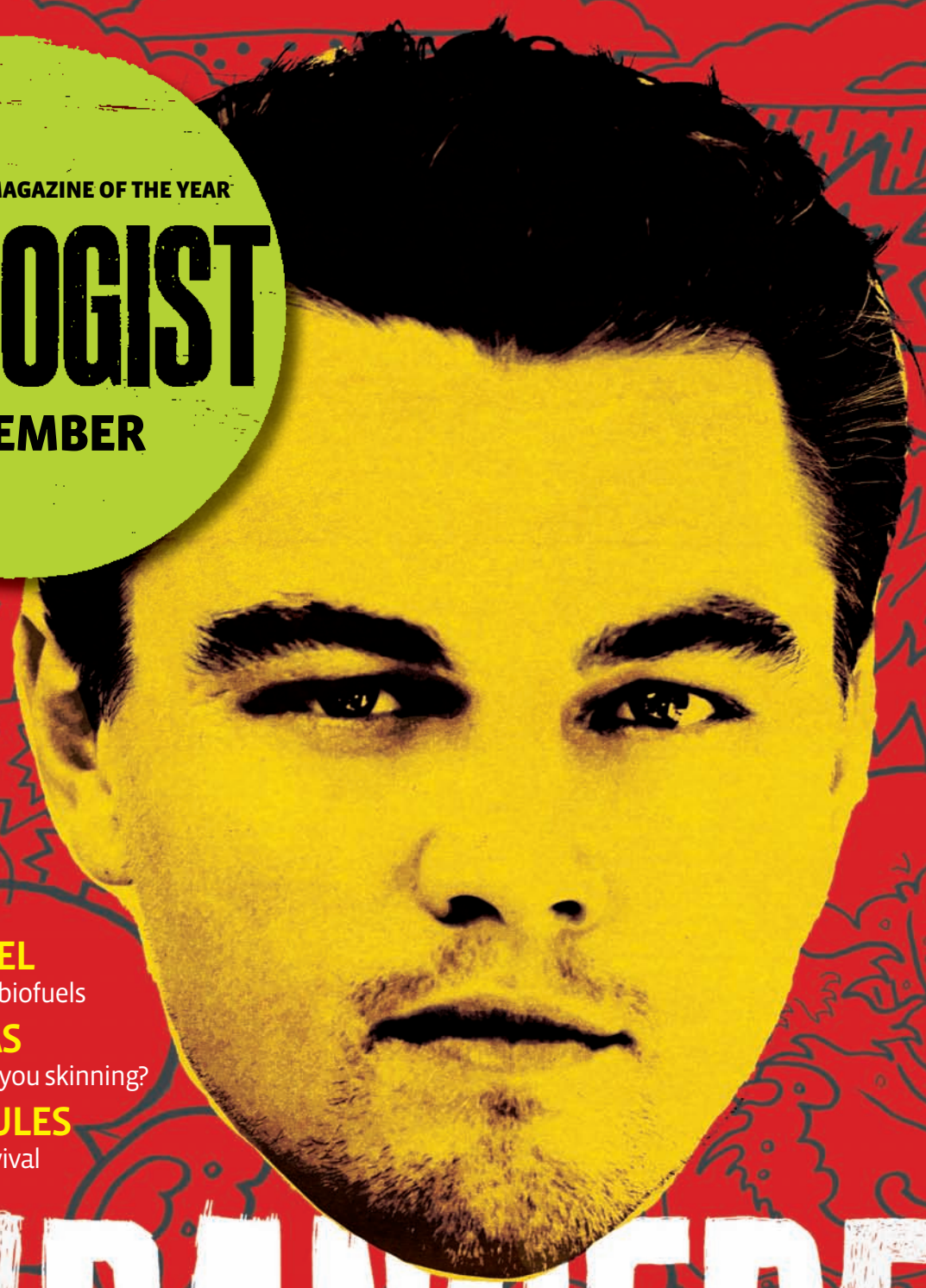
SEPTEMBER 2007

THE 11TH HOUR – LEO DICAPRIO • BETTER BANANAS • PLASTIC OCEANS • BLOOD DIESEL • DISAPPEARING INDIA • ECO-RELIGION • ANARCHY

ENVIRONMENTAL MAGAZINE OF THE YEAR

ECOLOGIST

SEPTEMBER



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Volume 37, Issue 7

FEATURES

COMMENTS

REGULARS

THE GREEN PAGES

network special

the advertisers say I'll soon be allowed to upgrade

Photograph REINOUT VAN DEN BERGH/ HOLLANDSE HOOGTE / EYEVINE

Editorial
Global boring

The media backlash is just beginning. Slowly, almost imperceptibly, global warming is morphing into 'global boring' and the potential consequences of such cavalier wordplay are immeasurable.

As the reality hits home that we have to stop doing things the 'normal' way and abandon our sense of superiority to the rest of the living planet, a wider backlash gains momentum. Maybe it's not a backlash against the fact of global warming *per se* but, instead, against the way this phenomenon is presented as a fad. 'Cutting your carbon footprint is the new black' suggests something temporary. That next month, or next year, some other jolly wheeze will sweep in to take its place, and we all can go back to a life dominated by regular lightbulbs, cheap flights to Spain, sweatshop T-shirts and high-performance cars.

The media, like business, loves novelty. The shift from reporting news responsibly to reporting it in a fashion-driven way is one of the saddest things I have witnessed. It makes for lazy journalists and a lazy public. Reported as it should be, the news would be a very different animal.

I am reminded of a comment by James Hansen, the NASA scientist who broke ranks and publicly exposed the Bush administration's efforts to stifle scientific evidence of the dangers of global warming in an effort to keep the public uninformed. Recently he opined that what we read in the mainstream media is at least three years behind the scientific data. Scientific journals are about one year behind, while the scientists actually doing the research are only about one month behind. They know what's going on, yet often are terrified to speak out about what they know ('reticent' is the word Hansen used – even he is inclined to be measured on occasion) because often, and especially these days, it is information that is at odds with mainstream beliefs.

Being fashionable, in whatever sense you use the word, is not about liberation, it's about the oppression of anything different. It takes a brave media to engage with those scientists at the fore, rather than just parroting what is said by the paid mouthpieces for vested interests.

The *Ecologist* has always aligned itself with those at the leading edge. This was made apparent to me in a humbling way two years ago when we published *The Doomsday Funbook*, a collection of essays, many of which were by the magazine's founder Edward Goldsmith. It was eye-opening to read again the impassioned, intelligent, courageous analyses and critiques of a world gone gaga over GM, nuclear power, economic growth, medical 'miracles' and the intoxicating milieu of corporate power, whilst ignoring the fallout of these things: the devastation caused by pollution, displacement of indigenous people, loss of culture and quality of life, the rape of the natural world. It takes a brave soul to stand up against the oppressive enthusiasms of popular culture.

Which brings us to this month's cover. Hot on the heels of the superficial, even suicidal, stupidity of Live Earth, a 'celebrity' cover – our first ever and possibly our last – may seem an odd choice.

But while most other celebrities are still talking about lightbulbs and how many squares of toilet tissue to use, Leonardo DiCaprio has done a very brave thing. He has chosen to align himself with the scientists, philosophers, activists and teachers on the front line. He's chosen to be the channel through which their ideas and views can be amplified. He's done it publicly and he's done it with great panache. He's put his face and his name to a documentary that could break all box office records for films of this type – or it could end his career. He's done it because, as he told the *Ecologist*, it needs to be done.

We respond to courage wherever we see it – in science, in the media, in everyday life and in celebrity – because courage is in short supply these days, because courage begets courage and because courage is a powerful force for change.

Pat

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AN OLD 'NEW' MOVEMENT

I enjoyed the article from Paul Hawken on the 'movement of movements' ('What do these people want?', July/August). With rising temperatures, a widening gap between rich and poor and threats to civil liberties, to name just a few, it is easy to get depressed about the chances of creating a more ecological and justice world. Social movements made up of invisible networks of activists are a creative response which must be celebrated, they are the antithesis to the increasingly spin-driven and shallow world of conventional politics.

The 'movement of movements' is something for all of us to get involved in; and as Hawken shows, it is international. But I do think that it is wrong for Paul Hawken to suggest that this movement is something new. For centuries, peasants have rebelled against land enclosure, workers have gone on strike and direct action has been used to protect the environment – indeed, green spaces in London, such as Hampstead Heath, only exist because of Victorian protest networks! The author Peter Gould covers this topic in his book *Early Green Politics* (Harvester, 1988), which looks at the period from 1880 to 1905.

I am also sure that these networks don't spring up automatically, as Hawken states. Leaflets have to be written and distributed, direct action tactics learnt and practised, legal support garnered and (these days) websites built. All of this involves the hard work of lots of enterprising individuals. There is a tendency to forget that the networks do best when they study the history of protest and learn from each other.

Dr Derek Wall
Windsor

GREENSTREAM, NOT MAINSTREAM

Paul Hawken's excellent article 'What do these people want?' (July/August) also posed the question 'And what do we call these people?' It's the same question often debated amongst those of us involved in ethical investment (itself an unsatisfactory term) since our customers are, in fact, 'these people' – ethical, environmental, socially responsible, animal welfare, humanitarian investors. Bit of a mouthful, aren't we?

A dozen years ago, to mark our tenth anniversary, we set up a competition to find a term that included all these strands of effort engaged in the common aim of building a better world. A panel of judges judged the best entry to be 'Just Investment'. I personally voted for 'Grethical'; as you might imagine, no-one else did and neither had legs.

In the ongoing discussions about the contrasts between the mainstream investor and the ethical investor I hit upon the term the 'Greenstream investor'. A term that doesn't just fit ethical investors, it also fits this 'movement of movements' as well. Particularly, it matches the fluid description of the 'movement of movements' offered by Pat Thomas in her editorial.

Think about it: we are a huge sub-culture that represents the flipside of the mainstream. We are taking responsibility for creating a better world, whilst the mainstream, insofar as it thinks of such things at all, is leaving it to the politicians. And in a 'Catch 22' situation, the politicians cannot move until the 'mainstream' electorate gives them permission!

Such Gordian knots are reckoned to need a sword to cut through. But the Greenstream flows over, under and around, finding its way by its habits, values, campaigns, lifestyle – and investments – to its sure but often unspoken aim of building a better world.

Instead of there being a High Road to a better world, there might be a Green Stream. Perhaps there's an *Ecologist* poll somewhere in there?

Geoff Griffiths
Managing Director
Barchester Green Investment

Ecologist poll

Is Brown green?

49 **per cent** of you said you would buy a 2p return flight to France. Mon Dieu! Shame on you!

BATTERED BEEKEEPERS

As a virgin beekeeper (my first season with bees), and just when I thought I could rely on the *Ecologist* for some hard-hitting but well-researched editorial, I read at first with excitement and then utter dismay, your article on 'Local Hero: Tony Spacey of Littleover Apiaries' (Green Pages, July/August).

A more considered and better researched article would, I hope, have at least shed a wider beam of light on the issues that were raised, and lessened the impact of the massive broadside aimed at the British Beekeepers Association (BBKA) and the British honey industry in general.

Tony Spacey is, of course, entitled to his opinion, but your magazine owes its readers some more careful editorial content if it is to be taken seriously and not simply become an undisciplined, one-dimensional rant, the content of which is best consigned to a bin.

The BBKA is largely comprised of amateur beekeepers and of course some of the points raised by Mr. Spacey do have some substance. As with all organisations, however, that is not the entire picture. Jeremy Smith should do himself a favour and take another look at this industry.
Paul Moore, by email

Green Pages editor Matilda Lee replies: One of the aims of the 'Local Hero' series in the Green Pages is to profile an example of 'best practice' in an environmentally-related industry. Tony Spacey, last month's 'hero', is proof that people should be judged not so much for what they say, as for what they do.

While neither the quality of his honey nor his beekeeping methods has come under attack, his views have. Could we have put the muzzle on, through selective editing of his controversial opinions, or even not printing the piece at all? Yes, but that would have been greenwash, and not 'balanced' journalism.

If presenting him as he is, proverbial warts and all, has led to ruffled feathers, then my only hope is that it results in raised beekeeping standards. Just as we value diversity in our animal and plant species so, too, should we fight against one-dimensional monoculture heroes.

ARE FRIENDS ELECTRIC?

I am a long-time subscriber to the *Ecologist* because I admire its fierce independence.

However, I am surprised at the single-minded way that you have been promoting Ecotricity, with no mention of other equally good green electricity suppliers, such as Good Energy.

You say that 'The *Ecologist* and Ecotricity have teamed up to make it as easy as possible...' Presumably this must mean that you receive funding from Ecotricity? Otherwise it seems strange to the reader that you only recommend this one supplier. The issue of 'ease' is not really relevant as all it requires to change suppliers is to pick up the phone.

Is this a case where you should either (a) being more transparent about your relationship with Ecotricity or (b) also recommend other equally good suppliers?
Peter Riding
Essex

***Ecologist* publisher Tyler Moorhead responds: We do not receive funding from Ecotricity. The companies who advertise or are promoted in any way in the *Ecologist* are companies we believe in and believe to be running responsible and sustainable businesses. However, there are occasionally areas in which there is just one company that the *Ecologist* would support and Ecotricity is one of those areas.**

Daily dilemmas

In each month's issue, we ask a common ethical question that many of us ponder in our day-to-day lives, and people can go to our website and offer their suggestions as to how to answer it. In a subsequent issue we will publish the most practical and engaging selections in the letters pages.

Should insurance premiums rise 10 per cent to subsidise flood plain development?

Go to **www.theecologist.org** to have your say.

AGENCY ANGST

An update and clarification on your last article ('The £1bn PCB question', July/August). The Environment Agency on June 29, 2007 reached an agreement with Solutia Inc. and Monsanto Company that Brofiscin Quarry will be added to the list of 'Legacy Sites' on Solutia's joint plan of reorganisation. Under this plan, Monsanto will take over from Solutia Inc and assume all environmental liabilities and bear responsibility for all environmental remediation projects (subject to defences to liability that Monsanto may have under otherwise applicable law).

The plan also provides for Monsanto's assumption of environmental liabilities in the United Kingdom (subject to retained defences) in connection with other currently unidentified sites in England and Wales that, like Brofiscin Quarry, may have been used as off-site chemical and waste deposit sites by Pharmacia Corporation.

In addition, a new detailed report into pollution impacts at Brofiscin Quarry, giving an understanding of the extent of the pollution migrating from the site into the water environment, is available on the Environment Agency's website.

The report brings together the findings of recent site investigations and earlier studies that confirm there is pollution of deep groundwater under the former limestone quarry. The contaminated groundwater poses no risk to drinking water supplies. Water quality standards in the nearby rivers and tributaries are also unaffected by the site.

Finally, in response to Jon Hughes (Letters, July/August), the Environment Agency wholeheartedly agrees that fines handed down to parties found guilty of major pollution incidents are generally far too low and do not begin to reflect the damage done to the environment. The Environment Agency continues to call on courts to impose fines that more adequately reflect the seriousness of pollution incidents.
Barbara Young
Chief Executive
Environment Agency

The editor replies: The increasingly bizarre saga of Brofiscin continues. See our update on page 12.

ERRATUM

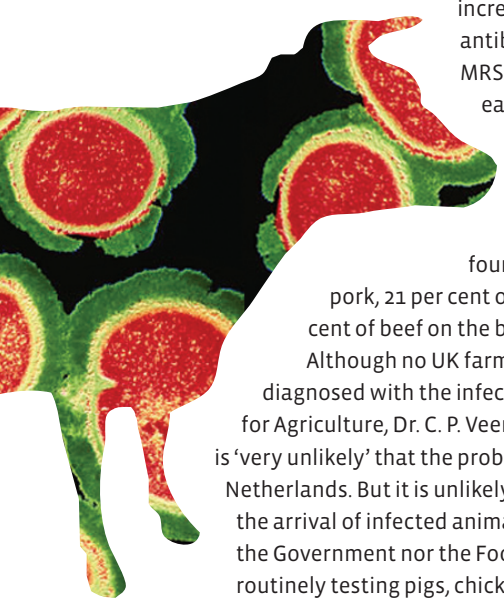
Jay Griffiths (*Songlines*, July/August 2007) is a writer and author. She is neither a journalist nor an 'adventurer' as the *Ecologist* described her.

HEALTH

SUPERBUG IN MEAT

MRSA FOUND TO BE IN THE FOOD CHAIN AND PETS

The routine use of antibiotics in livestock farming has led to an increase in the presence of the antibiotic-resistant superbug MRSA in animals, which can easily be passed to humans.



A report by the Soil Association points to research in the Netherlands, which found MRSA in 20 per cent of pork, 21 per cent of chicken and three per cent of beef on the butcher's slab.

Although no UK farm animal has yet been diagnosed with the infection, the Dutch Minister for Agriculture, Dr. C. P. Veerman, believes that it is 'very unlikely' that the problem is restricted to the Netherlands. But it is unlikely that we will be aware of the arrival of infected animals or meat because neither the Government nor the Food Standards Agency are routinely testing pigs, chickens or imported meat.

MRSA, previously thought to have been confined to hospital wards but increasingly found in household pets, was first discovered in livestock in 2004, during a routine check-up of a six-month old girl in the Netherlands. Not only was the girl carrying the disease but so were both her parents. The family lived on a pig farm. As a result, all pig and cattle farmers are now isolated on admission to any Dutch hospital.

Scientists and officials in the Netherlands point the finger squarely at the high levels of antibiotics needed in intensive farming. Antibiotic use increased in the country by some 29 per cent between 2003 and 2005, and remains high. The situation is similar in the UK, where efforts to reduce the use of antibiotics have been thwarted as vets prescribe the drugs 'prophylactically', to prevent any possible infection.

Richard Young, one of the authors of the report, pointed to a description of livestock-based MRSA as 'a new monster'. 'This new type of MRSA is spreading like wildfire across Europe, and we know it is transferring from farm animals to humans – with serious health implications,' he said.

The Soil Association is calling on the Government to urgently test all UK livestock and meat for MRSA, to sign up to an EU ban on direct-to-farmer advertising of antibiotics by drug companies and to ban the prophylactic use of antibiotics in farming.

The discovery has led to growing concern that the even more lethal superbug that is emerging in hospitals, *C.difficile*, might be following the same route.

ALLOTMENTS

'LAND-GRAB' STARTS

Plotholders in Eastleigh, Hampshire, have failed in their attempt to overturn a decision by new local government supremo Ruth Kelly to sell their allotments to developers.

Members of the Eastleigh and Bishopstoke Allotments Association were told by a judge that although he had 'great sympathy' with their pleas, there was 'no arguable case'.

Tim Holzer, Chairman of the Association, said that the decision sets a dangerous precedent for councils to land-grab allotments across the UK. 'The Government's recent introduction of measures to stop the worrying decline in allotment provision is proving to be meaningless rhetoric,' he said.

'Allotment holders around the country have good reason to wonder if their plot is next.'

INCINERATORS

FALLOUT ZONE

A new waste incinerator could create a 15-mile 'fallout zone' that would shorten people's lives by up to 12 years, according to a world authority. Dr Dick van Steenis, a retired GP and

toxicology expert, has spent many years researching the damage to public health caused by incinerators.

Studying the proposed 'energy from waste' incinerator for Newhaven in Sussex, van Steenis has warned that, if built, its emissions will cause cancer rates to soar – causing a 480 per cent rise in cases within 20 years. It will also lead to 'sky high' rates of infant mortality, asthma and autism, and heart attacks among the thousands of people living in a 15-mile radius of the plant.

Ninety such incinerators are currently planned across the UK to address the growing shortage of landfill space available.

In what is seen as a decision to fast-track the emergence of new super-incinerators, the European Commission recently classified this way of getting rid of waste as 'recycling'.

NUCLEAR

THORP GEARS UP

Thorp reprocessing plant at Sellafield is gearing up to re-start operations – almost three years after a wholesale collapse in safety procedures allowed 18,000 gallons of radioactive waste to become 'lost' within the plant.

The plant, designed to separate out uranium and plutonium from spent fuel so

GO FIGURE...

73 per cent of Americans back a $10-a-month eco-tax to underwrite renewable energy investment. **43** per cent of people would oppose a new Tesco store in their area. **20,700** tonnes – the weight of cut flowers imported to the UK from Africa in 2005, at a cost of **60,000** tonnes of CO_2. Outside of London, bus use in the UK has declined by **13** per cent since 1993. The cost of car travel has fallen by **10** per cent over the past **30** years, while the price of bus and train tickets has risen by more than **50** per cent. **$39** billion – the 'value', in terms of carbon price, of keeping Indonesia's peat bogs intact. Just over **50** per cent of the world's population now live in cities.

it can be reused, is undergoing what is 'virtually a trial period' after the Nuclear Installations Inspectorate gave consent for a phased re-start. Final consent is subject to performance over the next few weeks.

Kate Hudson, Chair of CND, said, 'How can we trust the organisation that allowed a leak of over 20 tons of plutonium to start this operation again?'

ORGANIC FOOD

BETTER FOR YOU

The results of a 10-year study show that organic food is better for you.

Research by scientists at the University of California found organic tomatoes to have twice as many flavonoid antioxidants as those grown conventionally. Flavonoids are linked to lower blood pressure and lower risk of heart disease and stroke.

'These findings confirm recent European research, which showed that organic tomatoes, peaches and processed apples all have higher nutritional quality than non-organic,' said Peter Melchett, policy director at the Soil Association.

It is believed that the higher levels of flavonoids is due to the absence of fertilisers in organically-grown tomatoes.

POPULATION

TWO-CHILD LIMIT

Governments may be forced to introduce compulsory limits on family size if urgent action is not taken to restrain population growth through voluntary family planning, according to a report from the Optimum Population Trust (OPT).

There is a vast, unmet need for contraception. Half of the 190 milion pregnancies worldwide

each year are unplanned and a quarter of these are aborted.

The report forecasts that by 2050, global population will have reached 9.2 billion – an increase of 2.7 billion on today – requiring the bio-capacity of two earths.

This will cause a 'Youthquake' with major social implications, warns the OPT report, 'not least the creation of a huge cohort of young urban males who through frustration and unemployment seek an outlet through violence.'

CONVENIENCE

REAL NAPPY BLOW

The Government is to scrap its £30 million a year Real Nappy Campaign, saying there is 'no significant difference between any of the environmental impacts of the disposable, home-use reusable and commercial laundry systems that were assessed'.

But Kay Wagland of the Women's Environmental Network (WEN) says that the decision is based on a flawed Environment Agency report from 2005. According to WEN, which was involved in the report, the Agency overestimated the number of cloth nappies needed; included figures for washing at 90°C and tumble drying, which modern cloth nappies do not require; and used price over emissions figures to calculate the energy consumed in the retail and transport of disposable nappies.

Supporters of reusable nappies worry that the negative publicity generated by the announcement could stifle a growing industry and the real opportunity to reduce landfill.

It is estimated that at least three billion disposable nappies are thrown away in the UK every year.

CONSULTATION

JUMPING THE GUN

Yet again a shadow has been cast over the value of consultation on the role of nuclear power in our future energy mix.

In February, Tony Blair responded to Greenpeace's legal victory in the High Court, which forced a renewed round of consultation on nuclear power, saying that 'this won't change the policy at all.'

Now, Gordon Brown has pre-empted the new consultation, by telling MPs that '...we have made the decision to continue with nuclear power.' On the same day, he also managed to jump the gun on the ongoing Planning White Paper consultation by saying that he would simply 'implement the recommendations in the Barker and Eddington reports to speed up the development of major infrastructure projects... and speed up planning generally.'

GREENWASH

FRIED AND TESTED

Walker's crisps has taken the unprecedented step of including the carbon footprint of its snack food on the packet. If you look closely you'll see a neat little 'C' highlighting the impact. So, we learn that to bring a 34.5g packet of crisps to the market leaves a carbon footprint of 75g; that's two tonnes of carbon for every tonne of crisps made. This, the company says, shows its commitment to being 'environmentally aware'.

GARDEN FRONT

More than 10 per cent of all UK schools have signed up to a project to teach children about vegetables and how to grow their own.

The programme, run by Duchy Originals and Garden Organic, has been taken up by 3,400 schools and takes children from sowing their first potatoes through to growing 'rare' varieties from seed libraries.

'Allowing children to grow their own food is a wonderful way to encourage them to become more experimental,' said Susan Kay-Williams of Garden Organic. 'Nothing tastes better than a veg you have grown yourself.'

For more information: www.schoolsorganic.net

SHOUT IT OUT

Join the 'Cut the Carbon March' at any point over its 1,000-mile route through the UK and help call on big companies and the Government to cut emissions.

The march ends outside the London Stock Exchange on 2 October, where you can tell the City to give up its carbon-intensive investments.

For the route, visit www.christianaid.org.uk

ENERGY

'OIL CRASH' JUST FIVE YEARS AWAY

PEAK OIL LOOMS FASTER THAN FEARED AS COUNTRIES REVEAL THE LEVELS OF RESERVES HAVE PREVIOUSLY BEEN INFLATED

In just 60 months, say experts, the world will run out of affordable oil. By 2012, oil production will be meeting only about three-quarters of consumer demand.

The Paris HQ of the International Energy Agency recently issued grim forecasts that the world's industrial civilization will soon be facing unprecedented shortages and massive price rises. Future production will be unable to meet relentlessly rising demand, especially from America, India and China.

Oil companies are blaming production problems, political crises, and lack of investment. However, the Emir of oil-rich Kuwait spoke recently to a secret Parliamentary meeting, where politicians learned that Kuwait's claims of vast stocks of un-pumped oil were an official illusion. The country's biggest field, which was said to have more than 100 billion barrels of oil left in it, actually had only 48 billion. Most would be both difficult and expensive to recover.

In nearby Saudi-Arabia, stories emerged that the largest oil-field had just 78 billion barrels left, not the previously claimed 150 billion. Reports now emerging in other oil-producing countries support claims among experts that the long-awaited 'Peak-oil' crunch – when demand outstrips new finds – has finally arrived.

The greatest fear, however, is that after 2012, remaining oil reserves will fall dramatically, and production will follow. By 2025, there might be a shortage of almost half of the oil needed.

Before then, in the next 60 months, the coming 'Oil Crunch' will inevitably lead to a severe global economic crisis. In 1973, and again, in 1979, Arab-Israeli Wars, and an almost total Arab oil-embargo both reduced oil deliveries to the West to a trickle, and tripled the price. That oil-shock began the long economic crisis that led to the grim Eighties, and Margaret Thatcher's hard-line economic policies. Experts now fear a repeat oil-shock, even more severe.

In Iran, oil shortages have led to forecourt battles for petrol as the Govenment restricts supply and has removed fuel subsidies.

SHOPPING

THE 'BIG' QUESTION

The US Federal Trade Commission blocked organic superstore Whole Foods from buying out its competitor, Wild Oats. The Commission argued that this would create a market monopoly in the organic foods sector.

During the ruling, evidence emerged that Whole Foods CEO, John Mackey, had been posing under a pseudonym in internet chat-rooms, attacking Wild Oats and praising Whole Foods, calling for the latter's domination of the sector. These blog postings were used by the FTC as evidence of hostile market tactics.

In a 40,000-word defence of his position, Mackey claims that 'competition with Whole Foods has never been greater than it is right now, and Wild Oats is only a relatively small part of that greater competition.'

CENSORSHIP

BURNING BOOKS

The US Environmental Protection Agency has begun to close its nationwide network of scientific libraries and destroying their contents.

As a result, scientists and members of the public are being denied access to vital historical data regarding the health effects of toxic subtances, records of environmental change over time and impacts on specific communities, among other issues.

The closures are blamed on budget cuts, which are going ahead despite the EPA's $20bn budget not being signed off by Congress and in the face of stiff

opposition from the Union of Concerned Scientists. To find out more and voice your concern, visit: www.ucsusa.org

ASPARTAME
UP A GUM TREE?

A 25-year-old New Zealander was left with cramps, palpitations, rashes, anxiety and depression after eating up to four packs of chewing gum every day.

Abigail Cormack's doctor, Penny Rowley, was at a loss to explain the symptoms and initially prescribed anti-inflammatories. But on hearing about Cormack's gum habit, Rowley suggested that the sweetener used in the gum might be causing the problems. The symptoms quickly disappeared when Cormack stopped chewing the gum.

Aspartame is metoabolised into aspartic acid, phenylalanine and methanol, all of which can have proven neurotoxic effects.

The New Zealand Food Safety Authority insists there is no evidence that high intakes of aspartame could be harmful.

GREENWASH
PLANE STUPID

'The 787 has become a large part of our commitment to help the environment,' said FirstChoice airlines, hailing their purchase of 12 new Boeing 787 Dreamliner aircraft.

Emitting 20 per cent less carbon dioxide than current engines, it amounts to the proverbial drop in the ocean as on current trends the number of planes in the sky will more than double to 27,307 over the next 18 years and their proportion of climate changing emissions – because of increased night flights – will rise even faster. *See Final Call, Ecologist July/August.*

NOW THAT'S... PROGRESS

1. Hens are more 'stressed' outdoors than in battery cages. So says Dr Jeff Downing. And his research? 'You can see it – a shadow comes over and they are completely startled.'

2. The Government has been criticised for not spending sufficient on space travel. The Commons Science and Technology Committee said £205 million is 'not enough'.

3. On learning that energy-saving bulbs save energy, would-be London Mayor Boris Johnson apparently bought two and told the shopkeeper, 'I think you are on to a winner here'.

4. Scientists are hoping to induce global warming on Mars, using concentrated greenhouse gases in an attempt to make the planet habitable.

ORGANIC FARMING
LOW YIELDS A MYTH

A study by scientists at the University of Michigan has concluded that organic farming can equal yields achieved by conventional farming in industrialised countries and outperform yields by as much as three times in the less-industrialised world.

The results were achieved using organic fertilisers – such as manure or green manure – and without turning more land over to food production.

'My hope is that we can finally put a nail in the coffin of the idea that you can't produce enough food through organic agriculture,' said Professor Ivette Perfecto, lead author of the research. She added that assuming the world would go hungry if forced to farm organically was 'ridiculous'.

MONSANTO
DIVIDE AND RULE

A farmer in the French town of Saint Dos near the Spanish border has seen his crop of organic corn wiped out with weedkiller, allegedly at the hands of neighbouring farmers engaged in a GM crop trial for Monsanto.

A vocal objector to genetic modification, dairy farmer Bernard Pouey had been subject to pressure from GM-crop farmers who wanted to buy his land. They reportedly offered him three times the value of his farm, in which his family has lived for generations, telling him 'this is your last chance'.

Shortly after he had refused to sell the farm, Pouey woke one morning to find that his four-acre organic corn crop (grown as feed for his cattle and three beehives) was withering under a red foam, which appeared to have been sprayed from the air. Tests on the foam are still ongoing.

Pouey had made it known that he intended to offer seeds from his corn to French GM-campaign group Bio Aquitaine to test for signs of cross contamination.

Local resident Carol Reid-Gaillard told the *Ecologist* that the presence of a nearby Monsanto chemical plant, which has reportedly bribed farmers in the mainly organic region to plant its MON810 GM maize by offering them free supplies of the herbicide 'RoundUp', was 'dividing the whole community'.

WATER BAN

San Francisco Mayor Gavin Newsom (pictured below) has banned bottled water for council employees, saying that it is expensive, polluting, and has no benefits over tap water.

Newsom has issued an executive order which prevents any department,

agency or contractor from using City funds to buy or serve bottled water or water from plastic tanks, when tap water is available.

The Mayor's decree described bottled water as 'often inferior to the quality of San Francisco's pristine tap water'.

SUN SHOWER

A Chinese farmer has built a solar water heater for his mother out of beer bottles and hosepipe.

Ma Yanjun tied 66 empty beer bottles to a board on the 'shower' roof and passed a hosepipe through them. The bottles trap the sun's heat, warming the water flowing through the pipe, giving enough hot water for all three of Ma's family to have a shower every day.

A very, very bad smell

Brofiscin stinks, as both a landfill site and environmental crime, and increasingly as a political scandal. Wearily **Jon Hughes** returns to the site where, 40 years ago, Monsanto dumped lethal chemical wastes that today no one wants to talk about or take full responsibility for…

Just when we thought it was safe… when we were assured that the Environment Agency were going to act to protect public health and welfare and the public purse, it proved, yet again, to be a false dawn. Instead it has been another month of lies, half-truths and misinformation, as documents obtained by the Ecologist reveal. These show that:

- The Environment Agency has lied about the conclusions of the long-awaited Atkins report into pollution at Brofiscin Quarry at Groesfaen in South Wales
- The Agency has painted a false picture about its standing in the US courts and entered into an out of court 'deal' with Solutia and Monsanto, leaving it open to charges of being complicit in a fraud on the court (see panel)
- The Rhondda Cynon Taf Borough Council (RCT) – which has joint responsibility for the site with the Agency, and the public health risks in particular – has suppressed vital documents, as they did in the Eighties when they granted planning permission for residential development adjacent to the Quarry
- There has been a wholesale abdication of responsibility by the Welsh Assembly Government (WAG), Secretary of State for Wales and Defra on the issue.

Meanwhile, by the day, the body of evidence linking the chemicals known to be in the quarry to neurological breakdown, autism, cancer and heart failure grows. Such chemicals bio-accumulate and cross the placenta, which means that future generations become increasingly at risk.

While there has been no apparent specific health study into the Groesfaen and RCT region the health census of 2001 records average life expectancy to be 10 years lower than most of the rest of Wales.

Atkins finally arrives

For the past year the Environment Agency has placed great store in a study it commissioned into pollution at Brofiscin from renowned environmental engineers, Atkins. The Agency has previously always maintained that this would allow it to identify what is in the quarry, and suggest a remediation plan, to determine who is responsible for the pollution, and form the basis on which it could pursue its claim against the main polluter, Monsanto, which is currently mired in the US Bankruptcy Courts over their environmental legacy liabilities (see panel).

This is simply untrue. This is not what Atkins was aked to do. The terms of reference restricted them to testing groundwater and surface water pollution on the site and in the immediate vicinity. To do this they sank seven boreholes that were monitored on a quarterly basis. One of these boreholes collapsed, and two others were not dug at all, palpably hampering the credibility of the panorama of results that Atkins has reported. At one monitoring site Atkins engineers were required to wear aspirators to protect themselves from fumes arising from the pit.

Consequently, we have learnt little new about the site in terms of what Atkins have found at the quarry except as to its geology. The results confirm what Douglas Gowan – the expert eyewitness the Agency and RCT have endeavoured to silence – has always said. Present are such compounds as PCBs, vinyl chloride, pentachlorophenol, styrene, potassium, naphthalene and benzene. In total Atkins has identified 67 serious pollution linkages (SPLs), some of which are present at 1000 times greater than water quality standards, and many more at 100 times greater. The aquifer below the quarry is poisoned, say Atkins, again confirming Gowan's long-standing evidence.

On July 3rd Monsanto's former physicist in the UK, Dr Herbert A Vodden admitted to BBC Newsnight that dioxins were present as well as a raft of products containing PCBs.

Atkins were not asked to look for dioxins, despite the Agency being advised to do so by Gowan; neither were they asked by RCT to investigate public health risks or airborne pollution; and they were not advised that their investigation was to be the basis on which the Agency intended to make its case in the US courts. The bottom line is that Atkins now says that more investigations in Brofiscin are required.

Agency hails 'safe' conclusion

The Atkins report was delayed five times. It was first due in February, according to statements made in the House of Lords by Lord Rooker, who is responsible for the Agency at Defra, but did not materialise until Thursday July 12. The Agency, however, received a 'draft' in late April. For two months it rested with officials there and at RCT.

The reason for this is given as being for 'quality assurance', whatever that may mean and whatever implications can be drawn from the fact that an independent consultants' report is given such scrutiny. The *Ecologist* has obtained a copy of the draft under Freedom of Information legislation and material differences between this and the published report are disturbing. Before being subject to 'quality assurance' the Atkins report stated (our empasis added) the following:

- 'Elevated concentrations of contaminants WERE identified within three surface waters that appear to have been impacted by contaminated groundwaters from the quarry'
- 'Remediation actions ARE required to prevent contaminants from entering ponded surface waters in Brofiscin Quarry and Brofiscin Quarry Stream, in the immediate environs of the site; and the Limestone Major Aquifer'
- 'The study has confirmed that Brofiscin Quarry IS causing ONGOING contamination of controlled waters in the Limestone Major Aquifer beneath the site, and SPLs ARE exceeding water quality standards'

By way of comparison, what was contained in the Executive Summary of the published report, reads: 'The study has confirmed that it is PROBABLE that Brofiscin Quarry is causing ongoing contamination of the controlled waters in the Limestone Major Aquifer beneath the site as PARTICULAR SPL

contaminants are exceeding relevant water quality safety standards. Furthermore there is evidence for pollution of Brofiscin Quarry stream and ponded surface waters WITHIN the quarry site.'

The 'quality assurance' also failed on another level. One startling error contained in the report confuses north and south. It has trenches dug in the quarry wall, and the contaminated water flowing south out of the quarry onto farmland. If this were the case the poisonous effluent would not have ever run north onto the neighbouring farmer Gwilym Miles' land and then overground into then into watercourses beyond. There is no farmland to the south, but an 87 metre wall of limestone and then houses. The Agency has acknowledged the error, but dismisses it as of no material importance.

Despite the fact that error still exists in the report, on the day it was officially received the Agency rushed out a press release to selected news organisations. The next day this formed the basis of reports posted on the online editions of both BBC News and *South Wales Echo*. This press release was a case of disingenuous and dangerous spin.

It stated that the Atkins report was a 'significant milestone, as it provides for the first time an understanding of the extent of the pollution migrating from the site into the water environment.' The statement continued: 'The contaminated groundwater is mainly contained deep within the limestone rock and poses no risk to drinking water supplies. Water quality standards in the nearby rivers and tributaries are also unaffected by the site.'

This is not what was stated in the first draft of the Atkins report. Water is certainly not contained in the Aquifer during heavy rainfall such as that experienced recently, and wholly distorts the 'published' conclusion of Atkins.

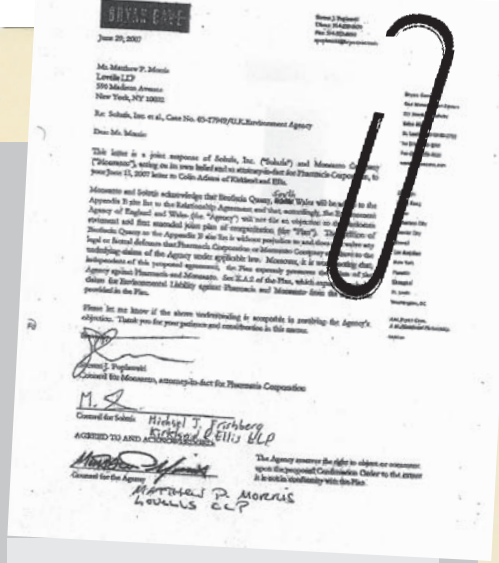
When pushed on the apparent contradictions the Agency has responded in cavalier and ignorant fashion. Both The Agency head in Wales Viscount Chris Mills and senior officer John Harrison have stated, to Julian Rosser at Wales FoE and to a reporter on the *South Wales Echo*, that the aquifer is of little concern because 'we don't use them in Wales, we've got enough rain'.

So much for the Agency's expressed concern about the environment. Furthermore a report from Cardiff City Council written only this year says that as a result of population growth over the next 20 years the limestone aquifers to the north west of the City will have to become an integral part of

Stop press: US court latest

As the *Ecologist* went to press with our last edition (July/August) the Agency assured us that it would meet a deadline set by the US bankruptcy court (USBC) to file an objection to Solutia's re-organisation plan, as it didn't include provision for any UK environmental liabilities. No objection was then filed. Instead the Agency came to an out of court settlement with Solutia and Monsanto, the detials of which are printed right. What materially changed over those four days is not clear, but once again the Agency rushed out a press release trumpeting the deal. This original statement was minus a hugely important caveat: 'Subject to defences to liability that Monsanto may have under otherwise applicable law' (until Gowan protested) . And it said, 'Under this plan Monsanto will take over from Solutia Inc and assume all environmental liabilities and bear responsibility for all environmental remediation projects.' As can be seen from the agreement text this press release is another distortion of the truth. As it states, this is a 'proposed' agreement not an agreement. Furthermore Brofiscin has been added to 'Schedule B'. Sites contained on this list are sites Monsanto believes it has legal defences for as to liability. There is no mention of assuming responsibility for all other sites, of which 11 are known.

Its existence has also created another problem. When the court reconvened to consider approval of the Solutia Disclosure Statement the deal was not introduced as an additional liability against either Solutia or Monsanto. Under these circumstances the Agency could well be accused of being complicit in a fraud against the court. As it is, as of August 2, the court has not approved any element of the reorganisation plan, leaving the Agency deal dead in the water. Where this leaves the Agency is not clear. They have not shared with the Ecologist any proof of claim being before the court and none exists in the court records. If they do now address the court to file a claim they will have to tell the Judge that they entered into a deal that was withheld from the court.



Agreement text

This letter is a joint response of Solutia, Inc. ("Solutia") and Monsanto Company ("Monsanto") acting on its own behalf and as attorney-in-fact for Pharmacia Corporation, to your June 15, 2007 letter to Colin Adams of Kirkland and Ellis. Monsanto and Solutia acknowledge their Brofiscin Quarry, South (handwritten correction) Wales will be added to the Appendix B site list to the Relationship Agreement and that, accordingly, the Environment Agency of England and Wales (the "Agency) will not file an objection to the disclosure statement and first amended joint plan of recognition (the "Plan"). The addition of Brofiscin Quarry to the Appendix B site list is without prejudice to and does not waive and legal or factual defenses that Pharmacia Corporation or Monsanto Company may have due to under-lying claims of the Agency under applicable law. Moreover, it is worth noting that, independent of this proposed agreement, the Plan expressly preserves the claims of the Agency against Pharmacia and Monsanto. See XA2 of the Plan, which expressly excludes claims for Environment Liability against Pharmacia and Monsanto from the injunction provided in the Plan. Please let me know if the above understanding is acceptable in resolving the Agency's objection.

the water supply for the region, and must be protected from harm.

Regardless, the Agency had got its message out: Brofiscin is safe. It was another full week before any news organisation – ourselves, the BBC, Newsnight, ITV, national and local newspapers – and interested parties – such as FoE – received the full Atkins report.

Safe for whom?

During July the *Ecologist* visited the Groesfaen and filled two bottles of water from Brofiscin Quarry Stream, where it flows onto Miles' land, and two bottles from the brook below the farm, which that stream water runs into. As this brook, and therefore these samples, pose – according to the Agency – 'no identifiable harm' or 'immediate danger' to public health, we took them to the Agency offices in Cardiff. Would any of the officers be prepared to drink it? Just days before Atkins was released, two Agency officers, John Harrison and Holly Noble, were at pains to proclaim the water 'safe' at two public meetings with Groesfaen villagers.

They refused. Why? Because when the Agency says 'safe' they now say they don't mean 'safe' in that way. The *Ecologist* is trying to determine what definition of 'safe' the Agency is using. Is it safe for children to play in the brook, or do gymkhana on the quarry floor, which is loose rubble and topsoil covering its 'evil' and 'dangerous' content?

Despite repeated visits by Agency staff and its consultants the quarry is an open field with an unlocked gate, so children may well play there. Safe for them? Safe for the bio-diversity and food chain, which is still an unaddressed issue, although 40 years ago it was mysterious livestock deaths that caused this problem to be first recognised? Then the Ministry of Agriculture confirmed finding 25ppm of PCBs in the liver of a bull calf on Miles' farm. Such claims also show the Agency to be extrapolating a conclusion that doesn't exist. As Atkins makes clear at the top of their report, 'other potential receptors, such as human health, are NOT (our emphasis) included'.

Missing data

Throughout our investigation the Agency has steadfastly maintained that Atkins would be the key to unlock their claim against the Monsanto. Yet again, this is not the case. For instance, none of the PCBs present have been identified by individual type – because Atkins weren't asked to do this – which would allow for the explicit identification of where they were manufactured, their toxicity, and thus risk to public health and the environment.

Throughout the report you can sense the frustration of Atkins over evident constraints placed on its investigation. This was an investigation seemingly not commissioned on the basis of what was required but on what could be achieved for £105,000 – the amount the WAG committed to it.

Far from enabling the Agency to pursue Monsanto and others for the cost of remediating the quarry, the Agency has been told that further investigations will be needed to identify the polluter and quantify the cost of remediation. In the meantime the Agency has rejected the following compelling evidence: Gowan's contemporaneous investigations and eyewitness testimony from the Sixties and Seventies, and associated experts' reports; Vodden's recent admission as to what is in the Quarry; confirmation of the February 1972 remediation plan by Tony Morgan, the former CEO of Purle Bros, Monsanto's former waste disposal contractor; and Monsanto's historical admissions that it knew landfilling PCBs was hazardous and recognition that they would have to accept liability for UK sites.

> 'There have been scores of investigations into Brofiscin – none has concluded it is safe'

Missing documents

A hallmark of the handling of Brofiscin by the Agency and RCT is that historical data is considered insignificant. Over a year ago in an email exchange between the authorities, discussing Gowan and his evidence in the most disparaging terms, the RCT public health chief Paul Mee asked, 'Why are we interested in events that occurred 40 years ago?'

In doing so they dismissed analysis by some of the world's leading authorities: Drs Chipperfield and Whitby at ICI Laboratories; Professor Clarke at London University; Professor Platonow at Guelph University in Canada; and Dr Gil Veith at the National Water Quality Laboratory in Duluth, USA.

And further analysis by the Government Chemist; consultants for the Welsh Office; and by the Ministry of Agriculture and Royal Veterinary College; and AF Regan, Dr Vodden and Dr JW Barrett at Monsanto. All received water samples taken by Gowan from Brofiscin between 1967-74, and all confirmed the presence of PCBs and other toxic contaminants, including dioxins.

While Atkins were under express instruction from the Agency to not consider Gowan's compelling evidence there are a number of other vital documents not referenced in their report. The most glaring omission is the Survey of Contaminated Land in Wales, which was commissioned by the Department of Environment in 1980, undertaken over 1981-2 and first published in 1984. This investigation was done by Atkins Research (a division of what is now Atkins).

At 38.2 this report states: 'Two waste tips, Brofiscin and Maendy, have both received hazardous wastes including PCBs. The disposal of such mobile non-degradable and carcinogenic chemicals in landfill sites on permeable limestone could present a hazard to local groundwaters.'

Also absent and seemingly withheld from Atkins is analysis undertaken on behalf of RCT, showing contaminants now found by Atkins as being in the environment, and the presence of PCBs. In 1987 public health officials found these reports so disturbing that they advocated that the proposed new residential development at Groesfaen be put on hold. In reports they described the landfill site as being 'evil smelling' and 'potentially dangerous'. These internal concerns were ignored, as were the findings of Atkins Research, and the residential development went ahead.

Political vacuum

Over the past 40 years there have been scores of investigations into Brofiscin Quarry. None has concluded that it is 'safe' in regard to public health and welfare, the environment or food chain. All have concluded more investigation is required, as the latest Atkins report does. Yet in the face of this evidence, the Agency and RCT repeatedly say Brofiscin poses no immediate threat to public health.

Faced with such intransigence the *Ecologist* contacted the Secretary of State for Wales Peter Hain. His office said this was a devolved responsibility and directed us to the Welsh Assembly. The environment minister at the Assembly is Jane Davidson. She is also the elected Assembly Member for the RCT

constituency, which includes Groesfaen and Brofiscin. As such she apparently now has a conflict of interest and can't comment. Ms Davidson's office directed us to the office of the first minister Rhodri Morgan, as under these circumstances such issues are delegated to him.

The Brofiscin saga was unknown to his office. This, despite the fact that Ms Davidson has been aware of the controversy surrounding the handling of the Brofiscin investigation by the Agency and RCT for many months. Furthermore the WAG has set aside £20m for the remediation of the quarry. At the same time, somewhat bafflingly, the former environment minister Carwyn Jones issued Cabinet statements saying the area was safe and no threat to public health and that there were no pollution linkages. There are over 67, according to Atkins.

Morgan's office also explained that while the WAG had some authority over the Environment Agency Wales this sounded like an issue that was outside its remit. As a result the Environment Agency UK would be directing the case, which means the executive powers lie with Whitehall. Defra is the responsible body. We went to Defra. Defra issued a statement telling us Brofiscin is the responsibility for the Welsh Assembly and Environment Agency Wales.

If it's this hard for a journalist with privileged access to determine the relevant person, body or authority responsible for protecting the public interest then what hope is there for a member of the public?

Brofiscin is an issue with national and international ramifications – there are at least 11 known sites where Monsanto dumped such lethal wastes in Wales and England and others in Europe – and Defra disowns it. The Secretary of State says he is prevented from becoming involved. The authorities that should be taking a lead have no hierarchy and in the case of RCT have knowingly sat on important evidence and ignored other presented by Gowan's assiduous research. It's anarchy. Power is neither devolved nor accessible – it's confounding and deliberately complex. A complex system always works in favour of big business as they always have access to the relevant expertise.

This is astonishing as the cost of investigating and remediating Brofisicin and potentially 11 other sites could, with tort claims from victims, top £1bn. The Agency disparages this figure, yet it is based on the cost of addressing the situation in Anniston, Alabamah, where Monsanto also landfilled PCBs knowing them to be a hazard to public health. To date the company has paid out $1bn dollars for remediation and in settlement of civil actions by victims of the pollution, and more cases are outstanding.

The Countess Mar

Throughout Gowan's ordeal the only politician to address the issue has been the peer Countess Mar, who previously was responsible for getting Organophosphates recognised as being a poison and withdrawn from general public use. Unfortunately the Countess was recently taken ill but she has made the content of private discussions held with Lord Rooker at Defra and Viscount Mills known to the *Ecologist*. Angered at being 'misled' over the actions of the Agency and Defra in relation to Brofiscin she also let it be known that she would be raising these serious matters from the floor of the House of Lords come October, when recess is over.

Unacceptable failures

The truth about Brofiscin remains buried because no one has been commissioned to find the truth. It is unacceptable to the victims and potential victims to live under the long shadow of being constantly told for 40 years more investigation is needed.

The *Ecologist* calls for urgent intervention. We want an independent judge, acceptable to the Agency and Countess Mar, to be appointed to assess the paperwork and evidence pertaining to the USBC hearings, and for any actions determined therein to be acted upon. We want that Judge to hear from Gowan, and review his data and proofs.

We also call for an urgent re-investigation of the site to properly assess the public health risks, airborne pollution and cancer-causing dioxins that are known to be present, and for it to type the PCBs found.

The Agency employs 13,000 people and costs the UK taxpayer £1bn a year. It has repeatedly been charged and found guilty of indolence in several parliamentary reports over the past five years. Yet last month Baroness Young received a £26,000 bonus on top of her £163,000 salary. Viscount Mills and other executives received bonuses of 10 per cent.

That money could be used in many better ways. For instance, as a central fund on which the copious community groups that rise up against proposed developments, or have concerns about such things as landfill sites and incinerators to draw on and commission their own independent investigations.

Jon Hughes sampling at Brofiscin

At the very least, the Agency should be broken in two so that the investigation and enforcement division is wholly separate from its technical and flood and business remit.

Since becoming responsible for Brofiscin in 2005 the Agency, under the leadership of Baronness Young and Viscount Mills, has wilfully ignored evidence; seemingly endeavoured to provoke Gowan into walking away, treating him with breathtaking disrespect as FOI documents have revealed; endeavoured to smear the *Ecologist* with lies, such as saying that we made up a police investigation where none existed; failed to ask common-sense questions; either allowed itself to be misled by RCT, or simply not bothered to put in the legwork; acted in ignorance as to what other authorities such as Cardiff City Council are doing; and continually put out sloppy and false information, such as saying it filed legal documents in the USA on major public holiday days (Memorial Day).

The Agency confronted with the biggest environmental crime to be perpetrated in the UK has been found disgracefully wanting and needs root and branch reform if not disbanding.

• *In an open letter to the Ecologist, Douglas Gowan has detailed a two-year smear campaign waged against him in the Seventies by Monsanto, details of which were known to the Agency and were only revealed when Gowan submitted an FoI request. Who was it protecting? Visit www.theecologist.org*

Correction

In our May edition, in the article *Burying The Truth*, we incorrectly stated that Mr Richard Hawkins had personally served papers on Mr Douglas Gowan at his London home. We accept that this is not case and apologise for any distress caused.

HEALTH

Alzheimer's – the case for prevention

Are we losing our minds? And could something as simple and inexpensive as diet and lifestyle prevent it from happening? Yes, says **Oliver Tickell**

Alzheimer's and other dementias are dreadful diseases. They are also expensive. Just how expensive was revealed by the Alzheimer's Society in its *Dementia UK* report in February. The cost to the UK is £17 billion a year, or around £25,000 a year for each of the 700,000 sufferers of late-onset dementia. The number of sufferers is projected to rise: to 940,110 by 2021, and to 1,735,087 by 2051.

In response to the looming crisis, the Society makes seven sound recommendations. But something essential is missing: prevention. There are many cost-effective, scientifically robust steps that could dramatically reduce the incidence of dementia and enable elderly people to retain their cognitive faculties, especially in the areas of diet, nutrition and lifestyle. Applied systematically, these measures have the potential to transform the entire Alzheimer's risk landscape.

The brain is a fatty organ, and works best when fed the right kinds of oil and fat. It responds especially badly to the industrial trans fats found principally in hydrogenated oil. A 2003 study in the *Archives of Neurology*, which surveyed 815 people over 65, found that the 20 per cent with the highest trans fat consumption were four times more likely to develop Alzheimer's than the 20 per cent with the lowest trans fat consumption.

The same study found that the 20 per cent with the lowest consumption of polyunsaturated vegetable oils were five times likelier to develop Alzheimer's than the 20 per cent with the highest consumption. Combine these effects, and someone eating a diet high in trans fat and low in polyunsaturated fat is nine times more susceptible to Alzheimer's than someone eating a low trans fat, high polyunsaturated fat diet.

A 1999 study in the journal *Neurology* is one of many to show the benefit of mono-unsaturated oil, especially the oleic acid in olive oil. It suggests that, as people age, their brain chemistry may need more monounsaturated fat to prevent degeneration: 'High MUFA [monounsaturated fatty acid] intake *per se* could suggest preservation of cognitive functions in healthy elderly people. This effect could be related to the role of fatty acids in maintaining the structural integrity of neuronal membranes.'

Omega-3 oils, especially the long-chain EPA and DHA essential fatty acids, are a prerequisite of a healthy brain function and have successfully treated depression, attention deficit hyperactivity disorder (ADHD) and other mental conditions. Evidence published in the *Journal of Neuroscience* in 2005 shows that these oils reduce build-up of the amyloid plaque linked with Alzheimer's in mice, and may also help humans.

This supposition was supported in an October 2006 study in the *Archives of Neurology*. The one-year study of 204 Alzheimer's sufferers showed that the decline of very early-stage patients was significantly slowed by taking Omega-3 supplements. 'It seems that not only is DHA an important structural component of brain cells but DHA and its metabolites seem to exert a preventive effect against development of brain cell death,' commented the authors. 'These positive findings now indicate that early treatment with Omega 3 can help to reduce memory decline in patients experiencing the early symptoms of Alzheimer's.'

> The greatest disgrace is that the growing compendium of medical knowledge has had no policy response from the Government

The risk of dementia is strongly correlated with higher levels of homocysteine – a rogue amino acid associated with low levels of folic acid and vitamin B12 – as noted in the *American Journal of Clinical Nutrition*, February 2007. Treatment with B12 is protective: 'Higher plasma vitamin B12 may reduce the risk of homocysteine-associated dementia or CIND (cognitive impairment without dementia).'

Vitamin D also protects against dementia, as shown in a 2006 study of 80 participants, half with mild Alzheimer's and half without. It concluded: 'Vitamin D deficiency was associated with low mood and with impairment on two of four measures of cognitive performance.'

Protection is also conferred by the polyphenol antioxidants in fruit and vegetables, as shown in a 2006 paper in the *American Journal of Medicine*, based on a study of 1,836 Japanese Americans. Those who drank juice at least thrice weekly were a quarter as likely to contract Alzheimer's as those who drank juice less than once a week: 'Fruit and vegetable juices may play an important role in delaying the onset of Alzheimer's disease, particularly among those who are at high risk of the disease.'

Turmeric, the base spice of every curry, is strongly protective. It is rich in the oily chemical curcumin, which triggers our defence mechanisms against free radicals, a cause of cellular damage and a key part of the ageing process. There's a host of evidence for curcumin's benefits, not just in Alzheimer's but in a broad range of pathologies from Crohn's disease to psoriasis. This is supported by the low incidence of Alzheimer's in India. One 2001 study in *Neurology* of a rural population at Ballabgarh, India, found a 0.3 per cent incidence, 'among the lowest ever reported' –and roughly a quarter of that of a reference US population.

The same dietary changes that reduce the risk of Alzheimer's would also strongly benefit cardiovascular health, reducing heart disease and stroke. Mental and cardiovascular health are strongly correlated, as shown by a 21-year study of 1,500 Finns by Miia Kivipelto of the Karolinska Institute, Stockholm. 'Midlife obesity, high total cholesterol level, and high systolic blood pressure were all significant risk factors for dementia', each doubling the risk, 'and they increased the risk additively', so that people with all three risk factors were 6.2 times more likely to succumb to dementia.

Another vital dementia-prevention strategy is to stay lively and mentally active. In June 2003 the *New England Journal of Medicine* published a study of 269 healthy adults between 75 and 85 over a 21-year period, which found

that 'reading, playing board games, playing musical instruments, and dancing were associated with a reduced risk of dementia' – a 75 per cent reduced risk, for those who were most mentally active. 'It seems that remaining mentally agile makes the brain more healthy and more likely to resist illness, just as physical exercise can protect the body from disease,' said lead author Dr Joe Verghese. Numerous other studies have confirmed these findings.

Loneliness is another important factor, as a study by Professor Robert Wilson, professor of neuropsychology at Rush University Medical Centre, revealed in February 2007. His study of 823 older people in the Chicago area found that the risk of Alzheimer's 'was more than doubled in lonely persons' compared with those who were not lonely. 'Loneliness was associated with lower level of cognition at baseline and with more rapid cognitive decline during follow-up,' his team also found.

In recent months the Alzheimer's Society has accepted the need to assess the potential benefits of low-cost preventative measures. But the vast majority of its efforts are still aimed at securing drug therapies (many of dubious efficacy and with undesirable side effects) and adequate care for sufferers. Disproportionate medical research funding is also applied to patentable genetic technologies such as the role of inherited genetic predispositions, and the use of genetically modified cell transplants to produce Nerve Growth Factor.

But the greatest disgrace is that the growing compendium of medical knowledge about diet, nutrition, lifestyle and dementia has produced no policy response from the Government. It is hard not to question whether it suits the Government to have the elderly population die relatively young. All the measures that would slow or prevent the onset of dementias would also extend life, especially through improved cardiovascular health, and thus increase pension, benefit, housing and other health costs.

But with the cost of Alzheimer's and other dementias projected to rise to alarming levels in the absence of preventative action, a rethink should (sooner or later) be on the way. Meanwhile, all of us can try, in our own lifestyles, to stay out of the dementia danger zone. E

Oliver Tickell is a writer and campaigner on health and environmental issues. He is the founder of the tfX campaign against trans fats (www.tfx.org.uk) and architect of the Kyoto2 proposals for an effective climate protocol (www.kyoto2.org).

MAKING DO

Too many bags

It seems to be the norm in this country to be staunchly anti-American, and I am not entirely innocent of this. But, having spent a lot of time there in the past 10 years, and always seeking out an alternative to the tourist-brochure notion of the place, I have been in contact with people who do not fit into any of our narrow stereotypes.

A prime example is the magnificent work of 'Full Impact Defense', a women's self-defence training system I was involved with a few years ago. I spent time with men whose profession it is to don state-of-the-art protective gear and mock-assault women – only to be kicked, punched and beaten – for six hours a day. That takes some selfless dedication and an amazing insight into the darker areas of relations between the genders. Going in America for nearly 30 years, it has only just been introduced in this country, in Bristol.

It was only after I decided to take a year off consuming that I discovered thousands of people all over America were already doing it, and had been doing it for ages. There is a book by American writer Judith Levine called *Not Buying It* (I borrowed it from the library), where a New York based shopaholic stops buying new stuff for a year. There was me thinking I had been original, but she did it way back, saved more than $8,000 and paid off her debts.

I think her achievement was greater than mine because she lived through shopping. Indeed, it almost defined who she was: she was, like a 1980s bumper sticker used to proudly state, 'born to shop'.

Until her year of not buying anything new, Levine had always agreed with the ludicrous phrase I have heard many intelligent women use: 'You can never have too many bags or shoes, darling.' Wait a minute, yes you can, you can have way too many. Don't you understand that this is just the phrase the fashion industry want you to use, and which is meant to make you feel clever and decadent and sexy?

Having said that, I am a self-confessed sock obsessive, so when I decided (for a reason I no longer recall) not to buy anything new for one year, I was very well stocked. Nine months on, I am beginning to run low, and it's out with my sewing box to try to stitch them together for a little longer.

Likewise, if I boasted, 'You can never have too many flat-panel computers and external hard drives,' how nerdy and sad would that be? I am glad you can't see me in my office, with my 40-inch screen and terabyte of external storage spinning away beside me – but never mind, I bought those several years ago.

So, I have found, there are Americans who are supremely aware of the pitfalls of unthinking consumerism, people who are able to counter the arguments that making do doesn't make any difference. As for the people who've slyly questioned my motives, tried to catch me out and gently put me down by saying that what I am doing won't make any difference – I now realise they're only doing this because I have made them slightly uncomfortable. It is so in our nature to crow about our purchases, to show our friends what we've just bought, be it shoes or flat-screen monitors. If you haven't bought anything for months, there is almost nothing to say.

> It is so in our nature to crow about our purchases that if you haven't bought anything for months there's almost nothing to say

These days, I am unusually quiet. E

Robert Llewellyn is an author, actor and television presenter.

MEDIA

Here is the news

Why, asks **Michael Bugeja**, is the news media so afraid to face the truth about itself?

Keats wrote that beauty is truth, and truth beauty, and that is all we know on earth and need to know. Then again, he died at 25 and writ his name on water. I'm 55 and write on liquid crystal displays.

Truth is supposed to set you free and beauty, take your breath away; but ugly truth paralyses like apneoa: you forget to breathe.

I confronted an ugly truth a couple of months ago when NBC television reported that it would pay Paris Hilton $1 million to learn about her jailhouse experience. Caught driving with a suspended licence while on probation for drunk driving, she wept for her mother when led to her cell but emerged, she claimed, with new insight into the human condition.

Paris Hilton resurrects so many clichés, including beauty being only skin deep. These days in news, truth is skin deep, too. To gauge how much, do a Google search of 'Paris, France' vs. 'Paris Hilton' and count the hits, especially in the 'News' tab.

The continuing focus on Hilton, the oxymoronic 'reality television' star, has reached pandemic proportions – so much so, that *The Houston Chronicle* used this headline on a political column about the romantic woes of socialist (not socialite) Ségolène Royal in its 19 June 2007 edition – 'Paris (France, not Hilton) and great summer viewing'.

The spotlight on 'soft news' is troubling enough when harder, uglier stories need to be told. But what passes now for truth as well as beauty also may explain our general ignorance about all we need to know on earth.

Realising that has made me question my life's work as a journalist. We're paying Paris Hilton for news, enriching an heiress for her tales of life behind bars, *because of bars*.

Worse, the audience acknowledges its voyeuristic tendencies and doesn't seem to care that journalism has sold its soul to a socialite and, in the process, lost its zeal, its intelligence and, perhaps most importantly, its courage.

How did we get to this low point in media history? Money, as always, is at the root. In seducing members of the audience, asking via the internet what they wanted rather than needed to know, and then delivering that replete with ads, *ad nauseam*, media giants learned that fun is cheaper than fact and could be aligned with a target market.

Why finance news bureaus around the world when nobody seems to care about the world?

Long ago, I worked for a worldwide wire service, United Press International (UPI), whose reporters included one-time White House bureau chief Helen Thomas and combat reporter Kate Webb.

Helen has seen her share of ugly truths and everything she feared about government has come to pass, from war to global warming. She will be 87 next month; still she perseveres, 'holding the banner on honor' and writing about injustice in the world.

Few people any more recall the saga of Kate Webb during the Vietnam War. And yet Kate, who died earlier this year, was a role model for many of my generation. She was believed captured and killed in Cambodia, only to emerge to write her truths in words that still haunt me. One of her leads echoes more of Mary Shelley than Keats: 'It was like a butcher shop in Eden, beautiful but ghastly.'

> Journalism has sold its soul to a socialite and, in the process, lost its zeal, its intelligence and, most importantly, its courage

I reported for UPI in the 1970s when media helped end the US-Vietnam War and *The Washington Post* exposed the ugly truth about Richard Nixon. I investigated banks and nursing homes and covered riots in prisons and substandard housing on Indian reservations, along with natural and man-made disasters, such as floods and near-extinction of the eagle thanks to man's carelessness.

In those days words had the power to topple presidents, stop wars, enforce laws, expose fraud, save lives and, on occasion, even save entire species.

I saw beauty in words, in truth. So much so, that I would leave UPI and profess that truth wherever I could, teaching thousands of aspiring journalists how to afflict the comfortable and comfort the afflicted.

Then the comfortable bought the franchise, and it's been a party ever since.

In the December 2006 issue of the *Ecologist*, I wrote about 'The Electric Cabaret', recounting how society was ignoring its own decline and instead amusing itself on demand with cell phones, iPods and other gizmos. Shortly after that article appeared, I gave a speech about the state of the news media.

In 2003, I noted, top stories were the war in Iraq, the explosion of the Space Shuttle Columbia, the sex scandal of entertainer Michael Jackson and the murder of a pregnant woman, Lacy Peterson, in California. The television talent show *American Idol* was the most popular, and Paris Hilton and Britney Spears were the most sought-after celebrities. *Time* magazine's 'Person of the Year' was 'The American Soldier'.

Things haven't changed that much. In 2006, we were still dealing with the Iraq War, *American Idol*, Britney Spears and Paris Hilton. NASA was in the news – with astronauts gone wild in adulterous affairs. *Time*'s 'Person of the Year' was 'You' in a tube, inspired by the $1.65 billion sale of YouTube to search engine Google.

'The best is yet to come in 2007,' I prophesied. 'Top stories will be, let's see... the Iraq War, a Presidential election whose outcome will be determined by YouTube or blog... replete with nauseating follow-ups on Paris Hilton and Britney Spears, punctuated by scandals stereotyping athletes, or beautiful women murdered or gone missing in exotic places.'

All this has come to pass; and it's been much the same in the UK. In 2003 and 2006, the Iraq War topped the news. Paris Hilton and Britney Spears ranked fourth and seventh, respectively, in the BBC's top entertainment stories last year. Brits still obsess over Princess Di, fuelled by the disclosure that Camilla Parker-Bowles never wanted to marry Prince Charles.

How do we end the 24/7 news cycle of

skin-deep beauty and surface truths? How do we face the truths of our lives, that what we perceive as ugly – that paralysing apneoa of recognition – says all we need to know about where society has faltered?

During such moments, I draw strength from Kate Webb. In one of her last interviews (she died on 13 May 2007, aged 64), she confided to me that in matters of conscience, as of heart, there are no boundaries or overriding principles. 'You come up with your own solution... then live up to that in your actions.'

That remains the key to many of our social ills, in our own lives and in the news media. Certainly, we need more courageous journalists to commit to truth and fight injustice. But we also need an audience that understands the price of admission in Disney's new media amusement park.

These days it barely raises an eyebrow that Disney – a company whose brand is a cartoon mouse – is one of a handful of conglomerates controlling global media, along with the likes of Time Warner, Viacom, Bertelsmann, General Electric and Murdoch's News Corporation.

We live in their mediated world where story boards resolve problems in the allotted time frames. Life doesn't follow art in an artless, ugly world. If it did, I'd now be quoting Keats, who, according to literary legend, died because of a bad review – 'snuffed out by an article', as Byron put it – and who believed the fiercest hell was failure in a great endeavour.

Our life work may seem a waste when, like Keats, we invest in outcomes rather than in actions. Ugly truth ferments and occasionally transforms society, with those responsible long gone without recognition, like Kate Webb, whose byline was writ on the world and changed the world.

During her captivity in Cambodia, when we thought she was dead, she had a moment of clarity, she told me, during an interrogation. She credited that moment as helping to secure her release. 'The old man, you know, I looked at his face and he was tired and sick. I said, "You're an officer doing your job, right? Well, I'm a journalist doing my job".'

If more journalists did their job as Kate did, we'd be released, too, from our own bemused captivity. Until then, our yardstick is the conscience and whether we honoured it. Only then can the ugly metamorphose again into beauty, if not in society, then inside ourselves. E

Michael Bugeja is a journalist, author and educator.

If I...

...were in charge of the UK's pesticide policy

says **Georgina Downs**, I'd make the protection of public health the overriding priority

In a speech last year the former Prime Minister Tony Blair said that people must take more responsibility for their health. However, there are many things where the responsibility for public health lies directly with the Government and completely out of an individual's control.

For more than 23 years my family and I have lived next to crop fields that are regularly sprayed with toxic pesticides. Six years ago, after examining the Government's pesticides policy, I discovered that there has been (and continues to be) an inherent fundamental failure at all levels to protect rural residents and communities from exposure to pesticides.

The current method of assessing the risks to public health from crop-spraying is based on the model of a 'bystander', which assumes that there will be only occasional, short-term exposure (a few minutes). It also assumes exposure will only be to one pesticide at any time.

This model does not address those of us who are repeatedly exposed to mixtures (or 'cocktails') of pesticides and other hazardous chemicals, throughout every year, and in many cases, like mine, for decades. This means that there has never been any assessment of the risks for residents or communities exposed over the longer term, (including young children attending schools near sprayed fields).

Pesticides, by their nature, are designed to kill living organisms. They include insecticides, herbicides and fungicides. Sales of pesticides in 2004 totalled £467 million, representing 31,500 tonnes of active substances. Agricultural and horticultural uses accounted for 86 per cent of the value of sales and 80 per cent of the amount used. Garden (weedkillers), home (insect sprays, head lice and pet flea treatments, timber treatments, etc.), forestry and amenity uses (e.g. highways, railways, airports, industrial sites, parks, landscape and sports turf) accounted for the balance.

People can be exposed to pesticides via air, water, contaminated surfaces and food, among other sources, and the routes of exposure include through the lungs (inhalation), the skin (dermal absorption) and the eyes, as well as ingestion (orally). There has now been more than 50 years of documented scientific and medical evidence in relation to the dangers of pesticides, the risks inherent in their use and the acute and chronic long-term ill-health effects that can result following exposure.

Even the safety data sheet for each pesticide product shows how hazardous these chemicals are, with warnings such as: 'Very toxic by inhalation', 'Do not breathe ...spray, ...fumes, ...vapour'; 'Harmful, possible risk of irreversible effects through inhalation'; 'May cause cancer by inhalation'; and 'May be fatal if inhaled'.

Yet despite these clear warnings, astonishingly there is currently no legal obligation for farmers to notify anyone of any intended spraying application or to supply information on the chemicals used, regardless of whether adverse health effects have been suffered.

Since 2001, I have continued to present considerable evidence to the Government, its agencies and scientific advisors regarding the serious failings of the existing regulatory system for pesticides in protecting public health.

As part of that evidence, I produced a video that featured individuals and families from all over the country reporting acute and chronic long-term illnesses and diseases in rural communities surrounded by sprayed fields.

Some of the acute effects that are commonly reported to me include sore throats, burning eyes/nose/skin, blisters, headaches, dizziness, nausea, stomach pains and flu-type illnesses.

The most common chronic long-term illnesses and diseases reported include various cancers (e.g. breast, prostate, stomach, bowel, brain, skin, leukaemia, and non-Hodgkin's lymphoma), neurological conditions – including Parkinson's disease, multiple sclerosis (MS) and myalgic encephalomyelitis (ME) – asthma, allergies, and many other medical conditions. Reports of this nature have gone on for decades and many are related to young children.

Nevertheless, the Government's Advisory Committee on Pesticides (ACP) and the Government regulators, the Pesticides Safety Directorate (PSD) and other government agencies

have continued to maintain that a robust system is in place to protect public health.

However, a year-long investigation by the Royal Commission on Environmental Pollution (RCEP), published in September 2005, was highly critical of both the ACP and the PSD. It said that the level of confidence and assurance that had been given to Ministers, as well as the public, regarding the safety of people exposed to agricultural pesticides, 'represented too sanguine a view of the robustness of the scientific evidence'. The RCEP concluded that the current pesticide policy is inadequate and recommended an unprecedented overhaul, affecting all the Government agencies and departments responsible for pesticides.

Yet despite the fact that the Government had requested the investigation, the Department for Environment, Food and Rural Affairs (Defra) rejected all the regulatory recommendations and seemingly dismissed the RCEP's criticisms of the inadequacy of the existing policy; refused to acknowledge the health risks inherent in the spraying of agricultural chemicals; continued to maintain that the current system is robust and that this is merely an issue of 'perceived nuisance'; and dismissed any link between pesticides and chronic ill-health conditions such as Parkinson's disease, MS, epilepsy, cancers and birth defects, among others.

This is in stark contrast to statements published by the European Commission last year in relation to the new proposed EU Thematic Strategy on pesticides, which acknowledged: 'Long-term exposure to pesticides can lead to serious disturbances to the immune system, sexual disorders, cancers, sterility, birth defects, damage to the nervous system and genetic damage.'

> Pesticide use has brought devastating consequences for public health, animals, wildlife, air, water, soil, food and the wider environment

The Government's response to this issue has been of the utmost complacency, is completely irresponsible and is definitely not 'evidence-based policy-making'.

The principal aim of pesticide policy is supposed to be the protection of public health, therefore this should be the number one priority and take absolute precedence over any financial, economic or other considerations. However, the Government has continued to maintain the status quo and put chemical and industry interests over and above protecting public health. There are a number of factors that need to be considered as to why this may be the case.

First of all, there are massive legal and political implications, as it is obviously the Government that licences pesticides for use. For years, Defra (and previously the Ministry of Agriculture, Fisheries and Food) has made continued claims that pesticides are safe and do not pose any health risks – only for individual products to be withdrawn after years and in some cases decades of use.

Continued political denials of a problem will make it increasingly difficult – in terms of responsibility, accountability and liability – to admit any mistakes or that previous safety claims were in fact wrong. This then means, even in the absence of supporting evidence, that the Government's claims must continue and the status quo be maintained, as for the Government to publicly admit that there is any public health risk from pesticides would be an admittance of a fundamental systemic failure.

Secondly, as recognised in the RCEP report, there is an inherent conflict of interests in relation to the PSD, which receives 60 per cent of its funding from the agro-chemical industry. This is broken down into the levy charge and fees for applications. For example, the income generated from the agro-chemical industry for the year 2003/04 was £7,155,000. Thus, even though PSD's main priority is supposed to be to protect public health and the environment from pesticides (its slogan is 'Safety for People and the Environment') this absolutely conflicts with the fact that its main customers/clients are the agro-chemical giants – so, by its very structure, the PSD has a financial interest in any policy decisions made.

The RCEP report noted that the PSD's structure seemed to make health and environmental considerations subordinate to pest control, and recommended that policy and delivery functions should not be managed by the same agency.

There are also issues involving conflicts of interests with a number of members of key Government scientific advisory committees, including the ACP, who have links with industry. For example, some members may undertake consultancy work, have shares in an agro-chemical company (or companies) and/or receive funding for research support. This is again an inappropriate structure, as so-called 'independent' Government advisors cannot possibly be classified as independent if they have financial or other links with the very industries they are overseeing in relation to the hazards to human health.

The stark reality is that the use of pesticides has resulted in devastating consequences for public health, animals, wildlife, air, water, soil, food and the wider environment, which has substantial economic and financial implications for all parties (with the exception of the pesticide industry) that are impossible to quantify. Obviously the personal and human costs to those suffering chronic diseases cannot be calculated in financial terms. The significance of these consequences requires the adoption of a preventative approach, to make sure that the protection of public health is the overriding priority.

To this end, I would want the Department of Health to be more involved than it currently is, as to date it has been Defra that has taken the lead on pesticides policy, even though Defra does not actually have any health directorate at all within the department.

Secondly, I would not allow any member of my scientific advisory committees to have any current links with the agro-chemical industry and would want to make sure that advice I receive is truly independent.

My policy would be based on the recognition that the only real way to protect public health and prevent any illnesses and diseases associated with pesticides, for now and for future generations, is to prevent exposure altogether through the widespread adoption of truly sustainable non-chemical and natural methods of pest and crop management (including rotation, physical and mechanical control and natural predator management).

The new policy and approach would combine the urgent need to protect public health and the countryside with societal and consumer demand for pesticide-free food, as the move away from chemical dependency and the strong ties with the agro-chemical industry to the development of sustainable non-chemical farming methods can only be encouraged and authorised by central government. It would obviously also be more in line with the Government's commitment to sustainable development, sustainable food and farming and sustainable communities, as the reliance on complex chemicals designed to kill plants, insects or

other forms of life, whether for agricultural or non-agricultural purposes, cannot be classified as sustainable.

Therefore it would obviously not be called a pesticide policy. Instead it would be called the Government's policy on Sustainable Pest Management (SPM). The agency in place of the PSD would thus be called the Sustainable Pest Management Directorate (SPMD) and the committee in place of the ACP would be the Advisory Committee on Sustainable Pest Management (ACSPM). The SPMD and the ACSPM would obviously have fundamentally different roles than those they do currently, which are largely related to the licensing and approval of pesticides.

One of the main arguments used by the NFU and others in objection to the widespread adoption of non-chemical methods is that yields would be reduced if pesticides were not used. However, studies from various countries around the world simply do not support this theory.

For example, one review of more than 200 food production projects involving simple, organic-type techniques in different countries found that they resulted in major yield increases, ranging from 46 to 150 per cent.

> Studies around the world show that growing food using traditional and organic farming methods brings big increases in crop yields

Other case studies in the Philippines have demonstrated that sustainable agriculture can be practised large scale; that yields do not necessarily drop without the use of chemical fertilisers and pesticides; and that a rapid (even immediate) transition from chemical farming to sustainable agriculture is possible if correct technical principles are followed.

Ethiopia has also been turning away from high-input, intensive agriculture to develop farming systems based on traditional and organic farming methods, with yields doubling, in some cases more; for example, yields of the common Faba bean increased five-fold from 500kg per hectare to 2,500kg per hectare. The practical evidence of the project's increased yields has convinced the Ethiopian government to abandon agrochemical-reliant agriculture and reorient national food and farming policy towards organic farming.

While it may not be possible to reverse the damage that has already been done to many people's health following exposure to pesticides, or the environmental damage, the situation will only become even more dire if radical changes in the UK are not made now. There have already been decades of Government inaction, as the Government has continued to allow the industry to set the agenda when it comes to pesticides. This cannot be allowed to continue.

Therefore my advice to the new Defra Secretary of State, Hilary Benn, is this: do not allow those aiming to protect industry interests to convince you that there is no evidence and that the current pesticides policy is protecting public health. I can assure you that it most certainly is not! E

Georgina Downs runs the UK Pesticides Campaign, www.pesticidescampaign.co.uk, and has recently been granted permission to challenge Defra's pesticides policy in the High Court.

BEHIND THE LABEL:
Volvic Touch of Fruit

Don't hit the bottle, warns **Pat Thomas**, else you'll do more than swallow marketing hype

Without water, we die. Irish hunger strikers lived for around 60 days without food, but would have died within four days if they hadn't drunk half a litre of liquid a day. We instinctively know we need water, and after air it is the most plentiful substance on the planet. And yet instead of drinking from the tap, when we are thirsty we meter it out to ourselves in half-litre plastic bottles like thirsty refugees.

In the UK we spend a mind-boggling £1.85 billion a year on bottled water and brands from the Danone stable, Volvic and Evian,e claim the lion's share – around 30 per cent – of that market. Clearly, we love our daily bottles but not as much as on the continent. In the UK our per capita consumption of bottled water stood at just over 33 litres in 2004, well below the western European average of 112 litres.

At an average of 95p per litre, bottled water costs almost as much as petrol, compared to the average cost of tap water in the UK, which is £1 per 10,000 litres. According to a recent report by Sustain, *Have you bottled it? How drinking tap water can help save you and the planet*, in spite of the outrageous cost of bottled water, analysts are predicting that we will buy more than 2 billion litres in 2007, with the market projected to grow by six to seven per cent annually.

There are various reasons why we are prepared to pay such a premium for water in a bottle. Portability and taste count for a lot, but mainly we buy it because we believe it is healthier. Many consumers are willing to swallow the sales hype that 'mineral waters' are better for us than tap water. Others wish simply to avoid the toxic chemicals that may find their way into tap water – aluminium, nitrates, pesticides, chlorine, and fluoride, a systemic poison that can increase the risk of uterine and thyroid cancers, brittle bones and damage the immune system.

When water is fluoridated, the recommended amount of fluoride added to the water supply is 1mg/litre (i.e. 1000mcgs per litre). An EU directive implemented in 2003 introduced an upper limit for fluoride in mineral water of 5mg/litre, and a limit of 1.5mg/litre in other bottled waters. While present in the bottle, fluoride is rarely listed on the label.

INGREDIENTS

Volvic natural mineral water, acid: citric acid, strawberry natural flavour, flavour, preservative: potassium benzoate, sweeteners: sucralose, acesulfame K.

Water hype

Most of us have grown up with the idea that we should drink eight 8oz glasses (approximately 1.5 litres) of water a day to stay healthy. And what could be more natural than water? Especially water with 'volcanicity', Volvic marketing-speak for the high levels of minerals dissolved in the water from volcanic rocks.

Bottled waters that are high in minerals can be hard on the kidneys over the long run. However, a 2003 laboratory analysis in the consumer magazine *Proof!* found that, compared to other brands, Volvic was not significantly higher in minerals than other brands, except for its fluoride content, which was measured at 220mcgs per litre. In the same analysis the water was also shown to be relatively high in nitrates, suggesting that someone may have been intensively farming near those volcanic rocks. Neither mineral content, nor fluoride nor nitrate content, is listed on the label, making it impossible for to make an intelligent comparative choice between Volvic and other brands.

Certainly, water is an essential but overlooked nutrient. Yet, outside of the field of sports medicine, it is almost impossible to

find good evidence to support the eight-glasses-a-day theory. Few of us are training for the triathlon (endurance sports are probably the only place where over-consumption of water, such as drinking up to a litre of water prior to extreme exertion, may be justified), and information on how much fluid sedentary-to-moderately-active individuals need is less clear-cut.

In the same way that adequate nutrition has little to do with how many vitamin pills you take, adequate hydration is not just a matter of drinking lots of water. It is a matter of checks and balances. How much you need depends on a number of different factors, such as your level of activity, what kind of foods you regularly consume and even the climate in which you live.

It is estimated that, every day, the body loses approximately 1.5 litres of water through sweating, breathing and urinating. This must be replaced. The good news is that your daily fluid supply doesn't all have to come from a bottle or a glass. Fruits and vegetables supply water in a form that is easily used by the body while providing a high percentage of vitamins and minerals as a bonus.

In addition, we release about one-third of a litre of water into our systems every day when we burn glycogen (a starch-like carbohydrate) for energy. When the body digests carbohydrates, they are broken down into glucose – to meet immediate energy needs – and glycogen. Glycogen is stored in the muscles and liver for future use. Each molecule of glycogen holds on to nine molecules of water, which are released during the course of your day and at times when you need it most, like during intense exercise.

Environmental madness

There is little evidence that bottled waters are substantially healthier to drink than ordinary tap water. And flavoured waters that contain artificial sweeteners and chemical flavourings – as does Volvic Touch of Fruit – are certainly not a viable alternative healthwise.

Even though there has been a handful of bottled water contamination scares – for example, the benzene found in Perrier in 1989, bromate in Dasani in 2004, and naphthalene in Volvic in 2005 – this does not seem to have made consumers more thoughtful about the cultural and environmental impacts of choosing to consume bottled waters.

First, there are the 'water miles'. Many bottled waters come from far away. For example, Fiji water travels 10,000 miles (16,000km) and Naya water from Quebec, Canada, travels 3,000 miles (5,000km) to sit on our supermarket shelves.

Then there is the plastic problem. Chemicals from the plastic container may leach into the water during storage and especially with reuse. And while plastic bottles may brandish little arrows suggesting they can be recycled, in reality we do not recycle plastic in the developed world. Even if we did, most plastics can only be usefully recycled once, after which time they are not good for anything other than landfill or incineration – both of which are environmental disasters. Or maybe they just get tossed away into the sea (see feature page 34).

The bottled water culture also creates its own insatiable marketplace. Large multinational companies like Coca Cola and Nestlé have identified water as the new oil and are busy buying up water supplies throughout the world. This greedy market activity means that local people – often living in very poor parts of the world – lose access to vital water supplies just so we can feed our frankly stupid addiction to bottled water.

Tap water has a number of advantages over bottled water. Firstly, it is extremely cheap. Secondly, the regulations about water purity are even more strict for tap water than for bottled, so it is highly likely that the water from your tap is cleaner than the water from your supermarket. Tap water is also plentiful. Psychologically, if you get into the habit of drinking only bottled water, you can easily reach a point where you believe that when the bottle is empty, you've run out of water.

There is no such thing as organic water and there is no such thing as ethical, environmentally friendly bottled water – no matter what some manufacturers say. Honestly, folks, keep drinking bottled water and we may run out – of habitable land, natural resources and water – sooner than you think. E

WHAT THEY WASH OVER

Strawberry natural flavour, flavour
Adds taste
Flavourings (and aromas) are perfumes by another name. They will be derived from petrochemicals and contain the same range of neurotoxins, carcinogens and allergens found in all perfumes.

Citric acid
Preservative, acidifier
On its own, citric acid is relatively harmless, though it can be harsh on tooth enamel. But when mixed with potassium or sodium benzoate (see right) it can – during storage, and especially at raised temperatures – aid the formation of carcinogenic benzene.

Potassium benzoate
Preservative
People who suffer from asthma, rhinitis or urticaria may find their symptoms get worse after consuming benzoates. In acidic solutions (such as sodas). Benzoates can breakdown into benzene, a known carcinogen. Surveys have shown that levels in soft drinks can be up to 40 times higher than recognised 'safe' doses.

Sucralose
Artificial sweetener
Produced by chlorinating sugar. Animal studies conducted by the manufacturers found a range of problems at high doses, including shrunken thryroid glands and kidney and liver problems. Human studies suggested that a dose at half the current approved level over six months could raise blood glucose levels. Consumer reports suggest a wide range of adverse effects from regular ingestion of sucralose, including gastrointestinal upsets, cramping, and bladder problems.

Acesulfame K
Artificial sweetener
Causes cancer in animals. Acetoacetamide, a breakdown product, has been shown to affect the thyroid in rats, rabbits and dogs. Although it is commonly blended with other sweeteners to cover its bitter taste, there are no studies to show if the combination is safe or whether it produces other toxic by-products.

Bananas

What could be more cheerful than this ubiquitous breakfast fruit? But if you're not buying them Fairtrade and organic, argues **Ed Hamer**, then you're buying into a modern agricultural scandal

On the early hours of 16 March 2007, three agricultural labourers, Alexander Zuñiga, Marco Borges and Jamie Juárez, began their day's work on the Chiquita-owned Coyol banana plantation in northern Costa Rica. The men had been busy harvesting and gathering the unripe bunches of fruit for about an hour when they realised that another team of workers had also been assigned to their section, spraying the fruit with nematicide to control pests.

Within minutes, two of the men had been overcome with the effects of pesticide poisoning and were immediately taken by the other workers to a clinic, where one remained under observation, on a drip, for several hours. The following day, on reporting the incident to their supervisors and holding them accountable, the men were summoned by the company management for a disciplinary hearing and dismissed for misconduct.

Less than a week later, heads of state from across the 'free' world joined the British government in celebrating the bicentenary of The Slavery Abolition Act 1807. Speaking at a Downing Street reception, Tony Blair labelled the 18th-century exploitation of indigenous peoples as 'one of the most shameful enterprises in history'.

Two hundred years after abolition, modern-day slavery is still a fact of life for 800 million of the world's rural poor. Where once there were merchants there are now multinationals; where there were slave-drivers, there are now economies of scale. The transition from the sugar estates of the commonwealth to today's commodity plantations has been seemingly effortless. The infrastructure remains, all that has changed is the name; from exploitation to externalities.

The Chiquita story is by no means exceptional, but a symptom of our rapidly globalising agricultural economy. As the pursuit of competitive production has fuelled the race for minimal social and environmental standards, it is inevitable that those at the very bottom of the supply chain will ultimately pay for 'economy' foods, through their health and the environment.

The banana is in many ways synonymous with globalisation. The first tropical fruit to be cultivated on an industrial scale, by The United Fruit Company (now Chiquita) in 1873, its production has been progressively streamlined. Bananas are now the single biggest profit-making item sold by UK supermarkets, with Tesco generating an average £800,000 profit every week from banana sales alone.

Despite the desperate inequalities associated with its production and trade, the banana can tell us a lot about the future of global food security. Few other products, let alone foods, can claim to have achieved the efficiency of supply or brand recognition of the breakfast banana. A model that agri-business is keen to replicate.

First introduced to the Americas by the Portuguese in the early 16th century, bananas are today grown throughout the humid tropics and, along with coffee, account for 60 per cent of the combined export earnings for the region. More resistant to pests and disease than coffee, bananas were traditionally recognised as a secure agro-export investment for the newly industrialising economies of the global south.

Throughout the 1970s and 80s, production

was intensified through conditional development loans imposed by the World Bank and IMF, favouring large-scale industrialised agriculture. Today, just five companies – Dole, Del Monte, Chiquita, Fyffes and Noboa – dominate 80 per cent of the international trade in bananas.

Over recent years, the economic might of the European supermarket chains has, for the first time, challenged the 130-year stranglehold of the suppliers over the banana market. Between 2002 and 2005 in the UK, Tesco and Asda engaged in an unprecedented 'banana price war', aggressively undercutting each other's shelf-price with the moral authority that 'Every little helps'.

Predictably, these price cuts were not absorbed by the multimillion-pound retailers, neither were they picked up by the importers, shippers or suppliers. Instead, they were passed directly on to the plantation workers, who account for one per cent of the banana's retail price. In Nicaragua, workers receive as little as 75p for a 10- to 12-hour day of intense physical labour. In Ecuador, they may receive as much as £2.50, or even £4, though unfortunately still not enough to pay for basic human needs such as housing, food, education and clothing.

According to an Action Aid report released in 2007, incidences of poisoning, such as that at Coyol, are 'routine', as is the aerial spraying of contact-pesticide and herbicide on workers in the plantations. In order to 'integrate' the supply chain, packing houses are sited nearby and are staffed primarily by women. Here the bananas are washed of chemical residues and separated into smaller 'hands' before being graded and packaged. Although producer countries are subject to domestic labour standards, enforcement is not a priority. It is not unusual for packing operatives to spend their entire shift (10 to 12 hours) standing, with their unprotected hands immersed in chemical baths.

In December 2002, a £250 million lawsuit was successfully brought against Dow

Above Banana plantation, Costa Rica
Left Chemical spraying: poisoning is common

Chemicals, Shell Oil and Dole over the toxic effects of the chemical nematicide, Nemagon. Despite being banned in the US in 1977 on health grounds, Nemagon continued to be supplied to banana plantations in the tropics, in some cases up until 1990, resulting in birth defects, kidney and liver damage and sterility among workers.

Due to the early success of the banana trade, many small nation-states were monopolised by plantation economies, resulting in the decline of secondary industries and services. It is a tragic legacy of this dependence that these plantations still offer the most stable form of income for rural populations, and are therefore rarely short of workers. Under such conditions, it becomes clear why plantation owners would sooner dismiss employees who complain, than accept liability for the health of their workers.

Around 80 per cent of the bananas sold in UK supermarkets are produced on plantations in Latin America and, increasingly West Africa. Although there are more than 300 varieties of bananas in the world, large-scale production favours just one of these, Cavendish, which is cultivated in vast monocultures. This intensive model of farming could not be more different from the species-rich ecosystems that are cleared to make way for the booming banana trade.

Having evolved out of the nutrient-rich forest soils of Australasia, bananas are an ecologically demanding species. Once new plantations are established on cleared land, soil fertility quickly declines as natural leaf litter is no longer available to feed nutrient cycles in the soil. In an effort to maximise the nutrients available to the crop, natural ground cover is controlled with herbicides, leaving the soil exposed to sunlight, wind and rain. Typically, newly established plantations will experience a considerable drop in yields within the first three years of production. The plantation is therefore forced to expand, to compensate for the loss in productivity.

This rapid decline in soil health inevitably leads to erosion and loss of topsoil. Intense tropical rainfall exacerbates run-off, leading to localised flooding and sedimentation of water courses and coastal regions. In 1996 it was discovered that more than 60 per cent of the fragile coral reefs in the Cahuita National Park, off Costa Rica's east coast, had suffered irreversible sedimentation due to erosion from coastal banana plantations.

The banana export industry consumes more

Washing bananas is mainly done by women, who may stand for 10 to 12 hours a day with their hands in chemical-filled water

agrochemicals than any other crop apart from cotton. This is largely due to the cosmetic requirements imposed by European and US supermarket chains, which demand 'perfect'-looking bananas, free from blemishes. Growing a single crop intensively, in a confined area, considerably increases the risk posed by pests, fungi and disease, fostering a dependence on pesticides. It is estimated that commercial banana plantations in the tropics use, on average, 30kg of pesticide per hectare per year, compared to the 2.7kg applied to industrial cereals in Europe.

Such extraordinarily high levels of application are necessary as heavy rains wash the pesticides from the leaves and into the soil and watercourses. In one month in 1994, five serious river contaminations were reported in the Cariari banana region of Costa Rica. Despite the legacy of Nemagon, plantations throughout Latin America continue to use chemicals that have been restricted or banned for use in the USA.

Biodiversity in the areas surrounding banana plantations has also suffered as a result of pesticide use. This has been compounded through the loss of topsoils and deforestation. Chemical residues have prevented pioneer plant species from the natural process of colonising abandoned plantation plots, some of which have been found with concentrations of copper as high as 400ppm10. Mammals, birds and insects are also affected as pesticides are accumulated along the food chain.

According to the World Wildlife Fund, the banana industry produces more waste than any other agricultural sector in the developing world. Organic by-products include shoots, flowers, crown and leaves, as well as rejected bananas, all of which are saturated in agrochemicals, preventing natural decomposition by microbes and biota.

Non bio-degradable waste includes industrial quantities of plastic bags, string, tape and chemical containers. These are either burnt, or find their way into drainage ditches and waterways. Collection and recycling requires storage, a production cost that is regarded as uneconomical. Whilst up to date figures are scarce, the International Union for the Conservation of Nature estimated that 4,510 tonnes of plastic bags and 4,832 tonnes of polyethylene rope were generated by Costa Rica's banana industry in 1995 alone.

> 'Retailers call bananas "known value items"... consumers recognise their cost as an indicator of competitive pricing between supermarkets'

While the majority of these social and environmental concerns have long been regarded as 'factors of production', the past decade has seen increasing scrutiny of our food supply chains from campaign groups and the consumer alike. Despite their apparent indifference, supermarkets are not oblivious to the concerns of their customers – or, more importantly, consumer spending concerns.

As early as 1990 the success of the Fairtrade movement was putting pressure on the big retailers to modernise their attitudes towards 'economy' producers. As a result, the UK's supermarket chains adopted their own 'codes of conduct' regarding their responsibilities, particularly towards Third World producers. On the face of it, these codes represent a commitment to social and environmental standards, monitored independently along the supply chain. In reality they are voluntary and often fail to consult the workers themselves over social and environmental concerns associated with production and processing.

Recognising these superficlal attempts at greenwash, grassroots groups have stepped up their campaigns to expose the unsavoury realities of the banana trade. Banana Link is a small non-profit cooperative, founded in 1996 to work for a socially just, environmentally sound and economically viable banana industry. According to its international coordinator, Alistair Smith, 'Although companies may want to be seen to be respecting the rights of their employees, and environmental standards, it is for the workers, unions and consumers to decide

whether they are 'socially responsible.'

In addition to the environmental concerns associated with monoculture plantations, the agricultural specialisation that has created 'banana republics', has also led to severe economic and social shock. The Windward Island Archipelago, population 160,000, progressively adopted banana production as its primary export industry throughout the 1980s on the advice of the International Monetary Fund (IMF). From 1987 onwards, The Windward Isles enjoyed an exclusive contract supplying US food giant WalMart. In 2002, however, WalMart's contract was tendered and won by Del Monte, sourcing from Latin America. Almost overnight, the livelihoods of 23,000 small farmers and their families had fallen victim to the 'nature' of free trade.

'When Del Monte became Asda/WalMart's exclusive supplier, it was based on a ridiculously low price,' explains Alistair Smith. 'This sparked a race to the bottom as other retailers sought to push down their supplier prices to compete. The first to suffer were Windward Island farmers, who saw the prices they received fall below costs of production'.

Europe has traditionally sourced bananas, and other tropical produce, from the former colonial islands of the Caribbean, paying guaranteed prices above those of the global markets. While this has not always been the most economic option, it was continued out of respect, following the granting of Independence. Since 2005, however, these arrangements were ruled illegal by the World Trade Organisation, following complaints from the United States that they constituted a 'barrier to trade'.

As a result, smaller-scale producers in Jamaica, Dominica Republic and Haiti have had to abandon their extensive low-input systems in order to compete with the established industrial plantations of Central America. It is no coincidence that the three largest Central American exporters – Dole, Chiquita and Del Monte – are all US owned.

Bananas have power. They are referred to by retailers as 'known value items', meaning that consumers recognise their cost as an indicator of competitive pricing between supermarkets. This is why they occupy prime shelf space at the entrance to the store and feature regularly in promotional price cuts.

This power, however, is vulnerable to manipulation. If retailers experience a shift in consumer spending on a 'known value item', it will have an immediate and significant impact on supply. Therefore, if consumers commit themselves to buy only Fairtrade bananas, demand will be passed along the supply chain to provide improved, Fairtrade-certified conditions for plantation workers.

At present, Fairtrade alternatives are not universally available, being stocked by retailers primarily to capitalise on the 'ethical market'. Recent evidence, however, illustrates the power of consumer demand, with two of the big five UK supermarkets now stocking only Fairtrade bananas. Independently supplied Fairtrade bananas now account for more than 20 per cent of the UK market, ensuring that a 'living wage' is paid to more than five million workers and farmers worldwide.

Opting to buy organic may also be seen as an ethical decision. Although Organic certification can not be interpreted as an indicator of social responsibility, organic plantations offer a real solution to the unsustainable environmental exploitation of intensive monocultures. Organics now account for two per cent of the global banana export market, primarily coming from Ecuador, Peru and the Dominican Republic.

Although bananas, as a tradable commodity, have been subjected to a greater degree of industrialisation than almost any other agricultural export, it is only a matter of time before coffee, cacao, tea and sugar suffer a similar fate. What is remarkable, however, is that these five crops, which between them generate 85 per cent of total export earnings within the tropics, are all non-essential foods.

What is more remarkable still – and furthermore, slightly disturbing – is that these developing countries, home to the world's poorest rural populations, have been encouraged to dedicate their most productive agricultural land to the cultivation of luxury items for the West.

This is no longer simply a question of 'bonded labour'. In colonial times, slaves were in fact encouraged to be self-sufficient in their own foods. Instead, what we have witnessed is the unprecedented erosion of livelihood security, cultivated by our dependence on artificially cheap foods. E

Ed Hamer is a freelance journalist.

The banana supply chain

Plantation

Due to economies of scale, big is bountiful. Plantations in Central America can extend up to 100 sq km. Cavendish bananas take about nine months to grow and are harvested, while still green, in bunches weighing up to 80kg. These are hauled, by hand, to on-site packing sheds. Pickers are commonly paid 'piece rates' to ensure maximum efficiency, resulting in extensive health problems due to overworking.

Packing

Here bananas are separated into 'hands', washed, wrapped and packaged, primarily by women labourers. Any bananas that do not meet strict 'cosmetic' requirements imposed by retailers are rejected. The UN Food Agriculture Organization estimates that 30–40 per cent of total banana harvests are classed as 'unacceptable' due to spots or blemishes.

Shipping

Boxes are transported by road or rail to the port where they are shipped in energy-intensive refrigerated units, to prevent ripening. A report released in March this year by European academics estimates that freight shipping, which represents 90 per cent of transport in world trade, accounts for five per cent of global CO_2 emissions.

Importers

On arrival, bananas are artificially ripened using the chemical ethylene and a gradual rise in temperature in specialist warehouses.

Retailers

They are then transported, primarily by road, directly to retailers or wholesalers who then supply smaller shops and markets. In 2002, food transport in the UK accounted for 25 per cent of all HGV kilometres and 1.8 per cent of total UK CO_2 emissions.

Consumer

Just four retailers – Tesco, Asda, Sainsbury's and Morrisons – currently account for 70 per cent of all banana sales in the UK. This represents over one million individual sales every week, which should be used as a vote for Fairtrade alternatives.

YOU HAVE BEEN WARNED

Leonardo DiCaprio's new film, *The 11th Hour*, takes the debate about global warming into a whole new orbit. The way to stop climate change, says the superstar environmentalist, is through social and political change. He speaks exclusively to **Zac Goldsmith**

Illustration **Billie Jean**

Leonardo DiCaprio is a rare phenomenon. He's certainly not the only celebrity trying to raise awareness of environmental issues. But whereas for so many celebrities, charity work is an add-on, an obligatory social tax they feel they must pay to justify public admiration, for DiCaprio it is a thread that runs through everything he does. He's championed some of America's most effective environmental organisations, such as the Natural Resources Defence Council and Global Green and has led calls for the expulsion of oil money from US politics. His new film *The 11th Hour* is a very personal project where the two parts of his life merge.

Hot on the heels of Al Gore's *An Inconvenient Truth*, *The 11th Hour* is very much the sequel and to be amongst the first to view it – even before it debuted at Cannes – was a privilege.

I expected something impressive. I expected something profound and depressing – a catalogue of human errors and a stark warning. But *The 11th Hour* takes the debate about the environment to a whole new level. It places the problems we're now mostly aware of in the context of something bigger, describing climate change, oceanic dead zones, soil erosion, the destruction of the world's forests and the spread of disease in the context of system failure. It is shockingly ambitious, and it works.

Arranging the interview was a logistical nightmare but eventually we settled on a date coinciding with the Cannes Film Festival. I wasn't planning to stay long in France, so besides my papers and computer I arrived relatively unburdened by luggage. But I'd misjudged the nature of the festival. Wandering past trendy film crews, make-up artists and fashion journalists, down a beach-front path towards the 'interview tent', it occurred to me from the looks I was getting that perhaps I should have found an alternative to my accustomed winter tweed jacket and thick brown trousers.

At least that's what I thought. In fact it was something else. What I hadn't fully realised was that DiCaprio was doing only one UK interview to promote his new film – and he'd chosen to do it with the *Ecologist*. That's why the journalists were staring at me. And their distaste had less to do with my clothes than with sheer frustration and jealousy.

Given that the *Ecologist* is dwarfed in terms of readership by so many of the nation's daily newspapers and glossies, this interview seemed an odd way to sell a mass-market product. Until you see the film. In a very real sense, it is the film the *Ecologist* would have made if that were our business.

We met in a small tent overlooking a bay. DiCaprio, experienced at dealing with media intrusions, faced away from the sea and the swarms of paparazzi-filled boats floating in the harbour. Sitting next to him was the environmental philosopher Professor David Orr, advisor to DiCaprio and his co-producers during the making of the film.

Was the intention from the outset to make a follow-up to Gore's film?

'We worked on *The 11th Hour* for about three years,' says DiCaprio, 'so there was a lot of overlap. I've been an environmentalist for 10 years or so and I've never seen anything have the kind of immediate impact that *An Inconvenient Truth* had. People have always felt that the issue is way too big for them, too much for them to deal with. But his film hit people on a deep, emotional level. It also triggered a wider media discussion of the issues. It's been a tremendous boost for the environmental movement.

'The truth of the matter is, Gore's film was a launching platform for this one. Our job would have been harder if his film hadn't come out and moved public opinion in the way that it did. But our movie goes into the solutions more deeply, not just focusing on technology but on how we need to transform as a culture as well. It describes the need for a much deeper level of environmental awareness throughout the world.'

Although he is a megastar, and has been centre stage for most of his life, DiCaprio doesn't dominate this film. Instead, the body of the message is delivered by a line-up of impressive experts, many of whom are long-time *Ecologist* contributors – people who would not normally command such a sustained slice of the spotlight.

'The position I really wanted to take in the movie was that of a concerned citizen asking questions, and leaving the answers to the scientists and experts – people who are at the forefront of the environmental movement,' DiCaprio explains. 'I wanted to give them free rein to talk about the issues they care about, issues they are passionate about, without having to start at the beginning, without having to argue about the science.'

Knowing the way the movie business works, it is hard to imagine a major film company endorsing such misuse of a valuable resource like DiCaprio. In fact, the project was begun long before distribution of the film fell under the auspices of Warner Independent Pictures and Warner Pictures International.

'We wanted it to be a genuinely home-made movie. We wanted to do it privately. We didn't want to attach ourselves to any studio or network beforehand. We didn't want to have

Photography CHUCK CASTLEBERRY







any political or corporate agenda there whatsoever. We wanted to let these people know they could speak absolutely freely.'

The film is very much DiCaprio's personal project – funded by him and produced by a company he set up with friends, Leila Conners-Peterson and Nadia Connors. You get the impression the team didn't really know what to expect when the idea was first mooted. Leila admits, when I see her later, that what started out as a film about climate change, became 'a human extinction story'. Her sister Nadia adds: 'The overriding message is that humans are having a tremendous impact on the world. What's happening to our soils, our air, our water are all symptoms of a much deeper cultural problem.'

Al Gore's film catapulted climate change onto the agenda in a way that few could have predicted. The film was – and remains – a huge hit. But one of the reasons it has been so popular is that its message is relatively straightforward. It doesn't attempt to explore the root causes or solutions – at least not in any great depth. Instead it sets itself the task of alerting the masses to a threat that for too long has been overlooked. *The 11th Hour* is more ambitious in its scope and in its language.

In it Leonardo talks about a 'convergence of crises' facing the planet and its people and lays our current situation starkly on the line:

'We find ourselves on the brink. It's clear humans have had a devastating impact on our planet's ecological web of life. Because we've waited, because we've turned our backs on nature's warning signs and because our political and corporate leaders have consistently ignored the overwhelming scientific evidence, the challenges we face are that much more difficult. We are in the environmental age whether we like it or not. So, what does the future look like? Will our pivotal generation create a sustainable world in time?'

Paul Hawken, author and green entrepreneur, continues the narration: 'The problem that confronts us is that every living system in the biosphere is in decline and the rate of decline is accelerating. There isn't one peer-reviewed scientific article that's been published in the last 20 years that contradicts that statement.'

It is startling stuff and my question to DiCaprio was simple: does he believe there is a mass market for this kind of film?

'Honestly, I don't know how people will react to it,' he says. 'The intention was simply to tell the truth. To let these people talk about the real issues. I want people to be transformed and scared about the ramifications of what could happen in the future – and hopefully to walk away from this movie feeling energised and wanting to do something about it. It's true that a lot of what it says – much of the vision – is complicated. But that's unavoidable. These are not issues that you can spoon-feed to people pre-digested like baby food.'

It is, though, a form of shock therapy, isn't it? An ambush, even?

'Look back 35 years,' says David Orr, 'to the release of Rachel Carson's book *Silent Spring*, or Teddy Goldsmith's *Blueprint for Survival* – which had a big impact on me. We haven't seen a whole lot of action since then. But all that time there has been a movement building. It's taken its time, but then so did the Enlightenment. Well, I think it's reached a tipping point. As a result of Rachel Carson, Teddy Goldsmith, Al Gore – whose ideas are echoed by the people who appear in this film – I think the world is ready for leadership.'

One of the key questions posed by *The 11th Hour* is where that leadership is coming from. In 2000, a 25-year-old DiCaprio famously interviewed the then-President Bill Clinton. The interview – for an ABC news special about Earth Day, an event for which DiCaprio was Chairperson – enraged more-seasoned political reporters who were denied access to the President. At the time of the interview, DiCaprio appeared to admire Clinton's willingness to acknowledge the reality of climate change, both personally and politically. But does he still have any faith in US politics to provide that leadership?

'At the time of that interview, the debate about global warming was about whether or not it would happen – much like a debate on whether or not a meteor would hit our planet and we'd become extinct. That's all changed. Climate change has become a hot topic. But there is a danger in that. Heat fizzles. Right now it's the topic of the moment – so now, while the moment is right, all the people who've been working their entire lives on these issues have to galvanise and

drive this into the political system.'

He's right, of course; heat does fizzle. So how do we prevent that from happening?

'Having closely followed the last election – where some of the topics at the forefront were things like gay marriage, or pro-choice – it seems to me that the environment, our planet, our future as a civilisation, needs to have at least as much air time as issues like that,' he laughs. 'That's what I am looking for. I think there is a greater level of awareness – more than ever before, in fact – and the next election will be key. But it's for the public to demand answers and action.'

And will that happen?

'I think it will. In 2004 I visited 14 or 15 states for John Kerry, because I respected his environmental policies. I felt he was our environmental choice as President. I went to all these colleges, and I spoke about environmental issues. I was talking about the future of our country, our economy – the future of the world. I wanted to galvanise the students and I think they were ready to hear that message. But the election ultimately became about a wide variety of issues that were far less important than the survival of the planet. So in a way this film is my action plan for the next election.'

'Green' is likely to be a big issue in the 2008 US Presidential election – largely in response to George Bush's suicidal refusal to engage with environmental issues. But the depth of green thinking will likely be unimpressive. Even Al Gore tends to shy away from anything other than the business-as-usual solutions aimed at pacifying a public unwilling to change its lifestyle. Compare that to former World Bank economist Herman Daly's contribution to *The 11th Hour*:

'The most basic thing to understand about our global economic system is that it's a subsystem. The larger system is the biosphere, and the subsystem is the economy. The problem, of course, is that our subsystem, the economy, is geared for growth; it's all set up to grow, to expand. Whereas the parent system doesn't grow; it remains the same size. So, as the economy grows, it displaces, it encroaches upon the biosphere, and this is the fundamental cost of economic growth. It's what you give up when you expand.'

Try putting that kind of deep thinking into an election speech. And yet the challenge is fundamental. It's not just about cleaner cars or energy-efficient lightbulbs. It's about changing the DNA of our businesses, about writing the environment into our economy.

'We can make it hard or we can make it easy,' David Orr says. 'The easy step is to price carbon into the economic system. Carbon has to have a price. You cannot allow someone, given what we know, to emit carbon for free. It's not a one-size-fits-all solution, but when you price carbon, you force a shift to green energy, to solar, to efficiency and away from things like coal. We're heading to a world where a lot of activity is going to be much more local.'

I ask DiCaprio if he thinks of himself as a localist. 'It's hard to be a localist in my business,' he laughs. 'But in terms of where I think we should be going and what we should be doing I have to point you back to the film. I'm not an expert. That's why I made this film. I invited people whom I personally rate, people whose vision I endorse, to tell the story. They're better placed to say where we should be going than I am. But I advocate their position. I support it. And I am promoting it.'

Given the film's stark warning to viewers about the consequences of not embracing personal and political action for change, I wondered if making this film left him with a vision of the future – say 30 years hence – and if so, is it a pessimistic view or an optimistic one?

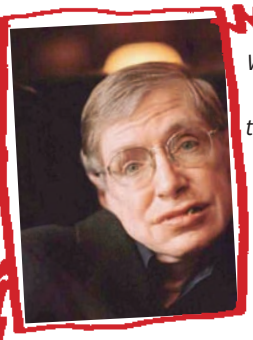
'No matter how upbeat you try to be, you have to be honest and admit that this stuff is discouraging. We face a very bleak future, and to avoid it we need dramatic change worldwide. It needs to go way beyond politics or religion. It's scary and it's daunting. But it is also our obligation to make whatever efforts are required. Am I optimistic or pessimistic? I guess I'd have to agree with what Paul Hawken says in the film: when you look at the data, it's hard not to be depressed, but when you look at people, think about things like their resilience and creativity and determination, there is hope.

'If we look back at this period of time and ask ourselves "What did I do?", I think we're all going to have to take stock of where we were personally responsible. The fact is, we know the solutions exist. The science, the technology is there. Visionary people have already explored and set up new ways of organising ourselves and our communities and new ways to do business. It's all readily available to us, to government, to corporations. We need to push hard to

'It's not just about energy-efficient lightbulbs, it's about changing the DNA of our businesses, about writing the environment into our economy'

Voices from the film

Economists don't include all the things that nature does for us for nothing. Some technologies would never be able to do what nature does. For example, pollinating all the flowering plants. What would it cost us to take carbon dioxide out of the air and put oxygen back in, which all the green things do for us for nothing? **— David Suzuki, geneticist and broadcaster**



We don't know where the global warming will stop, but the worst-case scenario is that Earth would become like its sister planet, Venus, with a temperature of 250° Centigrade, and raining sulphuric acid. The human race could not survive in those conditions. **— Stephen Hawking, revered Cambridge professor of mathematics, theoretical physicist and author**

I think the industrial system has to be re-invented. Today the throughput of the industrial system, from mine and wellhead to finished product, ends up in a landfill or incinerator. For every truckload of product with lasting value, 32 loads of waste are produced. That's mind-boggling, but true. We have a waste-making system. And clearly we cannot continue to dig up the earth and turn it to waste. **— Ray Anderson, industrial engineer and businessman**

The great thing about the dilemma we're in is that we get to reimagine every single thing we do... there isn't a single thing that doesn't require a complete remake. There are two ways of looking at that. One is: Oh my gosh, what a big burden. The other way, which I prefer, is: What a great time to be born! What a great time to be alive! Because this generation gets to essentially completely change this world. **— Paul Hawken, environmentalist and author**

Our industrial process is a 180° difference from how life makes things. Look at how we make Kevlar, our toughest material. We take petroleum, heat it to about 1,400°F, boil it in sulphuric acid, then pull it out under enormous pressures. The beautiful orb-weaver spider takes flies and crickets and transforms them in water in the abdomen, at room temp, and what comes out is a material that's five times stronger ounce for ounce than steel. **— Janine Benyus, co-founder, Biomimicry Institute**

In my own part of the world, I keep telling people, 'Let us not cut trees irresponsibly. Let us not destroy especially the forested mountains.' Because if you destroy the forests on these mountains, the rivers will stop flowing and the rains will become irregular and the crops will fail and you will die of hunger and starvation. The problem is, people don't make those linkages. **— Wangari Maathai, 2004 Nobel Peace Prize winner for her work with the Green Belt Movement in Kenya**

make sure this change becomes government policy. That's the biggest challenge.'

I wonder how he will react when the central message of *The 11th Hour* – the basis on which it has been constructed – is challenged by vested interests? And is he suspicious of the current appetite among big businesses for green thinking?

DiCaprio ignores my question. 'What was the name of that documentary shown in the UK? *The Great Global Warming Swindle*? Talk about severing the issue. It only represented a tiny proportion of scientists, and it completely avoided the other issues – pollution, asthma among children, the economy, dependence on foreign oil. None of these issues came into it.'

David Orr, who has argued for, amongst other things, a new paradigm in business, takes up the thread.

'We have the Climate Change Action Plan, the US Climate Alliance – it has 40 or 50 businesses signed up, including GM [General Motors] and other big companies. I don't think it's entirely cosmetic. WalMart is trying to look at its whole supply chain. Whatever we think of WalMart is another matter, but I think there is a shift happening. Businesses aren't of a mind yet – they're still trying to figure out what they want to be when they grow up. A big question is whether or not capitalism can be made green fast enough and in a way that is adequate enough. The jury is still out on that. But I don't see an alternative.'

So where's the resistance coming from?

'Some of it is bad habits,' says Orr. 'Some of it is the stranglehold of the wrong kind of money on the machinery of government. But more than that, we've never really calibrated the way we govern. We need a "Declaration of Independence" moment, where people sit down and work out what governance means, relative to the ecology of the planet. That's an issue on which left and right can come together. Thomas Jefferson said "no generation has a right to impose debt for future generations". Burke, who was on the Right, said exactly the same thing. Left or Right, we have a duty to protect the future, to be good trustees. Well what does that mean? It requires biological diversity. It requires climate stability, clean air, clean water.'

In the midst of this heady stuff I suddenly become aware that, for some reason, the paparazzi are going wild in their boats. DiCaprio doesn't appear to notice. The reason, it transpires, is that the two Warner Brothers minders are on their way to end our

discussion, and the photographers are no doubt anticipating a second or two of profile. Aware that our time is short, I ask DiCaprio how he will measure the film's success.

'This film is the culmination of a lot of my efforts over the past three years. I guess I realised that I could do as many soundbites as I wanted, talking for the NRDC [National Resources Defense Council] or for Global Green about climate change. You know, "Here I am, Leonardo DiCaprio, the Hollywood actor, talking about CLIMATE CHANGE – again." But I can always be discredited for that.

'To me – and this is why the film is so important – it allows me to do much more, to highlight these incredible people, and to give them an opportunity to speak out. I want it to have the same sort of effect that *An Inconvenient Truth* has had. Some of these concepts will be brought out in a media format – and the media will respond to these issues and talk about them on a worldwide platform. It's not just about the sheer numbers in the theatres. Hopefully these ideas, these concepts, will be discussed much more broadly than they have until now. Personally, I think if it's picked up at all by Fox News, it will have been a success!'

Modesty aside, the environmentalist in DiCaprio clearly hopes the film's message will hit home. 'If I can help bring information to people who might not otherwise get it, then that's great. I want to leave a better world to future generations.'

As the minders hover ever-closer, I ask DiCaprio how important he thinks 'ecoliteracy' is these days and if he will persuade the company to offer free copies of his film to every school in the US and UK. He takes the bait. 'Honestly, it should be a core subject at all grade levels. Now that the film has been made we are in the process of developing a curriculum for schools, based on *The 11th Hour*. Can the *Ecologist* help in the UK?'

'Of course...,' I gulp.

Later that day, I bumped into DiCaprio again. He had just faced a barrage of questions from the press following the premiere of the film. 'All they had wanted to know', he told me gloomily, 'was how I got to Cannes from America.'

Not just for the sake of an *Ecologist* 'exclusive', his flight seems a small price to pay.

The 11th Hour premiers in the US on August 17th. UK release dates are to be confirmed. Visit; www.11thhourfilm.com

Photography NATURE PICTURE LIBRARY

Landfill-on-sea

Old plastic rubbish doesn't die – it just gets tossed away in far-off places that we rarely get to see. **Daisy Dumas** assesses its impact on the world's largest floating landfill – the Great Pacific Garbage Patch

A challenge. Try, if you can, to spend at least five minutes without the company of plastic sometime today. I'm warning you, it won't be easy.

We sit on it, wash in it, eat from it, drink from it, look through it, play with it and pay with it. It is more than likely that there is some residing inside you. Plastics are literally everywhere.

What was once seen as the durable, lightweight, cheap and easily manufactured answer to our needs and desires has now become an unwelcome ubiquity. We are only just beginning to understand the extent of damage caused by the uncontrolled, unparalleled and unexamined over-production of plastics.

In the quest to produce a material that transports and stores effectively, we have unwittingly created a range of products made from a substance that is totally at odds with the environment. And having conquered the land, plastics are now taking over the planet's greatest oceans.

The doldrums

The Central Pacific Gyre is the largest uniform ocean realm on the planet, stretching over a vast 10 million square miles. Subtropical highs cause the slow, clockwork rotation of the ocean, where a devastatingly calm core gently wanders with the currents.

Once synonymous with a sailor's nemesis, the area has taken on a rather more sinister role as a site for the world's plastic trash. Trapped in these calm seas, a toxic dump of floating seaborne plastic waste swirls and grows, constantly accumulating substance.

At twice the size of France, this phenomenon was dubbed the Great Pacific Garbage Patch (GPGP) by leading flotsam expert Curtis Ebbesmeyer, and is perhaps the single largest body of pollution in the world; an aggregation of year upon year of discarded plastic entering the Pacific Ocean. In this place plastic waste can rotate and linger for over 16 years, its origin a multitude of shorelines, neighbouring waters and ocean vessels.

The doldrums have always been an area where flotsam collected. Until the recent past, biodegradation has taken care of integrating much of this largely natural waste into the marine ecosystem. Nowadays, however, 90 per cent of all marine debris is anything but natural. It is, instead, plastic. Defying even the most rapacious and stubborn bacteria, plastics slowly photo-degrade to a molecular level, at which point further degradation can only be achieved by burning.

Between 70 and 80 per cent of the debris collecting in the Garbage Patch is post-consumer waste from the land, mostly swept into the marine ecosystem by storms and wind. Much of the remaining plastic is an unintended consequence of the mass-fishing industry, as vast trawling nets, broken buoys and mile upon mile of plastic cord and twine intermingle with plastic bottles, toys, trainers and cigarette lighters. A smaller but nonetheless significant fraction of the debris is pre-consumer, often in the form of 'nurdles' – pre-manufacture pellets.

Given the nebulous nature of the GPGP, its rate of growth is hard to determine. 'I think it is growing faster than we can predict. At the moment it is enlarging at an exponential rate, increasing by a factor of 10 each year,' says Captain Charles Moore, Founder of the Algalita Marine Research Foundation in California, who in 2006 found that in some areas of the GPGP, the ratio of plastic to plankton measured six to one. 'It is likely to be 100 times worse in six years' time and similar to rates found off the coast of Japan, where much of the waste originates.'

Hideshige Takada, an environmental geochemist at Tokyo University, who is studying the problem off Japan's coastline, has measured a three-fold increase in plastic particulate pollution between 1989 and 1999, and tenfold increases in the past two to three years.

Today, particulate pollution in the GPGP is at least as high as 100,000 pieces per square mile.

Facts in the water

The remote Midway Atoll lies at the north-eastern tip of the Hawaiian archipelago. Far from man, far from manufacturing plants and far from the prodigious demands of modern culture, Midway should, by definition, exemplify a storybook desert island.

It is anything but. Surrounded by the GPGP, Midway could be mistaken for a landfill site. Its beaches are littered with the harsh reality of extreme pollution, as carcasses jostle with coke bottles and clumps of fishing nets lie discarded like seaweed. An important albatross rookery, 40 per cent of fledglings hatched on Midway never leave the island, instead dying from starvation.

Captain Moore's gruesome photo library bears

A rubbish diet? The contents of an albatross's stomach

The six-pack stomach ideal – not so healthy for sea turtles

A tiny trumpetfish caught in a net of human waste

Plastic facts

Almost every aspect of our lives is touched by plastics, so much so that:

- In 1979, the manufacture of plastic overtook that of steel.
- Today we use 20 times more plastic than we did 50 years ago.
- Each year, 100 million tonnes of plastic are used worldwide.
- We each dispose of 185lb of plastic every year.

So, is biodegradable plastic the answer? In short, no. While bio plastics have an application in modern life (especially in farming), they are limited in their effect. They require high temperatures, a very specific pH and high levels of light to decompose, but such conditions rarely occur in natural environments, let alone sea, where there are lower temperatures and levels of sunlight. In an ocean environment, as in a landfill, biodegradable plastic will remain intact, causing damage to wildlife and ecosystems for many years.

macabre testimony to the first-hand effects of seaborne plastic. Decomposed albatross bodies, their bloated stomachs exposing horrific last meals of lids, nurdles and cigarette lighters, compete for space beside unrecognisable turtles, their shells disgustingly disfigured from a life with six-pack beer holders lodged tight around their middles.

Whether it be an algae-sifting whale or a fish-eating seal, small pieces of plastic are mistaken for food at all levels of the chain. Algalita researchers have seen styrofoam cups with bites taken out of them because they have the same texture as food. Indeed, recent media coverage of washed-up rubber ducks from a massive dump in the Pacific over a decade ago show telltale bite marks to their necks and abdomens. Nurdles of all colours and sizes fool jellyfish, birds and fish into ingesting them, blocking digestive and respiratory tracts and competing with scant nutrients for a place in their stomachs. Microplastics have even come to be known as 'plastic plankton' – a befitting but twisted name to billions of indiscriminate filter feeders.

The figures speak for themselves – Greenpeace estimates that one million birds and 100,000 marine mammals die in the Garbage Patch each year. Individual species are quite literally on the brink of extinction, the onset of which can be attributed solely to plastic interference.

'We have counted more than 100,000 Laysan Albatross deaths in a single year and it won't be long until species become extinct – there is a whole list of endangered species and it is getting longer,' says Moore. The species Captain Moore worries about most is the Hawaiian Monk Seal, which he says 'faces certain extinction if things don't change'.

It is not for lack of effort. But without removing plastic from oceans, or halting their entry into the marine environment in the first place, rescuers are fighting a losing battle. 'It is tragic... It is so sad to see hard working animal rescue centres treat animals and release them, only to find them washed up in nets a few months later,' says Moore.

Toxic sponges

Quite apart from physical implications, the biological impact is enormous. Not only can larger plastic objects entrap, entangle and entwine pelagic wildlife, they also act as floating islands and play a role in the colonisation of potentially poisonous new habitats. Man-made toxins freely migrate both in and out of plastics, and small plastic particles with high surface areas have the ability to absorb and transport a million times the concentration of hydrophobic toxic chemicals (such as DDT and PCBs) than that of ambient water.

Perhaps most disturbingly, plastics have the capacity to leach out the chemical compounds associated with their production. So much so that the US Food and Drug Administration used to term plastics 'indirect food

additives'. Plastics expert Paul Goettlich of mindfully.org is a harsh critic of the current regulatory structures (or lack thereof) for dealing with the production of plastics and their chemical components. Despite what we are led to believe, he explains, 'the [plastic production] process is never 100 per cent perfect. Logically then, there are always toxicants available for migration into the many things they contact' – whether these points of contact be seawater, fish, birds or mammals.

Ironically, where man has failed to clear these fine-grained toxic sponges from the oceans, nature has erroneously stepped in. As Moore puts it '...an astronomical number of vectors for some of the most toxic pollutants known are being released into an ecosystem dominated by the most efficient natural vacuum cleaners nature ever invented – the jellies and salps living in the ocean. After those organisms ingest the toxins, they are eaten in turn by fish, and so the poisons pass into the food web that leads, in some cases, to human beings.'

The most common group of such chemicals are proven endocrine disrupters. These substances interfere with the function of natural hormones, the most dangerous manifestations of which are reproductive disorders and cancer. On land, studies show that reproducive problems in sentinel species such as amphibians and birds – species that reflect the health of their ecosystem – are giving us all the warning signs we need, whilst the toxic effects of PCBs in humans is well-documented, going back to work-related exposure in the 1930s.

The plastic goods market is expanding at a far faster rate than the infrastructure to deal with waste plastic. Perhaps unsurprisingly, it may be that the lack of action can be traced to the relative economic dead-end posed by the problem. As Captain Moore puts it: 'There is no economic resource that would directly benefit from this process. We haven't yet learned how to factor the health of the environment into our economic paradigm. We need to get to work on this calculus quickly, because a stock market crash will pale in comparison to an ecological crash on an oceanic scale.'

Short of filtering every drop of the planet's water, there is little we can do to turn the tide on the GPGP. Workable solutions must lie in reducing our need and desire for plastic and its subsequent entry into the environment, but plastic consumption in Western Europe alone is currently increasing by four per cent each year.

Not in my back ocean

Though the Central Pacific may seem a million miles away, the GPGP is likely to exemplify the future of many marine areas. According to Richard Thompson of the University of Plymouth, while scales and densities differ, plastic pollution in Europe has increased sharply over the past 40 years. 'Locally, we find that patches of debris vary over time and depend on wind and tidal conditions. Concentrations of debris are found, but at smaller scales of resolution than the Garbage Patch. It is entirely possible that an accumulation similar to that could occur.'

So, where can we expect to see the next Garbage Patch forming? 'It is not so much about specific debris sink-holes,' Thompson warns. 'It is the fact that debris can collect in any number of hotspots around the world.'

Given that 40 per cent of the world's oceans are subtropical gyres, not to mention the many smaller ebbs and flows of sea currents, potential 'hotspots' are worryingly abundant.

Dive below the surface of the problem, and it becomes clear that there is yet another dimension to consider. A comprehensive study in Europe by Galgani *et al*, in 2000, recorded plastic debris during 27 oceanographic cruises and using submersibles down to 2,700m. The truth lurking in the depths was that some areas were contaminated with more than 100,000 items per square kilometre.

'A stock market crash will pale in comparison to an ecological crash on an oceanic scale'

There is no prospect of plastic particulate pollution going away quickly. Rather, two trends are likely to increase. Firstly, fne-grained, smaller plastic particles will proliferate through photodegradation. Although the potential environmental impact of smaller debris and 'plastic plankton' is relatively unknown, Algalita recently won a research grant, allowing the team to begin work on the effects of microplastics on zooplankton.

Secondly, seabed, deep-sea plastics will accumulate as larger objects are fouled and worn, altering their density and sinking. The UN estimates that 70 per cent of all seaborne plastic will eventually sink, sequestered to the depths of oceans where a toxic graveyard will fester.

As Bill MacDonald of Algalita says, 'People don't understand that what they do can affect the environment thousands of miles away.'

Perhaps they won't need to. The grim reality is that a plastic garbage patch may soon be coming to the waters near you.

Daisy Dumas is a freelance journalist

Captain Charles Moore of the Algalita Marine Research Foundation hauls deadly nets from the sea off the coast of Hawaii

Life, religion and everything

Biologist and author Rupert Sheldrake believes that the world's religions have a crucial role in restoring the earth's ecological balance. **Laura Sevier** meets the man trying to broker a better relationship between God, man, science and the natural world

A long, low drone fills the air. We are all chanting the same sound: OOOOOOOHHHHHHHH. Whistling overtones start to ring out above the group sound and then a lone female voice sings out:

Where I sit is holy
Holy is the ground
Forest mountain river listen to my sound
Great spirit circling all around.

The voice then invites everyone to join in and we sing this verse seven or eight times. Then there is silence.

It's not often you attend a talk given by an eminent scientist that begins with a session of Mongolian overtone chanting followed by a Native American Indian song about the holiness of the earth. It's especially surreal given that we're sitting on neat little rows of chairs in a Unitarian Church in Hampstead, in London.

I was there to listen to renowned English biologist Rupert Sheldrake talk about how the world's religions can learn to live with ecological integrity. The chanting, it appears, is the warm-up act, led by Sheldrake's wife, Jill Purce, a music healer.

So far so extraordinary, but then Sheldrake is no ordinary man. A respected scientist from a largely conventional educational background, he's devoted much of the past 17 years of his life to studying the sort of phenomena that most 'serious' scientists dismiss out of hand, such as telepathy, our 'seventh sense'. But religion? Given the current trend for militant atheism within science, I'm amazed. Besides, isn't religion incompatible with science? Not according to Sheldrake, an Anglican Christian. 'One of my main concerns is the opening up of science. Another is exploring the connections between science and spirituality,' he says.

His take on religion – and science – is refreshingly unorthodox precisely because it factors in a crucial new element: nature. 'The thrust of my work is trying to break out of the mechanistic view of nature as inanimate, dead and machine-like.' In fact his 1991 book *The Rebirth of Nature: the Greening of Science and God* (Inner Traditions Bear & Company, £11.99) was devoted to showing 'how we can once again think of nature as alive' – and sacred.

> 'Our culture seems to have lost any idea of the land being alive and sacred, and values it only in economic terms'

The sacred earth

Our culture seems to have lost touch with any idea of the land as being alive and sacred and anyone who considers it to be so is often branded a tree-hugging hippie and treated with ridicule or suspicion. Land is mostly valued purely in economic terms. Yet no value is attributed to the irreplaceable benefits derived from the normal functioning of the natural world, which assures the stability of our climate, the fertility of our soil, the replenishment of our water.

Religion has, until recently, remained pretty quiet on the issue.

As Edward Goldsmith wrote in the *Ecologist* in 2000, mainstream religions have become increasingly 'otherworldly'. They have 'scarcely any interest' in the natural world at all. Traditionally, religion used to play an integral role in linking people to the natural world, imbuing people with the knowledge and values that make caring for it a priority. 'Mainstream religion' Goldsmith wrote 'has failed the earth. It has lost its way, and needs to return to its roots.'

So if the world's religions are to play a part in saving what remains of the natural world, they not only need to return to their roots but also to confront the threat and scale of the global ecological crisis we now face. This means being open to a dialogue with science. 'No religions, when they were growing up, had to deal with our present situation and ecological crisis,' says Sheldrake. 'People thought they could take the earth more or less for granted. Certainly the idea that human beings could transform the climate through their actions was unheard of. This is a new situation for everybody, for religious people and scientists, for traditional cultures and modern scientific ones. We're all in this together.'

Environmental sin

'Religion and Ecology' is now a subject of serious academic study. The Forum on Religion and Ecology at Yale University, for example, recently explored the ecological dimension of

all the major world religions. The ongoing environmental crisis has sparked a 'bringing together' of the world's religions in a series of interreligious meetings and conferences around the world on the theme of 'Religion, Science and the Environment', exploring the response that religious communities can make. These brought together scientists, bishops, rabbis, marine biologists and philosophers in a way that, according to Sheldrake, 'really worked'.

Within many religions, including all branches of Christianity, there's an attempt to recover that sense of connection with nature. 'There's a lot going on,' says Sheldrake, 'even within the group seen as lagging the furthest behind – the American Evangelicals, who are somewhat retrogressive in relation to the environment.'

> 'Nature informs us and it is our obligation to read nature as you would a book, to feel it as you would a poem'

Some evangelicals who believe in the Rapture and think the world is soon to end have expressed the view that there's no point in attempting to save the environment because it's all going to be discarded like a used tissue.

But a more environmentally friendly view is held by the Evangelical Environmental Network (EEN), a group of individuals and organisations including World Vision, World Relief and the International Bible Society. An Evangelical Declaration on the Care of Creation, its landmark credo published in 1991, begins: 'We believe that biblical faith is essential to the solution of our ecological problems... Because we worship and honour the Creator we seek to cherish and care for the creation. Because we have sinned, we have failed our stewardship of creation. Therefore we repent of the way we have polluted, distorted or destroyed so much of the Creator's work.'

It then commits to work for reconciliation of people and the healing of suffering creation.

The belief that environmental destruction is a sin isn't a new concept. The spirituality of native American Indians, for instance, is a land-based one. In this culture, the world is animate, natural things are alive and everything is imbued with spirit.

In the words of John Mohawk, native American chief: 'The natural world is our Bible. We don't have chapters and verses; we have trees and fish and animals... The Indian sense of natural law is that nature informs us and it is our obligation to read nature as you would a book, to feel nature as you would a poem, to touch nature as you would yourself, to be part of that and step into its cycles as much as you can.'

Most importantly, environmental destruction is seen as a sin.

Loss of the sacred

The question is, how did we lose the sacred connection with the natural world? Where did religion and culture go wrong? According to Sheldrake, the break began in the 16th century. Until then there were pagan festivals, such as May Day, that celebrated the seasons and the fertility of the land; there were nature shrines, holy wells and sacred places.

But with the Protestant Reformation in the 16th century there was an attempt by the reformers, who couldn't find anything about these 'pagan' practices in the Bible, to stamp them out. In the 17th century the Puritans brought a further wave of suppression of these things – banning, for example, Maypole dancing (Maypoles being a symbol of male fertility). 'There was a deliberate attempt to get rid of all the things that connected people to the sacredness of the land and it largely succeeded,' says Sheldrake.

Another factor he believes severed our connection is the view of nature as a machine. 'From the time of our remotest ancestors until the 17th century, it was taken for granted that the world of nature was alive, that the universe was alive and that all animals were not only alive but had souls – the word "animal" comes from the word "anima", meaning soul. This was the standard view, even within the Church. Medieval Christianity was based on an animate form of nature – a kind of Christian animism.'

But this model of a living world was replaced by the idea of the universe as a machine, an idea that stems from the philosophy of Rene Descartes. Nature was no more than dead matter and everything was viewed as mechanical, governed by mathematical principles instead of animating souls.

'This mechanistic view of nature,' Sheldrake says, 'is an extremely limiting and alienating one. It forces the whole of our understanding of nature into a machine metaphor – the universe as a machine, animals and plants as machines, you as a machine, the brain as a

Hinduism

- The Vedas (ancient Hindu scriptures) describe how the creator god Vishnu made the universe so that every element is interlinked. A disturbance in one part will upset the balance and impact all the other elements.
- Three important principles of Hindu environmentalism are *yajna* (sacrifice), *dhana* (giving) and *tapas* (penance).
- *Yajna* entails that you should sacrifice your needs for the sake of others, for nature, the poor or future generations.
- *Dhana* entails that whatever you consume you must give back.
- *Tapas* commends self-restraint in your lifestyle.
- Mother Earth is personified in the Vedas as the goddess Bhumi, or Prithvi.
- Hindu businessman Balbir Mathur, inspired by his faith, founded Trees for Life (www.treesforlife.org), a non-profit movement that plants fruit trees in developing countries, to provide sustainable and environmentally-friendly livelihoods.

Islam

- Allah has appointed humankind *khalifah* (steward) over the created world.
- This responsibility is called *al-amanah* (the trust) and Man will be held accountable to it at the Day of Judgment.
- The Qur'an warns against disturbing God's natural balance: 'Do no mischief on the earth after it hath been set in order' (7:56).
- Shari'ah (Islamic law) designates *haram* zones, used to contain urban development in protection of natural resources, and *hima*, specific conservation areas.
- The Islamic foundation for ecology and environmental sciences www.ifes.org.uk publishes a newsletter called *Eco Islam* and organised an organic *iftar* (the evening meal during Ramadan) in 2006.
- In 2000, IFEES led an Islamic educational programme on the Muslim-majority island of Misali, in response to the destruction to the aquatic ecosystem by over-fishing and the use of dynamite in coral reefs. The environmental message based on the Qur'an initiated sustainable fishing practices.

machine. It's a very man-centred metaphor, as only people make machines. So looking at nature in this way projects one aspect of human activity onto the whole of nature.'

It is this view, he says, that led to our current crisis. 'If you assume that nature is inanimate, then nothing natural has a life, purpose, or value. Natural resources are there to be developed, and the only value placed on them is by market forces and official planners. And if you assume that only humans are conscious, only humans have reason, and therefore only humans have true value, then it's fine to have animals in factory farms and to exploit the world in whatever way you like, and if you do conserve any bit of the earth then you have to conserve it with human ends in mind. Everything is justified in human terms.'

The mechanistic theory has become a kind of religion that is built into the official orthodoxy of economic progress and, through technology's successes, is now triumphant on a global scale. 'So,' says Sheldrake, 'this combination of science, technology, secular humanism and rationalism – all these philosophies that dominate the modern age – open the way for untrammelled exploitation of the earth that is going on everywhere today.'

The living universe

It seems like a pretty bleak vision. But there is an alternative: to allow our own experience and intuition to help us see nature and the universe as alive. 'Many people have emotional connections with particular places associated with their childhood, or feel an empathy with animals or plants, or are inspired by the beauty of nature, or experience a mystical sense of unity with the natural world,' Sheldrake says. 'Our private relationship with nature presupposes that nature is alive.'

In other words, we don't need to be told by science, religion or anyone that it is alive, valuable and worthy of respect and reverence. Deep down, we can feel it for ourselves. Many people have urges to get 'back to nature' in some way, to escape the confines of concrete and head for the hills, the sea, a park or even a small patch of grass. These impulses are moving us in the right direction.

Another way forward is through new revolutionary insights within science. 'Science itself is leading us away from this view of nature as a machine towards a much more organic view of living in the world,' says Sheldrake. 'The changes are happening in independent parts of science for different reasons, but all of them are pointing in the same direction: the view of a very organic, creative world.'

The big bang theory gives a new model of the universe that is more like a developing organism, growing spontaneously and forming totally new structures within it. The concept of quantum physics has broken open many of our ideas of the mechanistic universe. The old idea of determinism has given way to indeterminism and chaos theory. The old idea of the earth as dead has given way to Gaia, the living earth. The old idea of the universe as

Judaism

- The Torah prohibits harming God's earth: 'Do not cut down trees even to prevent ambush, do not foul waters, or burn crops even to cause an enemy's submission' (Devarim 20:19)
- It teaches humility in the face of nature: 'Ask the beasts, and they will teach you; the birds of the sky, and they will tell you; or speak to the earth and it will teach you; the fish of the sea, they will inform you' (Job 12:7-9)
- The Talmudic law *bal tashchit* (do not destroy) was developed by Jewish scholars into a series of specific prohibitions against wasteful actions.
- The Noah Project (www.noahproject.org.uk) is a UK-based Jewish environmental organisation, engaged in hands-on conservation work, and promoting environmental responsibility by emphasising the environmental dimensions of Jewish holidays such as Tu B'Shevat (New Year of the Trees).

Christianity

- Genesis gives a picture of God creating the heavens and earth – and when it was all finished, 'God saw all that he had made, and it was very good.' (1:31) Having made man, he 'put him in the Garden of Eden to work it and take care of it' (2:15).
- Romans 8:19-22 has been interpreted as a message of redemption for the environment, calling on Christians to work towards the time when 'the creation itself will be liberated from its bondage to decay'.
- At the UN Rio Earth Summit in 1992, the World Council of Churches formed a working group on climate change. Their manifesto expresses a concern for justice towards developing countries, who are disproportionately affected by climate change, to future generations and to the world.
- www.christian-ecology.org.uk represents Churches Together in Britain and Ireland. It includes links and a daily prayer guide with references both to the Bible and to scientific and news data. Operation Noah is the climate change campaign.

uncreative has given way to the new idea of creative evolution, first in the realm of living things, through Darwin, and now we see that the whole cosmos is in creative evolution. So, if the whole universe is alive, if the universe is like a great organism, then everything within it is best understood as alive.

Encouraging dialogue

This has opened up new possibilities for a dialogue between science and religion. 'These changing frontiers of science are making it much easier to see that we're all part of, and dependent on, a living earth; and for those of us who follow a religion, to see the living God as the living world,' says Sheldrake. Such insights breathe new meaning into traditional religions, their practices and seasonal festivals.

For example, all religions provide opportunities for giving thanks, both through simple everyday rituals, like saying grace, and also in collective acts of thanksgiving. These expressions of gratitude can help to remind us that we have much to be thankful for. But as Sheldrake points out, 'It's hard to feel a sense of gratitude for an inanimate, mechanical world.'

Helping people see the land as sacred again, Sheldrake maintains, is one of the major roles of religion. 'They all point towards a larger whole: the wholeness of creation and a larger story than our own individual story. All religions tell stories about our place in the world, our relation to other people and to the world in which we live. In that sense all religions relate us to the earth and the heavens.'

Sheldrake thinks we need stories: 'It's

part of our nature. Science gives us stories, too – the universe story. So does TV, fiction, books.' And these stories, in his view, unify us in a way that, for instance, some New Age practices (such as personal shrines) don't. While those things have personal value, they don't have the unifying function that a traditional religion does. 'When you go to a Hindu festival or pilgrimage, you see thousands of people coming together, the whole community united by a common story or a celebration of a sacred place.'

The fascinating thing about Rupert Sheldrake is his ability to assimilate ideas from an array of different subjects that are normally kept separate, draw new connections and conclusions and open up new dialogues. He's certainly not afraid to explore new territory or use new metaphors. Thus the big bang is like 'the primal orgasm' or like 'the breaking open of the cosmic egg'.

When talking about the discovery that 95 per cent of the universe is 'dark matter' or unknown, he says, 'it is as if science has discovered the cosmic unconscious'. He embraces the idea of 'Mother Nature' – in fact he believes the old intuition of nature as Mother still affects our personal responses to it and conditions our response to the ecological crisis. 'We feel uncomfortable when we recognise that we are polluting our own Mother; it is easier to rephrase the problem in terms of "inadequate waste management".' He sees the green movement as one aspect of 'Mother Nature reasserting herself, whether we like it or not.'

One of the most significant implications of Sheldrake's worldview is that it connects people to the natural world and 'if people feel more connected to the world around them, they might be less likely to accept its destruction,' he says. Reframing our view to encompass a world that is alive also, effectively, puts humans back in our proper place in the scheme of things.

Sheldrake's scientific and philosophical investigation is fuelled by a passionate concern for all of life, and his vision of life expands to the cosmos. If the earth is alive, if the universe is alive, if solar systems are alive, if galaxies are alive, if planets are alive, then causing harm to any of these systems really is a sin; one that we have committed all too willingly for far too long.

Laura Sevier is a freelance journalist and regular contributor to the *Ecologist*.

Buddhism

- Buddhist religious ecology is based on three principles: nature as teacher, as a spiritual force, and as a way of life.
- Buddhists believe that nature can teach us about the interdependence and impermanence of life, and that living near to and in tune with nature gives us spiritual strength.
- Buddha commended frugality, avoiding waste, and non-violence.
- Buddhists believe that man should be in harmonious interaction with nature, not a position of authority.
- Philosopher Dr Simon James, based at Durham University,has studied the Buddhist basis of environmentalism and virtue ethics. A spiritually enlightened individual shows compassion, equanimity and humility – qualities that are intrinsic to an environmentally friendly lifestyle.
- The Zen Environmental Studies Institute (www.mro.org/zesi) in New York runs programmes in nature study and environmental advocacy, informed by Zen Buddhist meditation.

Baha'ism

- Bahá'u'lláh, founder of the Baha'i faith and regarded as a messenger from God, stated 'nature is God's Will and is its expression in and through the contingent world' (the Tablets of Baha'u'llah).
- Baha'is believe that the world reflects God's qualities and attributes and therefore must be cherished.
- The Baha'i Office of the Environment states: 'Baha'u'llah's promise that civilisation will exist on this planet for a minimum of 5,000 centuries makes it unconscionable to ignore the long-term impact of decisions made today. The world community must, therefore, learn to make use of the earth's natural resources... in a manner that ensures sustainability into the distant reaches of time.'
- The Barli Rural Development Institute in India was inspired by Baha'i social activism. It has trained hundreds of rural women in conservation strategies such as rainwater harvesting and solar cooking.
- www.onecountry.org is the newsletter of the Bahai international community.

- **Rupert Sheldrake**: www.sheldrake.org
- **Forum on Religion and Ecology**: http://environment.harvard.edu/religion – the ecological dimension of various religions
- **The Alliance of Religions and Conservation** (ARC): www.arcworld.org

The International Humanity Foundation (IHF) is a grass roots organisation that has set up education centers and orphanages for some of the most disadvantaged and marginalized children around the world. IHF offers these children an opportunity to rise out of poverty and escape from the threat of mafia, child labor and child marriage, malnourishment and starvation. Without outside help many of these children face a very bleak future.

An important aspect of IHF is promoting self-sufficiency in the communities they work in, primarily by educating the children in English, Mathematics and I.T, but also with their 'pass it on' ethos. 'Pass it on' is an informal contract among the recipients of IHF's support, that they will go on to help others in the future.

Because IHF is a non-profit organisation, it is completely dependent upon community support through volunteers and donations. Without this support IHF could not carry on caring for and educating these desperate children.

For just £15 ($30) a month, you could provide for a class of 20 students. 100% of your money will go straight to helping IHF's children. Please visit our website and consider donating today.

www.ihfonline.org

International Humanity Foundation 501c3/tax exempt/non-profit

Are you driving

The UK and Europe's demand for carbon-saving biofuel is leaving a trail of human and emvironmental devastation in its wake. **Kelly Nicholls and Stella Campos** investigate

Colombian farmer Jorge Garcia gazes at fields of African oil palm stretching to the horizon and beyond. He doesn't share the world's excitement about 'green' fuel, nor understand why his government, with the support of the US government, the European Union (EU) and the World Bank, is aggressively pushing the establishment of vast 'biofuel' plantations, despite serious human rights abuses, links to terrorist groups, allegations of money laundering and environmental damage. He recalls the days when he and his family lived in those same lands and farmed their own food. That was before the paramilitaries came, demanding that they leave or face the consequences. Jorge has already suffered the consequences. Two of his children have been killed, as have friends who fought against the illegal occupation of their land by African oil palm companies.

The African oil palm industry is booming in Colombia and there are plans to expand it, to meet the growing world demand for green fuel, naively considered a carbon-neutral, environment-friendly energy source. The Colombian government is also promoting such plantations as a way to combat the ever-spreading illicit cultivation of coca and poppies. The ostensible aim is to help the country's poor by providing an alternative means of subsistence. Conveniently forgotten is that just a fraction of the rural population is needed to work these plantations and the majority have to leave in droves. The handful that remain as employees of the palm oil corporations either get paid poor wages or are paid in credits and vouchers; they may then be forced to purchase basic goods at inflated prices from stores run by the paramilitaries.

The US government is fulsome in its support for Colombia's African oil palm enthusiasm; up to 60 per cent of USAID funding for the war-ravaged country has been targeted towards the cultivation of that single crop. The EU, World Bank and the Inter-American Development Bank have also funded African oil palm projects in Colombia.

Nearly 60 years ago, in 1949, the newly-fledged World Bank sent economist Dr Lauchlin Currie to head an economic mission to Colombia. In 1961, he published *Operación Colombia*, in which he wrote: 'Colombia's real rural problem is an excess rural population... This excess should be transferred, *forcibly if need be*, [my italics] to the large cities and employed in public works in order to create increased consumer demand, which in turn would be met by increased industrialisation. Colombian agriculture would, meanwhile, be intensively mechanised and the remaining rural population would be employed by these large mechanised operations.'

More than 40 years' later, Álvaro Uribe's Colombian government, with US support, has clearly taken the message to heart.

Fuel to the fire

In March 2007, President Bush visited Colombia – a brief, low-key visit that didn't even last a day. Why the visit? Bush was selling the idea of Latin America becoming the 'green fuel' centre of the world, with Brazil number one and Colombia, perhaps, South America's number two. And Presidents Lula of Brazil and Uribe of Colombia were buying into that.

Over the next decade, the USA hopes to have at least 20 per cent of the fuel used in its

Photography: Jorge Mata / SURIMAGES

From left to right: Two Afro-Colombians reclaim their land and proclaim it an area of bio-diversity; giant drainage canals are typical of the plantations and devastating to the environment; graffiti warning of 'death' left by the army and the paramilitaries after destroying the community of Andalucia; Carlos Mario Jimenez, member of the hgh command of the paramilitary group United self-defence of Colobia (AUC)

on blood fuel?

vehicles derived from vegetation. The aim is not so much to combat global warming, which is the rationale of using biofuels in Europe. Instead it is to give some security of supply against a volatile Middle East and an increasingly intransigent Venezuela, with President Chavez more interested in supplying Castro's Cuba than in supporting the 'gas-guzzling' habits of a hostile country.

US plans to convert corn into ethanol from the maize-lands of the Midwest are revealing themselves to be a sham, as one test after another shows a net loss of energy, when all factors – including fertilisers, herbicides, use of machinery, processing and transportation to the point of use – are taken into account. Essentially, that means more fossil fuels are consumed than are saved, at least in the context of North American corn. But why should US farmers worry? They receive subsidies of up to 90 per cent for their role in giving the USA fuel security.

The story is different in the tropics, where biofuels derived from sugar cane, African oil palm, soya or castor beans, give a net energy return. But of course, that equation doesn't take into account the lasting damage to soils, to climate and to the environment, caused by monoculture plantations.

A day after Bush's visit, President Uribe reminded Colombia that he had already pinpointed several million hectares in the flat savannah plains of the Orinoco region, north of the Amazon and adjoining Venezuela, that could be suitable for biofuel plantations and, in particular, African oil palm. The first phase, covering a million hectares, was planned for the Department (province) of Vichada, with funding to be derived from European banks.

Corruption rules

By Colombian law, unclaimed lands belong to the nation and can be allocated only to farmers who can prove that they have been using the land for a minimum of five years and are exploiting at least 80 per cent of the area (see page 48). The amount granted per family is a subsistence plot which, in the case of the Department of Vichada, is a maximum of 1,294 hectares.

Land grants are booming. As *Semana*, the most prestigious Colombian weekly magazine, noted in April 2007, 'while in the year 2004 title was granted to 43 plots and in 2005 to 15, in the year 2006 the national institute for rural development (Incoder) granted title to 277 unclaimed plots.' But the land doesn't always go to those legally entitled to it.

Habib Merheg, Senator for the Andean Department of Risaralda – and therefore living far from Vichada, in the Colombian plains – bought the title to 2,400 hectares, despite not having met the time requirements.

That wasn't all. In 2006, people employed by him, including his secretary, his lawyer and some of his business partners, 13 in all, were granted title in record time to 16,330 hectares of 'unclaimed' land, an area about half the size of Bogotá, with its eight million inhabitants. Soon after that,18 other persons from Merheg's constituency received 21,805 hectares in the same Vichada region. Contrast that with local farmers who had been waiting years to receive rights to the same land, which they had been working, and who now find themselves landless.

Fellow senator Pilar Córdoba claims that Merheg has links to the paramilitary, inasmuch as the land that he and his associates now occupy was controlled for a long time by groups who processed drugs in the region.

The scandal of Merheg is nothing new for a country where paramilitaries have permeated every level of society, up to the top echelons of government.

Paramilitaries came into being more than 20 years ago to fight the guerrillas, in particular the FARC (Fuerzas Armadas

US President George W Bush during his visit to Colombia,in a press conference with Álvaro Uribe Velez, President of Colombia, in the Nariño Palace

Revolucionarios de Colombia) and – mafia-like – to protect private landowners, businesses and, not least, cocaine cartel bosses such as Ochoa and Escobar.

Since then they have engaged in a brutal regime of land-grabbing from local peasants as well as from indigenous and minority groups. Should anyone resist, they or members of their family might be made to disappear, like the *desaparecidos* of Argentina or Chile. Or they might be tortured and killed in front of their families and the community. Not even children and babies are immune from such atrocities and yet, too often, the government has looked the other way.

Violence and corruption

Particularly affected have been the Afro-Colombians, who constitute about 26 per cent of the total population of Colombia and 85 per cent of the Pacific population in the Chocó, a region with some of the world's wettest rainforests and richest biodiversity. Community members in Tumaco, in Colombia's south-west corner, tell stories of armed actors coming to their doors and telling them they had three days to leave their land or they and their families would suffer. Sometimes they would be offered a small payment, insufficient to sustain them and their families. Often, they get nothing.

By no means are all the African oil palm companies tainted with corruption and malpractice. Yet nowhere has their hand-in-glove relationship with the paramilitaries been as overt as in Jiguamiandó and Curvaradó, in the Department of Chocó. Vicente Castaño, the leader of the area's paramilitaries (a group classed as a 'terrorist' organisation by the US government), bragged that he was responsible for bringing African oil palm companies to the area and that he and his paramilitary group had become the legal owners of African oil palm plantations. Meanwhile, the people of Jiguamiandó and Curvaradó have suffered more than 110 assassinations and disappearances since 1996, as well as forced displacement and constant threats.

> 'On arriving, the paramilitaries decapitated the local pastor and forced members of the community to watch as they played football with his head'

The paramilitaries' arrival in the region in May 1997 is scarred deep in people's memories. They decapitated the local pastor, then forced members of the community to watch as they played football with his head. They then advised the community to leave the area. Nearly six thousand people fled.

Four years later, after reclaiming the collective titles to the land from which they had been displaced, members of the community made the journey back to their homes. Where once had been their gardens and tropical rainforest there were vast tracts of African oil palm. And, as if the past had never been, the paramilitaries were again threatening the communities, forcing them to continue growing the palm or leave. In fact, the paras compounded the illegal clearance of the forest by the illegal extraction and selling of timber.

International and national human rights organisations, including the Inter-American Court of Human Rights, have denounced Urapalma, the principal company working in the area, on the grounds that, with the help of army Brigade XV11 and armed civilians, it had illegally commandeered collectively titled land. But despite international attention and the 'demobilisation' of the paramilitaries, threats and violence continue. A recently formed paramilitary group, the 'Aguilas Negras', collaborates with African oil palm companies in terrorising the remaining population, with the national army and police just standing by.

Unionised employees of palm oil companies have also been industry victims. Colombia remains the most dangerous place in the world to be a trade unionist or social movement leader. In 2001, 90 per cent of all trade unionists killed worldwide were Colombian.

Over the past 10 years, nine prominent trade unionists in the oil palm industry have been assassinated. A unionist from Puerto Wilches, an oil palm growing town in an area now controlled by paramilitaries, says, 'The African oil palm companies constantly used illegally armed actors to threaten union members and silence resistance. They have cut workers' benefits and brought us to a point of slave labour.'

The violence against villagers and communities in Colombia continues apace, with some three million refugees forced from their homes since 1996. That number, some 10 per cent of the total population, puts Colombia second to the Sudan in terms of internally displaced people. The paramilitaries have been able to take control of land that never was theirs through disputing the rights of those who own land collectively, such as indigenous communities and Afro-Colombians. In recent years, some of the worst atrocities have taken place in Colombia's north-east, south-east and in the Putumayo.

'Legitimate' crops

Soil and climate studies show that Colombia has 3.5 million hectares that would be immediately suitable for growing African palm; the largest area, some two million hectares being in the Orinoco plains.

Another 2.5 million hectares could be made available after the land had been specially prepared. In 2005, Fedepalma, Colombia's African oil palm agency, reported that 275,000 hectares had been planted with the palm, of which 161,000 were in production and 114,000 in process of development. In 2006, 185,000 hectares were up and running, yielding some 685,000 tonnes of oil – just under two per cent of total world production.

Colombia has 53 plants for extracting the oil, with some 3,240,732 tonnes of fruit currently passing through the system. Currently, some 36 per cent of the oil is exported, mostly as unrefined oil, which is far cheaper to refine abroad (e.g. in Rotterdam)

than in Colombia (around $37 per tonne of crude, compared to $60).

The United Kingdom is the largest single importer of Colombian crude palm oil, taking up some 40 per cent of the total exported to Europe. Like other importers, the UK takes little or no account of the huge social and environmental cost involved in the production of palm oil, whether from Colombia or elsewhere. On the contrary, organisations concerned with an economic model of development, such as USAID, the World Bank and the Inter-American Development Bank, see horizon-to-horizon plantations of 'legitimate' crops, such as African oil palm or sugarcane, as good options for Colombia, enabling the government to impose control over regions afflicted with violence, conflict, lack of public order, illicit crops and confrontations with guerrilla forces.

Vanishing forests

Tatiana Roa, head of environmental and social action organisation Censat-Agua Viva, loudly condemns the spread of oil-palm plantations. 'The history of the plantations is painful, stained in the blood and tears of black and indigenous communities,' she says. 'It is the history of disappearing forests that turn into plantations. It is the history of age-old traditional cultures transformed into palm oil plantation workforces. It is these voices that are calling for a halt to the destruction spurred on by the defenders of biodiesel.'

The Colombian government has its eye on the Orinoco region and a mega-project to reforest 6.3 million hectares (twice the size of Belgium) with African oil palm and other species, so is simply avoiding the issue of environmental impacts. One project in the area around Puerto Carreño, involving Spanish engineering company Ingemas, Agroforestal de Colombia and Spanish renewable energy company ERPASA, is already underway. It involves planting 90,000 hectares with African oil palm and establishing a biodiesel plant in the north of Spain. It so happens that the region has 156 ecosystems, most of which will be destroyed, in the name of green, renewable energy.

In the Curvaradó region, the illegal planting of African oil palm has led to the extinction of an estimated 26 forest species and the loss of 28 other species. In a report, *The Cultivation of Palm Oil in the Chocó*, written for the European Commission, the authors point out that the clearing of forest leads to considerable increases in topsoil run-off, to disturbances in stream-flow and to increased sediment loads in rivers and streams. Loss of biodiversity is therefore a major consequence of substituting oil palm plantations for rainforest.

Permanent forest destruction and ensuing soil degradation can lead to as much as 180 tonnes of carbon per hectare being lost to the atmosphere in the form of greenhouse gases. A successful African oil palm plantation would take as much as 50 years before it had regained the carbon sent up in smoke.

Quite aside from the initial destruction of the ecosystem, the production of palm oil on a large scale has longer term environmental implications. In Malaysia, in 2001, according to Rhett A. Butler of mongabay.com, the production of seven million tonnes of crude palm oil generated 9.9 million tonnes of solid oil wastes, palm fibre and shells, as well as 10 million tonnes of palm oil mill effluent that, given the chance to contaminate, can have serious impacts on aquatic life. The use

of petroleum-based pesticides, herbicides and fertilisers contributes to greenhouse gas emissions and reduces still further the potential carbon gains. In Indonesia, says Butler, palm plantations are so damaging to the soil that they are abandoned for scrubland. The scrub in turn can act as tinder for wildfires.

If the UK complied with the EU's target of 5.5 per cent of its fuel derived from rapeseed by 2010, it would have to cover one-quarter of its arable land with that one crop alone. The EU, with a similar target, would need up to 18 million hectares. As a result, the European Commission plan is for half of biofuel energy to be home-grown and the rest to come from overseas.

The world's economy is currently expanding at about 4.5 per cent per year, and demand for oil is rising by around half that amount. Translated into barrels, demand is growing by 1.9 million barrels a day, projected to reach 95.8 million barrels a day by 2012, according to figures released by the International Energy Agency in July 2007. With concerns over oil-peaking, the rush is on to produce biofuels. That production, according to the report, is set to reach 1.75 million barrels a day by 2012 – not more than two per cent of the world's needs.

The greater part of that increase in production, as both the USA and the EU are coming to realise, will have to come from the tropics, from Malaysia, Indonesia, Brazil and Colombia. Not only is land – too often derived from chopping down the rainforest – dirt cheap, but labour is, too. Even more telling are the energy returns per hectare. If maize, as grown in the US Midwest, gives a bare 145kg of oil per hectare, with 80 per cent of the oil obtained being converted into ethanol, African oil palm gives a 30 times greater yield, with as much as 5,000kg of oil being obtained from the kernel and surrounding seed pulp, of which up to 80 per cent may be converted into biodiesel.

Malaysia, the world's largest supplier of palm oil, followed by Indonesia, can produce biofuel at a price of around $54 per barrel, which is certainly competitive with crude oil at $70 per barrel. Malaysia has dedicated almost half of its cultivated land to African oil palm and its exports to China alone are more than 3.5 million metric tonnes. Indonesia is gearing up to double its production by 2025 and has already cleared more than three million hectares of prime forest in East Kalimantan.

The idea that oil palm plantations in Colombia are likely to play a role in a process of peaceful economic development, is not simply naive, but is perverse in that it gives false legitimacy to acts of violence, whomever perpetrates them.

Multinational companies are increasingly being made aware of the human rights abuses and environmental degradation that is too often associated with the provenance of palm oil in their products. In part, perhaps, because of fears of a consumer backlash and legal ramifications, and in part because of the pursuit of ethical practice, a number of organisations, including Aarhus United, Golden Hope Plantations, the Malaysian Palm Oil Association (MPOA), Migros, Sainsbury's, Unilever and WWF, have got together to form the Roundtable on Sustainable Palm Oil (RSPO; www.rspo.org). The Roundtable has now expanded to include palm oil growers, processors and traders, manufacturers, retailers, banks and investors, and, not least, human rights and environmental organisations.

> 'The UK is the largest single importer of Colombian crude palm oil, taking up some 40 per cent of the total exported to Europe'

Towards sustainability

The human rights issues in Colombia and, in some regions and the felling of irreplaceable tropical forests while expropriating land from its rightful owners, to make way for African oil palm, make it essential that subscribers to the Roundtable and governments, not least the Colombian government, condemn a process that has no place in the civilised world.

A mechanism must be put into place, akin to the Forest Stewardship Council (FSC), to prevent imports of palm oil derived from unacceptable social, legal and environmental practice.

Consequently, the RSPO must move rapidly to create international legislation that, through certification, rewards good practice and boycotts abuses. That may add to the cost but hopefully will get a message through to those governments that currently condone malpractice elsewhere. The UK, as one of the main importers of palm oil from Colombia, could – and should – lead the way. E

Kelly Nicholls and Stella Campos are freelance journalists working in Colombia.

Jungle law

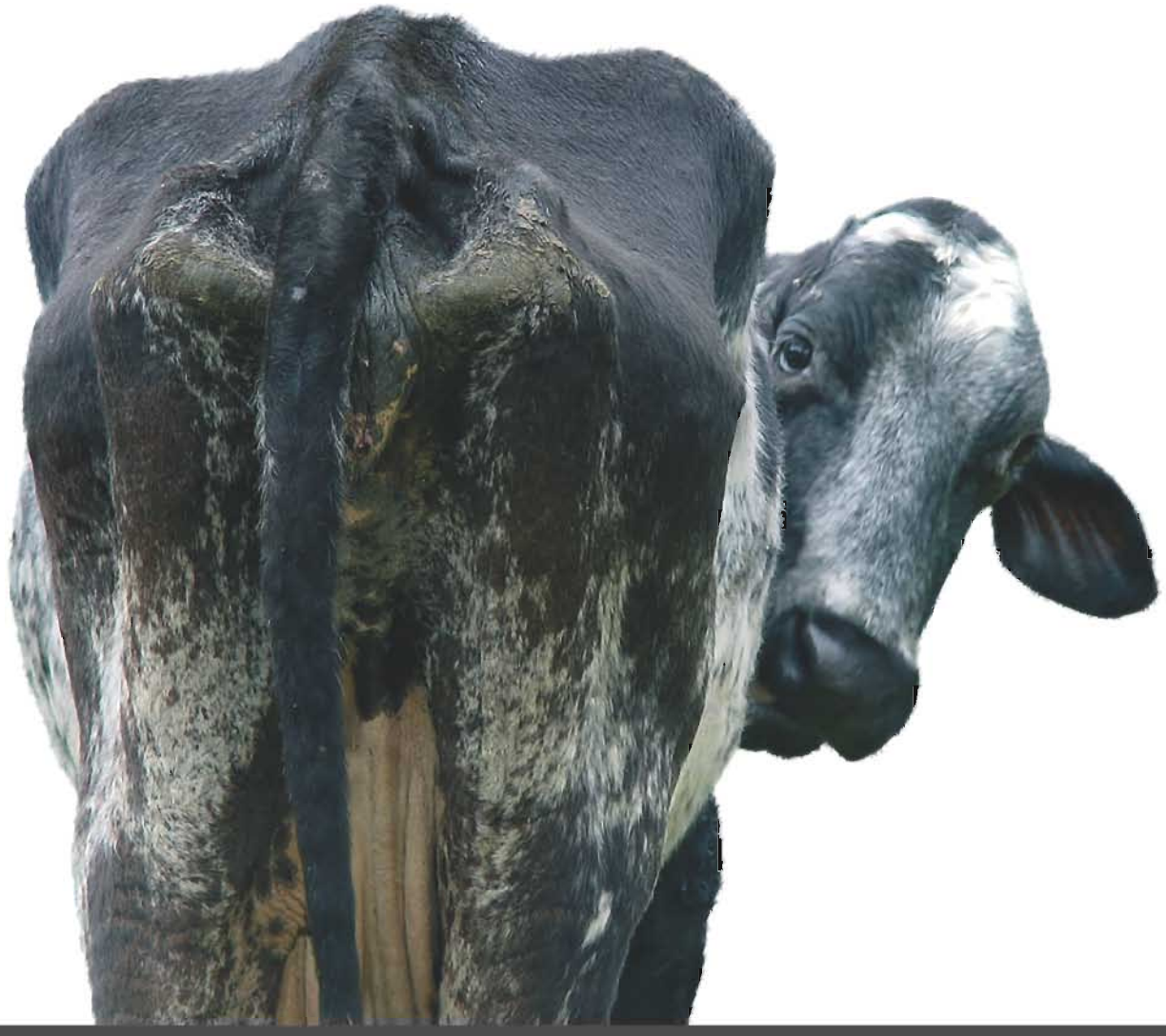
President Uribe's government has aided and abetted the displacement of his people by enacting legislation against smallholders. The new Statute of Rural Reform, approved by the Senate on 13 June 2007, is a 'fast track' law to grant ownership in areas where previous owners – many of whom had ancestral ties to the land and were formerly protected by the Constitution, but without documents to prove their rights – had been displaced.

Previous property laws, such as that of 1936, said that only titles issued by the state were proof of ownership; however, were it shown that the same group or family had lived on and worked land for 20 years prior to 1936, either with no title or a false title, they would be given legal recognition. In 1994, that same law granted ownership to those who had worked the land for at least 20 years prior to 1974. A 2002 law reduced this time to 10 years, thus recognising false titles up to 1984.

But the latest Statute declares that land that has been abandoned or not used productively for five or more years is *baldío*, 'empty land', and thus can be claimed by the new occupiers, especially if they can prove that they will be productive – with an African oil palm plantation, for example.

The displaced are forced to flee the paramilitaries

This favours the drug barons and the paramilitaries, who have already taken possession of some of the best lands in Colombia. Now they need hang on to the land they acquired illegally for just one quarter of the time that had been demanded in the past, in order to get entitlement. And, of course, once they have cleared the land of its legitimate inhabitants, they can claim that the lands were no longer occupied.



SILENT BUT DEADLY

Did you know that farmed animals produce more greenhouse gas emissions (18%) than the world's entire transport system (13.5%)? Or that nitrous oxide from animal manure is around 300 times as damaging to the climate as carbon dioxide? Or that methane (cow and sheep farts/burps to you and me) has 23 times the global warming impact of carbon dioxide?

Makes you think doesn't it?

The only genuine way to cut down on these harmful emissions is to stop eating meat.

Find out the facts about 'Why it's green to go vegetarian' at www.vegsoc.org/environment, or order your free booklet on 0161 925 2000, green@vegsoc.org

It's not just a lot of hot air.

Reference: Food and Agriculture Organisation of the United Nations. 2006.
Livestock's Long Shadow – Environmental Issues and Options

Vegetarian SOCIETY

Last days of the bazaar?

'Incredible India' is the slogan of India's booming tourist industry. But for how much longer? **Anna da Costa** goes in search of her roots and is both seduced and saddened, as globalisation begins to sweep all before it

India is a world unto itself, unlike any other: a land of noise, bustle, colour, smells (not all pleasant), tastes, affronts, pious devotion, delightful yet infuriating disorganisation, unbridled wealth and devastating poverty. Personal space is a foreign concept here... as is queuing. It is a country where anything is possible, where the lines between lives are blurred, and where, dare I say, Heaven and Earth have been known to meet. India, in the words of many, is an assault on the senses.

Yet India is far from static. As its economy booms and its population rockets, it is changing fast. Nowhere is this more evident than in its 14 million strong, cosmopolitan capital, Delhi. Here, tower blocks rise up daily, along with malls, clubs, restaurants and slums, as the sprawling city stretches outwards in all directions.

This rapid change has created a delightful and shocking mish-mash of contrasts, where new is seamlessly juxtaposed against old, where buffalo carts rub shoulders with 4x4s, where malls stand next to tin-roofed shacks, where cows amble along the road past Toni & Guy, and where traffic jams build up beside temples, as businessmen and pilgrims alike slow to show their respect to a silent divinity. You can get a mojito in a West End bar, along with Delhi's super-rich, and you can step into the heart of old Delhi and be absorbed by the ancient exotica of the spice market.

And filling all the spaces in between, there is the terrible poverty, which challenges every part of you. The shock of seeing another human being crawl across a busy street on hands and knees, to beg for one rupee (which is less than two pence), or some food, makes you question everything you have.

Yet despite its great many disparities, there are some things in India that somehow tie everyone together, and one of these is the cuisine, and more specifically it is the street food culture. As you travel through the streets of Delhi, small vendors' stalls and carts, bubbling and smoking, appear as if woven into the tapestry of the city plans; under trees, beside gates, in front of temples and next to department stores. Street food is ubiquitous in the city, and almost everyone partakes of its delights, whether they be high-flying businessmen stopping for lunch, or rickshaw drivers pausing for their morning *chai* and gossip. Whomever you are, it is ultra-low cost, delicious and an intrinsic part of India's dynamic culture.

Yet, earlier this year, it was decided by India's Supreme Court that the cooking of food on the streets of Delhi is now banned. This is not just some foods, this is all unpackaged cooked food, and all forms of cooking on site, except for boiling water for tea and coffee. According to Justice BP Singh, one of the two Supreme Court judges responsible for the ruling, the reasons are threefold. First, the presence of vendors on the streets is an inconvenience and hazard to pedestrians, particularly on narrow roads, as they take up the space for walking. Secondly, they occupy a large amount of space, far more than they are allotted legally, and thirdly, much of the food is accused of being unhygienic, at times prepared with unclean water, in the presence of flies and dust, and served in unsanitary vessels.

All vendors, of which there are an estimated 300,000 in Delhi, must now apply for a licence in order to sell food, and can only occupy allocated sites, of which there will be far fewer. Cooking will only be allowed in food courts – specially designated areas that have all of the necessary amenities, explained Justice Singh: 'Water, electricity, toilets and parking facilities'.

He has a point. Street food has often been linked with the so-called 'Delhi belly', particularly amongst travellers, and this can be as nasty to contract as hepatitis A or typhoid. However, this risk doesn't seem to stop people eating the food; and those who do, often have their favourite vendors, whom through experience they have come to find

Above, from left: Kailash sells delicious Dal Mung. Jelabas, a deep-fried sugary treat; and their maker, Rama Bhardwaj. The trade of street food vendors like these has now been banned

safe. Common-sense self-regulation. In fact, a recent study found that street food in India is typically no less hygienic than much of its fast food. Furthermore, many of the locals who eat the food have much greater immunity to the pathogens therein, and don't suffer the same result as those of us whose gut flora aren't accustomed to it.

Chadni Chowk is one of the street food centres of Delhi. Here, vendors line the streets, cooking smells fill the air and incense smoke rises over the teetering food stands, warding off invading flies. Smells, colours, shouts and textures all mingle with the hubbub of the streets, which are alive with people.

Close to the Metro station, Kailash sells Dal Mung, for five rupees (6.25 pence) a plate, as he has done for the past 16 years. As we waited, the ever-present incense wafted across the netted yellow-green pulses, smoking away flies and midges, and lent an air of mystique to the dish that he served. It was mesmerising to watch him adeptly put it all together. Placing a large scoop of mung beans into a leaf-made dish, he added chopped tomato, cooked potato, chopped coriander, spices, lime juice and salt, before tossing the whole mix together with great finesse, and passing it to his waiting customer. He told us that he had heard about the ban, but had no option but to continue selling until forced not to. 'I can't go onto the road and beg, so what choice do I have?'

> 'Delhi's street food isn't just an amazing cultural experience, it's a necessity for thousands of people, to earn a living and to feed each other'

Further along, a small blackened brick stall by the side of the road, selling Jelabas, proved irresistible. A traditional Indian sweet, jelabas are made in a mesmerising process that gives off the most entrancing, sweet, oily smell. Giant golden spirals of tube-like batter are fried in boiling oil and then dipped in sugar syrup before being served straight from the pan, *garam garam* (very hot), on a torn piece of newspaper, into the hand, and then into the mouth... and my God, were they good! A warm crunch followed by hot, intensely sweet liquid, dripping and oozing. Heavenly.

The vendor, Rama Bhardwaj, told us that his small shop had stood on this site for more than 100 years. Jelabas with milk are apparently wonderful for headaches and colds; and, served with curd, a perfect remedy for stomach acidity. He smiled at our delight, and offered us water as we finished, to clean our hands and faces. Rama expects to do well from the ban, as the driving off of street vendors from the surrounding pavements

with no proper pitch would mean more customers for him.

In the midst of the market stands a tall, white Gurdwara (Sikh temple), set behind a cobbled square where, every day, cooked food is given to the poor for free. Many vendors are, similarly, just one step away from having to beg, but instead they eke out a living from selling all manner of weird and wonderful concoctions from tiny stands, often no bigger than a drum.

Pratap, together with his one-armed helper, Vinod, runs a very popular Dahi Bhalla stall. He had also heard about the ban, and said simply that when the time came, he would see what to do. He knew that his cooking equipment would be likely confiscated, but also felt he had no choice but to continue selling. He had been on this site for the past 10 years, and earned, in his words, 'just enough for my daily bread'.

The ban will of course have a wider impact. Cycle rickshaw puller Mahinder is 51 years old, and from Bihar (a Northern state, and one of the poorest in India). He has been working in Delhi for the past 20 years, sending money home to his family. He was worried about the ban, and told us that if he couldn't get food on the street, he would not be able to survive, being unable to afford food from restaurants. He earned on average 100Rs (£1.18) a day, of which 30 went on rent for his vehicle, and the rest was for food and saving. He and his colleagues had been told that within the next three months, the use of cycle rickshaws would also be banned in this area. If he could not work or eat, he would have to return to Bihar, where the only employment available was in the mines.

Delhi's own most famous brand of street food, Raj Kachori, is especially good. Made with a great variety of ingredients, it varies widely from vendor to vendor, each of whom adds his own special touch. A spherical case of batter, filled with potato, sweet curd, shao, spices, sweet and sour green and brownish sauces and dotted with a few gems of bright red pomegranate... As you press down on the circular pastry case it explodes like a savoury bomb, and its streaked white insides spilled outwards onto the plate.

Rubli is a sweet milky dessert made by boiling milk together with sugar and spices repeatedly until it thickens to a rice-pudding-esque texture. The seller, Murari Lal, who sat with his large wok-like pan atop a small stand on the road's edge, explained to us that he made 10kg of this dish fresh every morning at 4am – having first, he pointed out, washed all of the utensils in soapy water. By evening, it was all gone. His average earnings were in the region of 100Rs a day, although right now he was running at a loss due to the high price of milk and the reduced popularity of the dish in

Below, from left: Street food provides poor people with a small living and an affordable meal. Rickshaw puller Mahinder stops for lunch at a stall. Vinod serves Dahi

the summer months. For eight months of the year, he reckons to make a profit.

Street food eating is a feast for the eyes, the ears, the nose, the mouth... and perhaps more. It is different. It blends into the pace of the street, and is so much a part of the whole living experience, the people, the surroundings, the colours... indeed, the whole assault on the senses. But not only is it undoubtedly an amazing cultural experience for many, it is also a necessity for thousands of people, both to feed themselves daily, and to earn a meagre living.

Yet the licence to sell food on the roadside will only be granted if vendors can show that they can cook and package their wares hygienically off the street. And this is where the catch is. Most of these street vendors do not live in conditions where they can package food hygienically. They are typically some of the poorest people in the city, and have not got facilities to do so. Furthermore, with food having to be packaged or produced in food courts, its price is inevitably going to rise, impacting hardest on those who rely on street food for cheap sustenance. When I pointed this out to the three Delhi officials that I spoke to about the ban, the responses were mixed. Some made a bit of sense, some were unrealistic and some were frankly ridiculous.

Justice Singh said that if they were to allow hawking anywhere and everywhere, there would be a huge influx of thousands of vendors, with no controls at all. He explained that food courts were now commonplace across South East Asia, and that this was an important change that had to be made. He did not agree that prices would go up considerably in food courts, and if they did, people would have to adapt. He did not see that there was any alternative.

The Medical Health Officer from the New Delhi Municipal Council (NDMC) said that if vendors are unable to obtain a licence to cook food, they should 'turn to God', and those that can't afford to buy the food will have to make it at home. An official from the Municipal Corporation of Delhi (MCD) said that if the vendors can't afford the packaging they could take a loan from the bank, and that the customers would save money on doctors' bills so could afford to spend a little more on the food. He also agreed that, yes, rickshaw pullers may have to restrict their diet. All agreed that the change may have an impact on the culture, but that it was in the general public interest to raise health standards.

Many, however, believe that the ban is due to the forthcoming Commonwealth Games, to be staged in Delhi in 2010, and that the city is 'cleaning up' its act for the expected influx of foreigners. Indeed, the Medical Officer of Health for the NDMC said as much, stating that, as many foreigners will come, the food industry is going to be very strict with hotels, restaurants and vendors. 'Foreigners will not be able to digest our food,' he said.

Against this Western ambition, there is no safety net for the thousands of street vendors and their customers who will be stricken by the ban. Justice Singh explained to me that I was applying a Western mindset to an Indian problem. 'You see, the government is not in a position to provide employment to everyone. We have a population problem.'

'Many, however, believe the ban on street food is due to the forthcoming Commonwealth Games and that is why the city is 'cleaning up' its act'

It is true, I was assuming that there should be some sort of social security network in place to prevent these people slipping below the breadline – and this is half the tragedy, that no such thing exists in India. Still, I could not escape the disturbing reality that it is the poorest in society that would inevitably bear the uneasy brunt of these changes.

There is no doubt that India is modernising, and that this is a good thing for many of its citizens. But as Delhi cleans itself up, as cycle rickshaws disappear (which is occurring in many parts of the city now) and as street food becomes the stuff of Tetra Paks, is Delhi going to become like all the other capital cities in the world, shifting towards a globally homogeneous urban culture?

In jest, I asked Justice Singh whether cows would be banned from the roads next. He replied, in all seriousness, that they are already banned – by the Supreme Court! Reassuringly, I see little sign of their disappearance. As Justice Singh went on to explain, in India, the lowest levels of enforcement are often corrupt and, as a result, many laws are passed with little change occurring on the ground.

It seems that the old *baksheesh* (backhander), amongst other things, is keeping India Indian amidst the modernising, homogenising tide. Let us hope that this too will be the case for India's street food culture, and that its free and untamed spirit will live on.

Anna da Costa is a freelance journalist.

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Sector Average	+16.2	+61.8	+126.7
Henderson outperformance	**+3.6**	**+6.5**	**+14.9**

Discrete year performance (%) as at 30 June 2007*

	Jun 07 Jun 06	Jun 06 Jun 05	Jun 05 Jun 04	Jun 04 Jun 03	Jun 03 Jun 02
Henderson Global Care UK Income Fund	+17.6	+17.8	+12.6	+6.9	N/A

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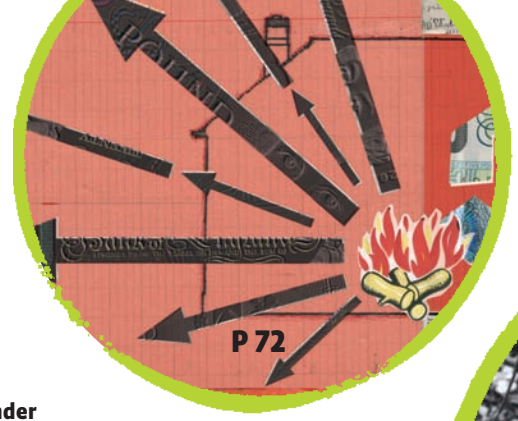
Contents


P 72


P 71


P 66

Wherever you see this little bird it'll point you to relevant contacts in our Green Shopping Guide

✶ READER OFFERS ✶

A friend of mine, new to online shopping, ordered a 25-litre bottle of Ecover Fabric Softener from the internet recently. When it arrived at her door, it was so big she mistook it for a furniture delivery. The only thing she could do was hide it in her dining room, covered in a blanket. Lifting it is out of the question, as it takes two people just to tilt it to get any out.

I sympathise, as I regularly buy in bulk. Shopping online beats carrying heavy loads and it's great to support e-tailers who combine good business ethics with a massive range of goods.

But when it comes to fresh fruits and vegetables, this time of year, the internet just won't do. From apples by the box, to berries galore and market trollies full of squash and pumpkin – September is glut season, the time to store up for the leaner months to come.

A great guide for this season is Rose Prince's *The New English Kitchen* (Fourth Estate, £12.99), full of simple ideas on making the most of all kinds of foods.

A couple of Sunday afternoons' worth of labour can reap a cupboard full of handmade jams and a freezer full of savoury soups and sauces. The best part is that if you do go overboard and find that your cupboards are full to bursting, pop a personalised label onto some of the jars and give them away as gifts. You can't really say the same about fabric softener.

Matilda Lee, Green Pages Editor

email: greenpages@theecologist.org

September

BY LAURA SEVIER

Three easy eco-actions

Almost half of all Britons say they don't know how to start reducing their CO_2 emissions. Try these:

1 Switch to green electricity provider Ecotricity (see page 84 for our campaign)

2 Organise a carpool for the school run (see www.carplus.org.uk) or walk (see www.walktoschool.co.uk)

3 Get insulated! See page 72

Earth: The Biography

Born 4.6 billion years ago, the earth has survived a rainstorm lasting for thousands of years, the Mediterranean drying up and volcanoes saving the planet. A new landmark series on BBC TWO starts in September, telling the earth's story. Check your TV guide for programme dates. www.bbc.co.uk

Bramble & Apple Jam

Put 1.8kg blackberries and 700g apples into separate pans. Cover each with 150ml water, simmer until soft. Pulp with a wooden spoon. Add blackberries and 2.7kg sugar to the apple pulp, stir until the sugar dissolves then add 15g butter. Bring to a rapid boil, stirring often, for 10 minutes. At setting point, remove from heat and skim surface. Pot and cover the jam. From www.greatbritishkitchen.co.uk

PICK OF THE MONTH

The Soil Association Organic Food Festival (1–2 Sept) in Bristol's Harbourside is the largest organic food festival in Europe. New for this year: an organic fashion show, a relaxation zone for health and beauty pampering, cookery workshops for children and a green home and green planet pavilion for eco-friendly household products, energy and investments. Plus lots of food and drink to buy and try. Come and visit the *Ecologist* stand! For further info, see www.soilassociation.org/festival

1–16 Sept
Organic Fortnight

Organic foodie events and tastings around the UK. And, from mid-August, look out for the four-week organic roadshow, 'The Organic Taste Experience', offering the chance to sample organic food. (13 Aug–16 Sept) www.soilassociation.org/organicfortnight

22 Sept–7 Oct
British Food Fortnight

The biggest celebration of UK-produced food. Buy, eat and cook Britain's regional food and enjoy quality, fresh, seasonal and regionally distinct produce. See www.britishfoodfortnight.co.uk. Find out about local food traditions in your area, regional specialities and 1,210 recipes – mostly traditional – at www.greatbritishkitchen.co.uk. For a list of 3,500 food and drink producers in the UK, visit www.regionalfoodanddrink.co.uk.

30 Sept
Wolves in the UK?

Will the wolf once again roam freely around the British Isles? Reintroduction programmes have been successful for many species in countries around the world. Find out more and meet wolves at the 'Restoration, Reintroduction and Recovery' seminar at Ufton Court, near Reading, organised by the UK Wolf Conservation Trust. www.ukwolf.org

Learn something new

Strawbale building

14–16 Sept Three-day building course with Britain's foremost strawbale builder, Barbara Jones, at Assington Mill in Suffolk. www.assingtonmill.com

Rag rugs and home energy

19 Sept Learn to make rag rugs from cotton (dresses or curtains), woollens (coats, blankets and skirts) or synthetics such as fleece, on this one-day course.

28–30 Sept Thinking of investing in a windmill, a ground source heat pump or a solar water heating system? Learn from sustainable-energy expert Catherine Streater. Both courses are run by the Low Impact Living Initiative (LILI), based at the Redfield Community in Buckinghamshire. www.lowimpact.org

Cooking with fire

21–23 Sept Learn the secrets of wood-fired cooking and construct an earth oven. Set in 250 hectares of woodland run by Wholewoods Environmental Arts in Writtle Park, Greater London. www.wholewoods.co.uk

Biodynamic gardening

22 Sept A philosophical and practical day course led by Marina O'Connell, covering the basics, at the Apricot Centre in Essex. www.apricotcentre.co.uk

15–16 Sept Save our beaches

Beachwatch

Sweet wrappers, plastic bottles, cigarette stubs, metal drinks cans... Over the past 10 years, beach litter has increased by 80 per cent. Beachwatch is a nationwide beach clean-up and litter survey and the flagship event of the Adopt-a-Beach project organised by the Marine Conservation Society. In 2006, 4,223 volunteers surveyed a total of 188 kilometres at 358 beaches around the UK. To get involved, start at www.adoptabeach.org.uk

Run for the trees

Join in the world's only Tree-Athlon, organised by the charity Trees for Cities, to raise money towards the planting and care of thousands of trees across the UK and internationally. Tree-Athletes run for 5km with personal 'tree wishes' printed on their running bib. This year also has a fashion swap – so bring unwanted clothing items. 15 Sept in London's Battersea Park, 23 Sept in Leed's Temple Newsam Park. For details, see www.tree-athlon.org

6–9 Sept

Heritage Open Days

Explore the hidden, curious and interesting places in English cities, towns and villages that are either not usually open or would normally charge an entrance fee. From castles to factories, organic farms to eco homes, historic allotments to Buddhist temples, they'll be opening their doors for free. This year there are nearly 4,000 events. www.heritageopendays.org.uk

Conferences

Sustainability in Practice: From Local to Global: Making a Difference 6 Sept, Kingston Hill Campus, Surrey, www.kingston.ac.uk/sustainability/conference.html

Friends of the Earth Conference 2007 9 Sept, University of Reading, Berkshire, www.foe.co.uk

Developing Organic Trade 12–13 Sept, Imperial College, London, www.developingorganictrade.org

Earth is Community: A celebration of the vision and path of Thomas Berry 15 Sept, St Mary's Venue, York Street, London, www.earth-is-community.org.uk

GreenCorp 2007 18–20 Sept, The Millennium Mayfair Hotel, London, www.green-corp.biz

22 Sept

First day of Autumn

22 Sept Car-free zones

World Car-Free Day

Each year on 22 September, town centre streets across the UK are closed to cars and lorries and are opened up for people to enjoy walking, cycling, street theatre, live music, dancing, art and children's play areas. www.itwmc.gov.uk, www.worldcarfree.net/wcfd

Email: laura@theecologist.org with upcoming events for In Season

Seasonal food

Fruit
Apple
Blackberry
Blueberry
Damson
Loganberry
Plum
Raspberry
Tomato

Vegetables
Asian greens
Asparagus
Beans (broad, French and runner)
Beetroot
Broccoli
Cabbage
Carrot
Cauliflower
Celery
Courgette
Cucumber
Fennel
Garlic
Kale
Kohlrabi
Leek
Lettuce
Mushroom
Onion
Parsnip
Peas (shell, mangetout and sugar snap)
Peppers
Potato
Pumpkin
Radish
Shallot
Spinach
Spring onion
Summer squash
Swede
Sweetcorn
Swiss chard
Turnip
Watercress

LOCAL HEROES

The Lavender Mob

A very keen gardener, an electronics engineer, elderly residents, prisoners and numerous assorted local people. What do they have in common? Lavender. **Jeremy Smith** reports

A bumblebee careens clumsily about a lone yellow foxglove, surrounded by row upon row of lavender bushes, their flowers oscillating gently in the breeze. The sun beats down on my neck. I pick a head from a nearby plant, roll its buds between my fingers and inhale its distinctive scent. I sigh happily. Mmm... Carshalton.

This is surburbia at its most suburban, a world of cul-de-sacs, washing the car, trimming the hedge, dreaming of the countryside, commuting to the city. A land I long to forget.

To me, the suburbs are an example of man's erasing of history in pursuit of progress. Often, all that is left of an area's past, amongst the identikit 'between-the-wars' semis, lies hidden in seemingly disconnected street signs or the names of the few pubs not yet afflicted with a nasty gastro disorder.

So too in what is now south east London. Where I see tiled roofs and satellite dishes, was once the world capital of lavender production – a cluster of villages and fragrant fields stretching as far as the eye could see.

But the area wasn't noted only for lavender. By the 1700s, the River Wandle, which runs through it, had become the most heavily worked river in the UK. At its peak there were 90 mills along its 14-mile course, from its spring in Surrey's north downs to where it runs into the Thames at Wandsworth. Everything from leather tanning and snuff grinding to silk dyeing and distilleries.

This in turn led to the construction of the world's first public railway, in 1803. Old Mitcham Station is widely considered to have been the first station in the world. Now, this icon of our heritage has – according to its new owners – 'been sympathetically restored to offer 12 offices', with entryphone and surveillance cameras for each 'business suite'.

However, this industry also took its toll on the lavender. Pollution made it harder for the plants to grow. But what finally killed off the fields was the need to house the population explosion that industrialisation

brought to the south east before the First World War and directly after it. As demand for land pushed up prices, selling the fields to developers was too tempting for their owners to resist.

There the story would have ended, were it not for the proximity of an organisation called BioRegional. Best known for its work on the pioneering BedZed housing development, BioRegional also works with local groups to develop sustainable local industries – paper making, charcoal, and, in Carshalton's case, lavender.

Stop and grow

What happened next is owed in great part to the two men standing with me amidst the lavender. Roger Webb has lived around this area all his life. Now in his fifties, he's had all manner of jobs – tree surgeon, metal worker, council officer, HGV driver and car mechanic, which he still does to make ends meet. However, for some time he has also been a trustee of BioRegional and, though calling himself just a 'very, very keen gardener', helped set up the Carshalton Lavender project more than 10 years ago.

Laurie Rudham, in his sixties, joined a little later on. A self-employed electronics engineer who drives a Morris Minor he's had since 1973 and reckons is good for another 200,000 miles, he recalls carrying grasshoppers round in matchboxes, and laments, 'It's so sad kids aren't allowed to go over the common, get lost and be back for tea.' He got into the scheme after coming along and being inspired by the notion of building a contraption in his shed to distil lavender oil.

Two men who have lived in the same district all their lives, seen it change, seen much that they love vanish, and who decided that they would, as Laurie puts it, 'do our bit to stop things getting any worse'. They have no special skills beyond willingness to work hard.

> "Faced with a field of brambles and junk, they asked the local prison for help – and got it

And work hard they did. Ten years ago, Roger began by putting ads in all the local papers and flyers through endless doorways, telling the community he was looking for lavender plants that had grown in people's gardens for more than 20 to 30 years. Mostly, old people replied, from whom they selected the seven most promising locations across the borough, visited and sheared off sackfuls of clippings, from which they hoped to reproduce lavender that was as close to the strains (*Lavandula angustifolia* and *L. intermedia grosso*) grown here in the plant's heyday.

The next stage could have stopped many less determined people. In the centre of Carshalton, a district of Mitcham, stands a vast patch of allotments. However, one third of the fields, covering around three acres, lay unused, covered in dense brambles and all manner of flytipped detritus. Roger and his colleagues had managed to persuade the council to let them use the area, but they needed to first clear it, then plant it with the many thousands of lavender bushes needed to get the project up and running.

They found the answer to both the labour needed, and the space and time to propagate the cuttings, at the local prison, HMP Downview, which coincidentally had run a horticultural project as a way of providing stimulus and possible income for the prisoners. 'We wanted to get involved and

Left: From left: Roger, Laurie and Alistair Cruickshank, the project's chairperson, in the Carshalton Lavender fields
Below: Laurie gets his hands on the lavender during the harvest in July

Photography DEE RAMADAN

connected with local people,' Roger explains modestly, 'and we thought, "There's a welter of local people up there doing nothing".' The fact remains, not many people would have thought of turning to prisoners for help.

Over the following couple of years, the project took Roger's cuttings and grew them into 2,500 to 3,000 young lavender bushes. Meanwhile, a number of prisoners spent around eight months clearing away the brambles and rubbish so that they could lay out the lines of lavender. 'For three months it was back-to-back bonfires,' Roger recalls.

Then, having set out the rows and sown the plants, and thanks to their unlikely pairing of pensioners and prisoners, they were ready to go.

Toys for the boys

Lavender is an easy enough crop to grow. It's perennial, hardy and the biggest risk is from over-watering. The soil in the allotment fields is, like that all around south-east London, chalky. Dig down a metre and it's solid chalk, so water runs straight off.

The work, therefore, is mostly maintenance: minor weeding, keeping the grass short, and picking off the beautiful-looking yet highly damaging Rosemary Beetle. Then, once the harvest is over, cropping the bushes back, shearing off the year's growth, ready for winter. Throughout the year, Roger, Laurie and a group of 12 or so other volunteers give their free time to keep the fields going.

The main work is at harvest time, in late July. Harvesting has to happen quite fast. Lavender is most likely to spoil once it has been picked. Once harvested, the majority of the crop is turned into oil. Despite Laurie 's undoubted talents in his workshop, so far the scale of his distilling machines are only up to demonstrating what can be done. Whatever amount they wish to turn into saleable lavender oil (last year, around 70 per cent) is sent away to nearby facilities capable of extracting the oil from the plant.

The rest is also sold so as to finance the ongoing running of the project, and Laurie is always coming up with

Above: The old occupation has been transplanted into today's suburbs – as far as possible, growing the old varieties of lavender

> Each year, in late July, they invite the local community to come and help pick the lavender

new ways of using the crop. Yes, there are fresh and dried lavender sprigs and bags of dried buds for scented pouches, all sold through the local community centre by adults with learning difficulties – another example of the group seeing community and opportunity where most see only problems. But Laurie has also packaged up his own bags of seeds and, as he shows me with some pride, his own range of lavender toothpicks, fashioned from the dried stalks.

Beyond the toothpicks and home-made stills, the short history of their harvests has also seen rapid development as regards tool use. The first harvest happened three years after the bushes were put down, and took the 12 volunteers two weekends. But they were using sickles.

By the following year, they'd enlisted the help of a team on the agricultural machinery development course at Cranfield University, led by Dr James Brighton, who was also consultant engineer to Channel 4's *Scrapheap Challenge*. The team built them a harvester from all manner of used bits of rotorvator and other recycled odds and ends. 'Our prototype,' Roger calls it. 'The comedy harvester,' chips in Laurie.

After four harvests this was also replaced – now by a machine designed for harvesting tea. Fitted with a circular blade and a fan, you walk it down the rows, cutting the heads, which get blown into a sack behind. What once took 12 men two weekends now takes three hours.

Not that Roger and Laurie are great proselytisers for speed and technological progress. Much of our short time together is spent philosophising with a stick of lavender drooping appropriately from one of their mouths. They come alive when they talk of their time in the fields and how they've brought together all manner of people – from allotment holders to aromatherapists, Brownies, conservationists and historians.

Community harvest

No wonder then, that the high point of their year is the open harvest weekend. Each year, in late July they invite the local community (and anyone interested from further afield) to come and help with the harvest. It's a simple pick-your-own, five-quid-a-bucket affair, but as awareness of the project has grown, so has the event's popularity.

Last year, between 3,000 and 4,000 people came along over the weekend. Just to pick lavender, watch Laurie demonstrate his prized still, enjoy the community barbecue and taste some of Laurie's lavender bread. 'We get people phoning up wanting to do something,' explains Laurie, 'and we say, "Only if it's directly related to lavender". Face painting and Morris

dancing? No. If that happened, Roger and I would be out like a dose of salts.'

Unwanted sideshows aren't the only negative consequence of bringing their work to a wider audience. With so many people attending their open days, the insurance company wouldn't insure them unless people were clearly warned of the supposed risks. So they stuck up a sign that read, 'Warning: this field may contain bees'.

This is nothing, however, compared to the threat they faced at the start of this year. As part of Labour's schools programme, every secondary school in the country is being refurbished or rebuilt. And despite promoting itself as 'green thinking', their local council planned to build a school right on top of their lavender fields.

They hadn't counted on the amount of support this would generate for Roger and Laurie in the community. With the help of local newspaper *Sutton Guardian*, plus an article in *Garden News* magazine, the team started the Save Carshalton Lavender Campaign. Over the following months they raised a petition among local people and kept the story in the headlines of the local newspapers.

After several months, reeling from the negative publicity, the council backed down. Carshalton Lavender became a yet more known, yet more loved member of its community, while also cementing its relationship with the other allotment holders, who had also stood to lose their own plots but for the group's concerted campaign.

The acclaim has only grown. In May, Carshalton Lavender was voted Conservation Project of the Year in *The Observer* Ethical Awards. Since then, says Laurie, the phone has rung and rung, with groups across the country eager to replicate their success.

For Roger, Laurie and the other volunteers, all this is welcome, if time-consuming, attention. Right now they have more pressing needs: 26,000 plants, producing between 600 and 700 kilos of cut flowers, to turn into six to eight litres of oil, take a lot of looking after. In a good year, the project may generate £4,000 to £5,000 – just enough to keep it ticking over; but they could do with a new store. And a new threshing machine. And a chance to build Laurie's dream of an on-site distillery, enabling them to make their own oil. But, most of all, they just want time to be in the fields.

> You can't go on doing what doesn't work. Do something different, something to help

I spend only an hour or two there, but it's a time I won't forget. In its simple way it seems to hold so many answers. Laurie tells me of sitting down with some home-made lavender bread, cheese and a pint of beer amongst the rows, so that the lavender was head-high and the bees were buzzing around, and being utterly at peace. Roger smiles, thinking of the hours they spend in the fields, talking, 'like grumpy old men, putting the world to rights'.

'It's what you've got to do,' he tells me. 'You can't go on doing what isn't working and generally buggering things up. Do something different. Do something to help.' E

For more information, contact Carshalton Lavender, www.carshaltonlavender.org, tel: 07948 174907

Below: Roger doing what he likes best – working in the lavender fields, his un-grumpy method of doing something to help put the world to rights

Dirty politics

Paul Kingsnorth on the battle to keep land for people to grow their own food, rather than for developers to grow rich

I was recently contacted by the man who runs my local branch of the Campaign to Protect Rural England (CPRE). He'd got hold of a document which he thought I ought to see. 'Have a look at what your city council are planning,' he said. 'Unbelievable, isn't it?'

The document he attached was the council's first foray into what it knows will be extremely controversial plans for massive levels of housebuilding. Oxfordshire, where I live, is planning to build at least 2,500 new houses, every year for the next two decades. The situation is similar in many other places across the country. The question is: where to put them?

None of the options are palatable. You can build all over the green belt, or even build new towns, but environmentalists get very unhappy about that. Because of the protests that tend to ensue, and because of high government targets for building houses on 'brownfield' sites – those which have previously been built on – as many new houses as possible will be built within town and city boundaries. Oxford City Council, like many others around the country, has just finished reviewing potential sites within the city for future building. The list of these sites was the document I received from CPRE. The reason that they were unhappy about it was that four of them were allotments.

It didn't take long for the people who grow their food on the allotments to get wind of the plans. Within a few days a protest group was up and running and on the front page of the local paper. With any luck, this will make the council think twice about building new houses on Oxford's allotments. But whatever happens, this little local difficulty is merely representative of a much wider trend going on all across Britain – a smash and grab raid on our vegetable patches.

We are in the middle of both the biggest building boom since the post-war period, and the biggest property boom for decades. This combination of high land prices and a desperate desire to build new houses has led to land that was previously ignored, overlooked or regarded as valueless being suddenly worth millions. In this new gold rush, allotments are under serious threat. Many of them are huge, and very close to the centres of cities and towns. For a developer, they are almost insanely desirable. This, combined with increasing pressure from central government to build ridiculously high levels of housing, puts a frightening amount of pressure on local councils to consider building on the carrot patches of the nation.

> "We may lose our best chance to be a nation that grows its own food

For where to buy organic food and drink see the listings beginning on **p 77** of our shopping guide

This would be a disaster. After many decades of decline, allotments have rocketed in popularity in just the past five years. When I first took on my plot, four years ago, half of the others were unused. Now you can't get one anywhere in the city for love or money, and I know that the situation is similar across the country. The interest in eating locally and organically and, perhaps, boycotting

the supermarkets, is leading to an explosion of interest in food growing.

What few people know is that everyone who lives outside central London has a right, in law, to an allotment of their own. Every council is required, under a piece of legislation that dates back to 1908, to provide enough allotments to meet local demand. Very few of them do, perhaps because this legislation has not yet been tested in court. Nevertheless, in law you are entitled to an allotment if you want one. If everybody knew this, and if councils met their obligations, we would currently be seeing a process of mass allotment construction across the country. Instead, we are having to fight to prevent their loss to greedy builders and spineless local officials.

This is, it seems to me, a crucial battle. If we lose it, and our allotments disappear under a tide of brick and concrete, we may lose our best chance to become, as we once were, a nation that grows and appreciates its own food. Plans to build on allotments are underway countrywide. Fortunately, plans to thwart them are underway too.

Perhaps the most famous current example of horticultural resistance is the campaign to save Manor Garden Allotments in east London. Manor Garden Allotments, a beautiful 100-year-old site, has the misfortune to be right in the middle of the proposed Olympic Park. For the sake of three tiresome days of discus throwing and long-jumping, it is to be bulldozed into history. Its plotholders, though, are not going without a fight. The campaign that they set up to save their allotments has had national and even international media coverage, and has inspired many others to fight a flawed vision of progress that replaces soil with concrete and calls it development.

The Olympics is a special case, but the attempt to destroy allotments is not. Yet there's a fightback among the bean rows and onion beds. The growers of the Ley Allotments in Baxenden, Lancashire, are battling their council's future plans for housing, too, as are campaigners in Tilehurst in Berkshire, Preston in Lancashire, Eastleigh in Hampshire, Bicester in Oxfordshire, Kenilworth in Warwickshire, Acton in Greater London... the list is as long as you want to make it. The longer it gets, the more depressing it can seem.

But the more campaigns that spring up, the more the authorities know how much people value allotments and the less they are likely to destroy them. I have long had a dream of a spreading landscape of vegetable beds covering the country, taking up space currently used by car parks, supermarkets and out-of-town retail parks. It's a dream of people working off their stress, growing and eating their own healthy food, claiming independence from the machine, and all for £16 a year and a fork and spade.

But I have a nightmare too: of our hard-won allotments being built on one by one by development sharks and cowardly councils, while our backs are turned. Which will come true? That's up to us. Hammer your ploughshares into swords, my friends. It's time to fight back.

> “I have a dream of a spreading landscape of vegetable beds that replace car parks and out-of-town retail parks

Resources

- Allotments Regeneration Initiative: www.farmgarden.org.uk/ari
- Manor Gardens Allotment Society: www.lifeisland.org
- National Society of Allotment and Leisure Gardeners: www.nsalg.org.uk
- Save Eastleigh Allotments, Hampshire: www.eastleigh-allotments-association.org.uk
- Save Ley Allotments, Baxenden: www.allotments.net/allotments/Baxenden/baxenden.htm

Contact me

All my previous columns on allotments and food growing are collected on my website at www.paulkingsnorth.net

Directly below: Manor Gardens protesters
All others: Eastleigh supporters in action

Photograph MIKE WELLS

Photographs TIM HOLZER (X3)

Bio what?

Monty Waldin's thirst for good wines leads him to visit a biodynamic farm. More than just a load of bull, he finds, making rich, complex wines requires quality cow manure

'What you are about to learn over these next several days, some of you may find a little bit weird, odd, or even gory, but you'll find it well within your capabilities. If you do it right what you'll create will be a powerful force for good on your farms, on your crops, and in your food.'

So said Hugh Courtney last October as he welcomed a 30-strong group of trainees – myself included – keen to learn more about what it takes to be 'biodynamic'. This and next month, I'll share some of what I learned.

Each spring and autumn, Courtney and his staff at the Josephine Porter Institute for Biodynamics in Woolwine, Virginia, USA, host seminars on how to make the nine 'biodynamic preparations' that must be used for a farm to be considered biodynamic. Courtney is JPI's Executive Director.

These nine biodynamic 'preps' first came about in 1924, when a group of European farmers noticed their soils, crops and livestock were showing major signs of fatigue from over-intensive farming. They asked Austrian scientist Rudolf Steiner for advice.

Steiner believed that the farms and farmers too needed to be revitalised. The industrial revolution and so-called 'progress' had led farmers into a mind-set of thinking more about material things than of the soul or spiritual side of farming. Seeing a farm as a means of producing tonnes of crops at one end, having added tonnes of fertiliser to the soil at the other, was not sustainable.

Steiner's painstaking methods for producing the nine biodynamic preparations for healthy soil are still followed today. They are made using cow manure, horn silica and herbs – yarrow, chamomile, stinging nettles, oak bark, dandelion flowers, valerian and horsetail – used in homeopathic doses, for a range of beneficial effects. The idea is to create a 'farm individuality', a concept that was of keen interest to someone like myself with a wine background. Why?

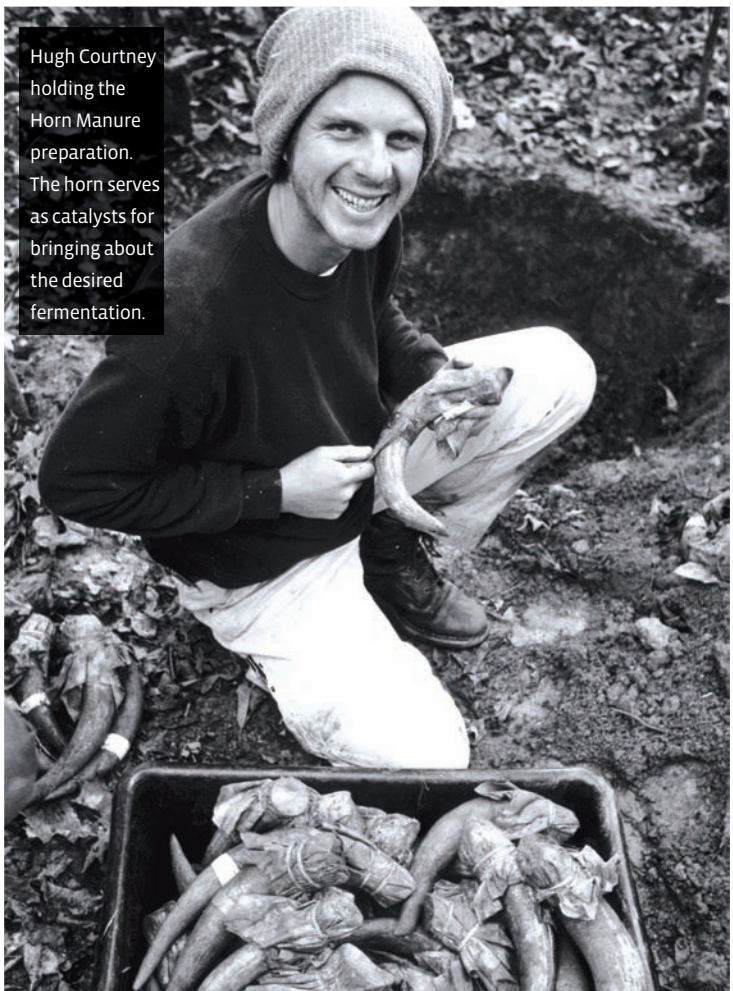
Much of the wine we drink today tastes as if it could come from anywhere. What the French called 'terroir' – to us, individuality – has to a large extent been lost. The modernisation of vine growing and winemaking mean the actual range of wine flavours is tiny: you can find bottles of Chardonnay made in Hungary, Argentina, Mediterranean France and California that, when you open them, have absolutely identical flavour profiles: soft, tropical, neutral.

Bringing vineyard soils back to life is a key way to achieve more complex-tasting wines – and the most useful biodynamic tool is called horn manure or '500'. This is made simply by stuffing fresh cow manure into a cow horn and burying it for six months from autumn until the following spring, Courtney explained.

Naturally, and in keeping with the

Biodynamic agriculture is the oldest consciously organic approach to farming, based on a holistic and spiritual idea of nature. Every biodynamic farm aims to become self-sufficient in compost, manures and animal feeds. An astronomical calendar is used to choose when to plant, cultivate and harvest.

Paul Bela collecting cow manure for the Horn Manure preparation



Hugh Courtney holding the Horn Manure preparation. The horn serves as catalysts for bringing about the desired fermentation.

Tasting notes

Some of these wines have featured in previous *Ecologist* offers, and proved so popular they are being offered again.

1) 2004 Les Demoiselles de Falfas, Côtes de Bourg Bordeaux is the perfect red wine to drink with food. It is crisp tasting, and refreshingly not overloaded with alcohol like those heavy Australian and Chilean reds that are so popular. Château Falfas is one of France's best biodynamic wineries. This wine is made from the youngest vines in its vineyard: mainly Merlot for leafy red fruit tastes, a bit of Cabernet Franc for tastes of violets, and a dash of Cabernet Sauvignon for blackcurrant tastes. It is ready to drink, but can easily be aged several years.

2) 2004 Domaine de Beaujeu, Vin de Pays du Bouche du Rhône red Merlot Domaine de Beaujeu is run by Pierre Cartier, whose brothers run Mas de Gourgonnier (see right). This wine comes from a Camargue vineyard that also grows cereal crops and has livestock, and leaves large swathes of land as wild 'habitat breaks' for beneficial insects. This merlot is smooth-tasting, soft and approachable, with redcurrant and plum flavours. Drink within 12 months.

3) 2003 Mas de Gourgonnier, Les Baux de Provence Mas de Gorgonnier is one of Provence's oldest certified organic vineyards. Its red wines are concentrated and sturdy, with wild herb, almost meaty flavours. This one is made mainly from Grenache Noir, which gives soft, black fruit flavours, and Cabernet Sauvignon, which gives crisper black fruit flavours. Small additions of Syrah, Cinsault, Mourvèdre, and Carignan grapes add an appealing peppery aftertaste.

self-sufficient nature of the biodynamic ideal, JPI has its own herd of cows. We were given buckets and trowels and told to collect as many fresh cowpats as we could find.

'When you scrape the pats off the pasture floor, scrape up as little grass and turf as possible,' warned Hugh, 'or else the manure doesn't transform as well when it's in the horn. What we want at the end of the six months underground is manure that has lost its manure smell and soft texture, and been transformed into something dark, almost crumbly but not at all dry, and smelling earthy, like the forest floor. If there's too much grass in the manure as it goes into the horn, air pockets are created, and the manure will turn green, liquidy and will smell of ammonia. It will be unusable.'

We got up from our chairs thinking we'd got the horn manure thing sussed, when one final warning came our way. 'Oh – make sure you only take manure from female cows, not from the bull.' This instruction was met by a few blank looks – until Joey Brinkley, one of the JPI staffers, explained.

Brinkley had just completed a work experience in California's famed Napa Valley, at the biodynamic Grgich Hills winery, which has recently installed the biggest set of solar panels in the California wine industry.

'When cows produce their manure pats,' said Joey, 'they tend to pee at the same time, and as both manure and pee exit from the same place, the cowpat often has a hollow, wet centre. With a bull, the pee and the manure come out of different holes and in different directions, so bull cow pats are often drier and flatter.'

Someone cracked the inevitable 'Hey, Joey, no bullshit, huh?' joke, and we were on our way to the cow pasture, buckets in hand.

Over the weekend, we collectively found enough manure to stuff nearly 1,000 cow horns. The horn manure would then be sold on to farmers, winegrowers or homesteaders for their back gardens across north America.

Next month: horn silica.

More info

- Biodynamic Agricultural Association (BDAA) The Painswick Inn Project, Gloucester Street, Stroud, Glos GL5 1QG, England. Email office@biodynamic.org.uk, www.biodynamic.org.uk
- Josephine Porter Institute for Applied Biodynamics Inc, PO Box 133, Woolwine, VA 24185-0133, USA Email info@jpibiodynamics.org, www.jpibiodynamics.org

GREEN PAGES

Organic & biodynamic wine club

Why buy 'ordinary' wine when organic & biodynamic wines are...

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- Lovingly produced by small-scale, family-owned and run vineyards
- Creating rich and diverse habitats for creatures great and small
- Excellent value

Wine club case 9:

See left for full tasting notes:

1 2004 Les Demoiselles de Falfas, Côtes de Bourg (x1)
2 2004 Domaine de Beaujeu, Vin de Pays du Bouche du Rhône Merlot (x3)
3 2003 Mas de Gourgonnier, Les Baux de Provence (x1)
(Full tasting notes in October issue)
4 2005 Nature, Côtes-du-Rhône, Domaines Perrin (x2)
5 2006 Navardia, Bodegas Bagordi, Rioja (x3)
6 2005 Rioja, Semi Crianza, Usoa de Bagordi (x2)

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Sustainable style is a click away

If you're looking for stylish yet ethically produced clothes, you may leave the high street empty-handed. Online, eco-boutiques offer organic, 'reclaimed to wear', and fairly traded designer collections, ultimately making shopping more enjoyable. By **Matilda Lee**

MYTH 1 'I'll be stuck with an item that doesn't fit'

Adili, DeviDoll, Equa Clothing, Ecobtq and The Natural Store all have a 'no questions asked' return policy – which means that if what you buy isn't suitable for any reason, you can return/exchange it for something else – by simply popping it back in the post.

Equa Clothing

www.equaclothing.com

Since opening in September 2005 as London's first all-organic and fair trade clothing store in Islington's Camden Passage, Equa Clothing has gone from stocking nine different designer labels to 24 today. It went 'live' in October 2006, and founder Penny Cooke says that best sellers include Ciel dresses and Loomstate jeans.

Finding new labels isn't hard: 'We are contacted by new labels that have set up or are setting up new fair trade labels, or we research the industry ourselves online or by attending events put on by the ethical fashion industry.'

Ciel Sophia dress

Right: Stewart+Brown cardigan and Karen Cole skirt
Far right: Kuyichi men's jeans

Adili

www.adili.com

Quentin Griffiths, Christopher Powles and Adam Smith (left) launched the Adili website in September 2006. 'We saw a unique opportunity, in terms of a growing consumer interest for organic and fair trade products, to create a fashion business with ethics at the core,' says Adam.

They currently stock 47 brands – including womenswear, menswear and baby clothes – and aim to expand this to 60 or more, later this year. 'There is also a list in our office of over 200 brands that we would love to work with and we are in discussions with some of these,' says Adam.

With tops, dresses, jeans and jewellery lines, Adili also launched a footwear range this spring. Their best-selling womenswear items include the Ascension organic and Fairtrade indigo jeans (£49.95) and organic knitwear from Frank & Faith (from £45).

Five per cent of the company's share capital has been allocated to fund a foundation to independently further environmental and social justice objectives in the garment industry, which they aim to launch later this year.

DeviDoll

www.devidoll.com
DeviDoll launches at the end of September. It's founder Sindhu Venkatanarayanan's solution to the dilemma of reconciling 'high-end fashion taste with a desire to purchase fashion that is (at the very least) less "dirty" than most fashion today.'

Every label at DeviDoll has to meet at least one of the following criteria: made with organic or alternative fabric (e.g. hemp, bamboo, peace silk); benefits children and/or women in its production; revives ancient handicrafts among local populations; or is made from vintage or reused materials. DeviDoll carries a range of designers who combine 'a strong aesthetic sensibility and awareness of international trends in the fashion world,' says Sindhu.

She continues: 'DeviDoll aims to be more than just a boutique – the idea is to be an incubator for a particular type of designer, like an eco-Browns, if you will. By choosing the designers we do and promoting them, I hope to further populate the eco fashion space (a good thing in itself) and also to support, via these environmentally and socially minded designers and their work, various ethical causes that are important.'

Mociun kimono dress. DeviDoll showcases pieces in hemp, yak yarn and organic cotton

MYTH 2 'I'm not at home during the day, so won't be able to collect the delivery'

It's best to give a delivery address to accept signed-for deliveries – this could be your office, your neighbour's home or a friend's. Many of these companies can make special arrangements and can mark packages with special instructions if requested at the time of order.

Many orders are dispatched the same day, so you can get them within one to three working days.

MYTH 3 'I couldn't possibly buy something without feeling the fabric and trying it on first'

'Shopping online means you have the luxury of trying on purchases at home with other items from your wardrobe so that you can be sure it's right for you. If it doesn't fit, or you don't like it – return it. Every item on the Adili site has five different shots to mirror what a customer would look for if they were in the physical retail environment themselves.'
– Adam Smith at Adili

'We make ourselves as available as possible to answer questions and offer fitting advice over the phone or via email. We try to describe the clothes as effectively as possible at the point of sale.'
– Equa

'Sometimes, receiving a parcel at your front door or desk and trying on a garment at home, with no distractions, in your own environment, can be a lot nicer than queueing for a busy communal changing room. We want to be the polar opposite of the faceless high street and offer our customers a personalised service.' **– The Natural Store**

'Detailing of each garment's fall, cut and tailoring is noted as much as possible on the buying page for that garment.

'There will be zoom facilities and multi-views for every garment. Every garment has its own sizing chart on its particular buying page. There is also a detailed pop-up about how to correctly measure yourself for different garments.' **– DeviDoll**

Ecobtq

www.ecobtq.com
Ecobtq was launched in Hove, East Sussex in June 2006. 'My decision to do this was based around my personal struggle to find places to buy special eco-friendly items that were also fashionable,' says Madeleine King. Suppliers and designers are found through word of mouth, contacts within the industry, attending eco fairs and launches, reading press, and researching on the internet.

Bestsellers include Ciel t-shirts, ROSEIWEISENCRANTZ vintage earrings, and the recycled 'Carry a Bag' from Sally Walton. Ecobtq plans to expand its current product offer by adding men's and children's categories and will be developing exclusive 'ecobtq' products with their designers.

The recycled 'Carry a Bag' from Sally Walton

MYTH 4 'I don't want to hand over credit card details online for fear of getting my identity stolen'

This may be a difficult decision for everyone when first starting to shop online. Once you have purchased a few times, you start to feel comfortable and never question it again. Internet retailers use the most advanced technology for credit card payments, including Secure Trading and 3D Secure.

The Natural Store

www.thenaturalstore.co.uk
Ismat Osman and Rachel Rogers founded the Natural Store more than 18 months ago as a 'one-stop shop for stylish and unique high quality organic and ethical goods'. Products range from fashion to interiors, beauty to food, babywear to travel.

'We already have over 50 ethical fashion brands for men and ladies, from cottage industry designers just starting out with their label to larger, more established brands,' says Rachel. 'And the number of brands on The Natural Store is growing all the time, which makes us – we believe – the largest UK ethical retailer online, for the number of brands and collections available.'

Their romantic summer dresses by Enamore, Ciel and Tam & Rob, paired with lambswool shrugs by Ivana Cavallo or recycled yarns by Snood, are particularly good sellers. The floaty silk muslin tops by Anatomy are also being enjoyed over Emmeline 4 Re's beautiful vintage fabric skirts. In terms of menswear, favourites include O.S. Sneakers by Simple Shoes, teamed with THTC T-shirts.

Right: Ciel Slouchy Bag
Below: Simple Shoes' Vantoe men's sneaker

Seditious knitwear

Graduate Fashion Week offers the single biggest opening for students to secure a job in the highly competitive,international fashion industry. Award-winning recent grad **Lilli Rose Wicks** despairs at the missed chance to put ethics into mainstream aesthetics

I'm a designer with issues. I oppose profit-hungry corporations, 'fast fashion' trends, polluting clothing manufacturing, and sweatshop labour. This view of the industry may sound naïve and pretentious coming from a 22- year-old Fashion and Textiles graduate, but I believe designers can play a huge role in shaping the industry they work in.

I made my debut at Graduate Fashion Week (GFW) with a collection created from charity shop treasures, organic yarns and natural dyes. Winning GFW's Visionary Knitwear Award has been a double-edged sword, though: I'm having to bite the hand that feeds me, by saying no to commercial notoriety.

In 2004 I started a BA (Hons) in Fashion and Textiles at Somerset College of Arts and Technology. This is when I realised that putting my work ethics into practice was going to be a struggle. The facilities available for natural and environmentally-friendly approaches to design were virtually non-existent, and I felt that, despite the fees I was paying, I wasn't being given the freedom to experiment with alternative processes.

I fought hard not to abandon my principles at this stage: buying my own domestic knitting machine, sourcing organic yarns on the internet and making my own natural dyes. It wasn't cheap, but by buying materials from charity shops, I managed to keep the cost of my final collection down.

Shortly after Graduate Fashion Week, I received offers of freelance design work from two major high street labels, but I turned both down.

I responded to an offer from New Look, outlining my chief principles, and they responded with a polite email explaining that currently they are looking towards changing their sourcing practices, but in the immediate future it's not within their capacity. However, they were quite receptive to my ideas. On the other hand, during an interview at River Island HQ, when I told them of my interest in sustainable design, their response was not very encouraging. I got the impression that they had no intention of changing their current practices.

I've had offers for more worthwhile causes as a result of my final collection, including taking part in Glastonbury Festival's 'I Count' installation for the Stop Climate Chaos coalition. Although the installation didn't make it to the end of the festival, because of the mud, it was an exciting concept and I was thrilled to be approached by Greenpeace for the event.

Finding organically sourced yarns is still quite difficult and the range is limited, so as a result, I have to be as creative as I can with what I can source. It's hard to make a point ethically without having political slogans emblazoned across your garments, but ethical design can be intrinsic, not obtrusive.

It would be great to see a graduate network set up to help those with sustainable interests, putting like-minded people in contact with each other to build up a positive community. I will be approaching smaller, more cooperative organisations, because I don't think big businesses can do eco design. I think a lot of the companies that are starting up sideline eco-fashion projects are doing it to cash in on the trend, not because they intend to make it a long-term commitment.

Ideally, after completing an MA specialising in knitwear, I'd like to work for a charity such as Textile Recycling for Aid and International Development, to collaborate with like-minded people and challenge the industry's preconceptions. As to the future, I'd like to teach people my knitwear skills, or coordinate community-based projects: sharing my skills and empowering people with the ability to create things for themselves.

I see my work as a form of activism, not just a design statement, and in the future I see myself campaigning on broader issues as well as within the fashion industry. I hope that working in the industry will open my eyes to the full reality of the fashion world, and I can try to push for changes within.

Wrap up your home

While winter may be the last thing on our minds, now is the time to prepare for the colder months and insulate your home – it'll save energy and money. By **Laura Sevier**

When Penney Poyzer and her 'green' architect husband Gil moved into their Victorian semi in Nottingham six years ago, 'the only form of insulation was mould,' she says.

One of their top priorities was to insulate, internally and externally, from roof space to cellars. Along with other eco renovations, Penney estimates that 'we now save £1,000 a year on heating bills and our carbon emissions have gone from around 18 tonnes to just a fraction of a tonne.'

Nearly 50 per cent of all heat loss in an average home escapes through the walls and roof. In the UK, the amount of heat lost in this way is enough to heat around three million homes a year. Insulating reduces your energy use, carbon emissions and your bill.

WHERE TO START?

Loft

Without loft insulation, you could be wasting as much as a third of your heating costs through your roof, according to the Energy Saving Trust.

'Insulating the loft is a no-brainer, it's so cheap and easy to do,' says Martin Normanton – who, from top to bottom, and room by room, has dramatically improved the insulation of his 1903 solid wall house in Walsall. (For details of how he did it, see the Ecovation site in Links, opposite page.)

The recommended depth of loft insulation is now 270mm (10 inches), so you may need to top yours up. Choosing a material involves weighing up the cost, suitability for the space, thermal efficiency (for the lowest heat loss, look for a high 'R rating' and a low 'U value') and environmental impact.

The Centre for Alternative Technology (CAT) recommends insulation made of organic materials from renewable resources, and recycled materials. 'The more natural the material, the better,' says Matthew Slack from CAT. 'But it's better to insulate with any material than not insulate at all.'

The standard, cheapest materials for loft and roof insulation are mineral fibre and fibreglass. Although these have excellent insulating properties, the energy used in their manufacture – known as 'embodied energy' – is high. They're also rather nasty to handle – you need to wear gloves and a face mask, as the fibre releases fine particles that can irritate your eyes, skin and throat. Over time, its performance drops as the fibres flatten.

> "If your loft isn't insulated, a third of your heating costs could be going through the roof

Another commonly used insulation comes in the form of expanded foam sheets made from polystyrene, polyurethane and polyisocyanurate (PIR), often sold as 'Celotex'. They too have a high embodied energy and some use ozone-depleting HCFC gases in their manufacture.

Thermafleece is a more eco-friendly and natural choice, using wool from British hill sheep to make slabs of insulation. Renewable, reusable and recyclable, Thermafleece only uses 14 per cent of the energy that is required to manufacture fibreglass. Wool is also an excellent insulator – its unique temperature- and moisture-

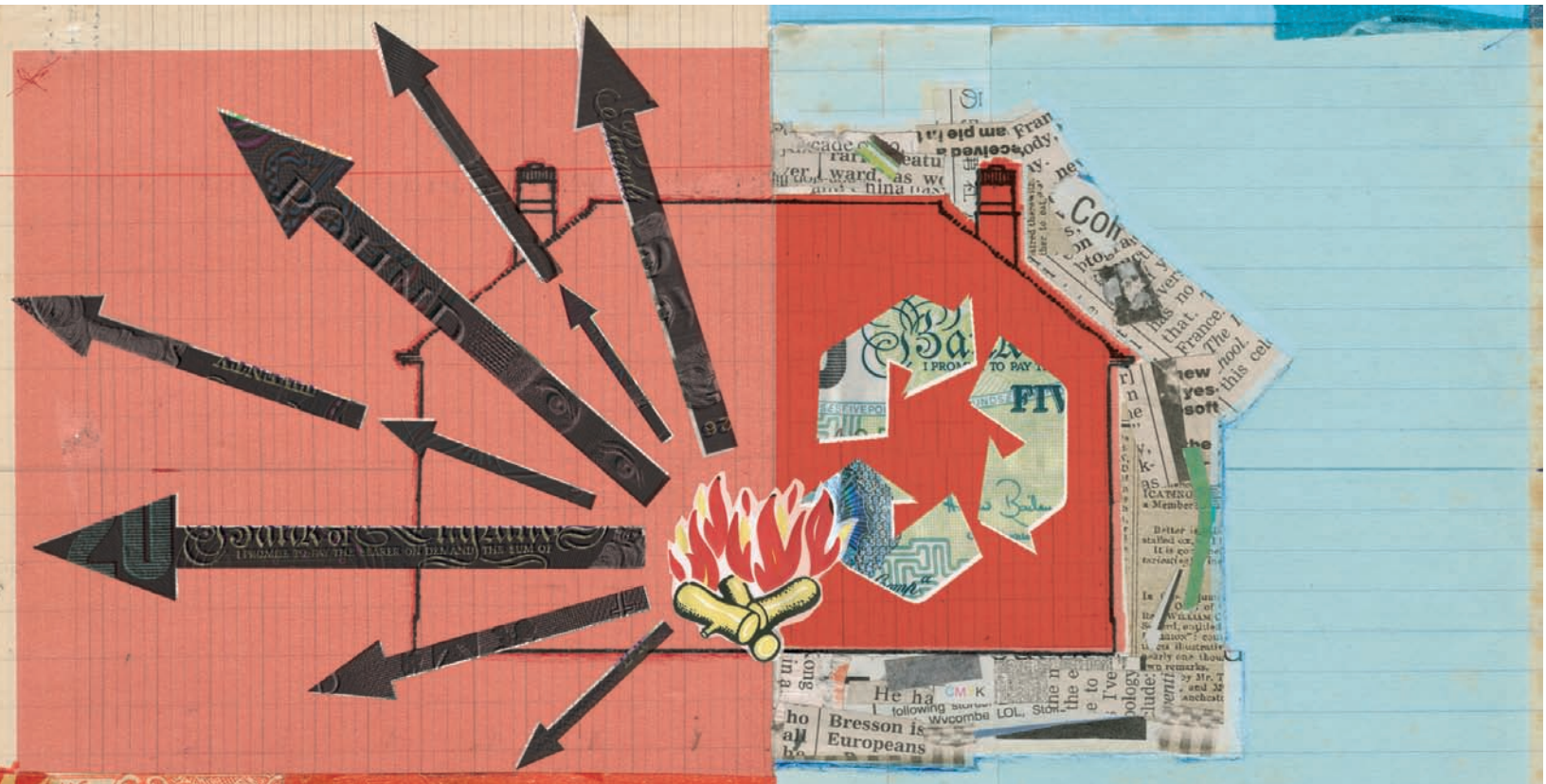


Illustration MARK LAZENBY

regulating properties mean that in summer it can actually reduce indoor temperatures by up to 7°C, and raise them by up to 4°C in winter. The downside is its cost (100mm thick costs £9.50 per square metre), which is about four times that of fibreglass.

Other natural options include Isonat, made from UK-grown hemp and recycled cotton fibres, and Islovas, made from natural flax fibres. Like wool, they are a bit pricy.

Another eco-alternative is Warmcel, a loose-fill cellulose fibre made from recycled newspapers, which costs £9 per square metre. It is biodegradable, has a very low embodied energy, and is an excellent use of waste material. Highly rated for its thermal efficiency and eco-credentials, Warmcell has been installed in more than a million homes in the UK. It's also simple to do yourself: just fluff it out into the loft space between the joists.

Cost From £230 -
Annual saving Up to £220 a year

If you've already got 50–100mm of insulation, topping it up can lead to further savings (around £50–£60 a year).

Walls

According to the Energy Saving Trust, more heat is lost through the walls than any other route – approximately 33 per cent in an uninsulated home.

In most houses built after the 1920s, the external walls are made of two layers with a small gap – an air cavity – between them. In the UK, 68 per cent of the housing stock has predominantly cavity walls but only 36 per cent of these are insulated. If all UK cavity-walled houses were insulated, they would collectively save £960 million a year – enough to heat 1.7 million homes a year. Filling the gap with insulation material decreases heat loss by up to 60 per cent and can reduce heating costs by more than a third. After loft insulation, cavity wall insulation is the most cost-effective measure, especially as grants and special discounts are available.

Installation takes only a few hours and involves a professional installer drilling small holes into the outside layer of the wall, then pumping an insulating material into the cavity. The most common method is to inject a chemical foam (urea formaldehyde) but this should be avoided because of the possible health risks of formaldehydes. Alternatives include blown mineral wool and polystyrene beads.

Cost Around £260
Annual saving £130–£160

Loft insulation with Thermafleece – as well as being environmentally friendly, it can be laid without needing to wear protective clothing

EASY AND CHEAP
Eliminate draughts

Probably the easiest, cheapest way to cut heat loss is to draught-proof your windows and outer doors. Wherever cold air enters, warm air escapes, and draughts can waste up to 20 per cent of your heating. The Draught Proofing Advisory Association (tel: 01428 654011, www.dpaa-association.org.uk) has a directory of members; or you can buy draught-proofing materials at a hardware shop, and do a basic job yourself. Lined curtains, blinds and shutters can also help to keep in heat.

Cost Around £75
Annual saving £20

Tanks and pipes

Insulating your hot water cylinder with a jacket is an easy way to save energy and money. The jacket should be at least 80mm thick.

Cost £10
Annual saving £20

Heat is lost along the whole length of your hot water pipes. The most important ones to insulate are the hottest ones (e.g. between your boiler and hot water tank) and those in the coldest places (e.g. the loft).

Cost £5–£10
Annual saving £20

Turn to **p 81** for an exclusive *Ecologist* reader offer from Thermafleece

Advanced insulation

Solid walls

Solid walls lose even more heat than cavity walls. They can be insulated both inside and out. The most cost-effective and least disruptive time to do it would be if you're renovating.

Internal
Cost: £40 per square metre
Annual saving: £270–£340
External
Cost: From £1,800
Annual saving: £290–£350

Windows

Double glazing halves heat loss through windows. Anglian Windows (www.anglianhome.co.uk) quoted an average cost for a three-bedroom semi (below).

Cost: £8,500
Annual saving: £80–£100

Floors

Where a floor is being replaced, there is the opportunity to include insulation underneath or within the new floor. For solid floors you can insulate on top, using a rigid insulant that will slightly raise the floor height.

Cost DIY, from £100
Annual saving £40–£50

Links

Energy Saving Trust www.est.org.uk/myhome
Energy Efficiency Advice Centre Tel: 0800 512 012
CAT www.cat.org.uk
Ecovation www.ecovation.org.uk
The Yellow House: www.theyellowhouse.org.uk

Assumptions All figures shown are approximate and mostly sourced from the Energy Saving Trust, based on a gas-heated semi-detached three-bedroom house, professional installation and subject to a discount from an energy supplier. Savings assume a gas price of 2.57p/kWh

How to be healthy Hayfever

Around 15 million Britons endure this three-season affliction. **Pat Thomas** looks at causes, treatments and drug-free tactics

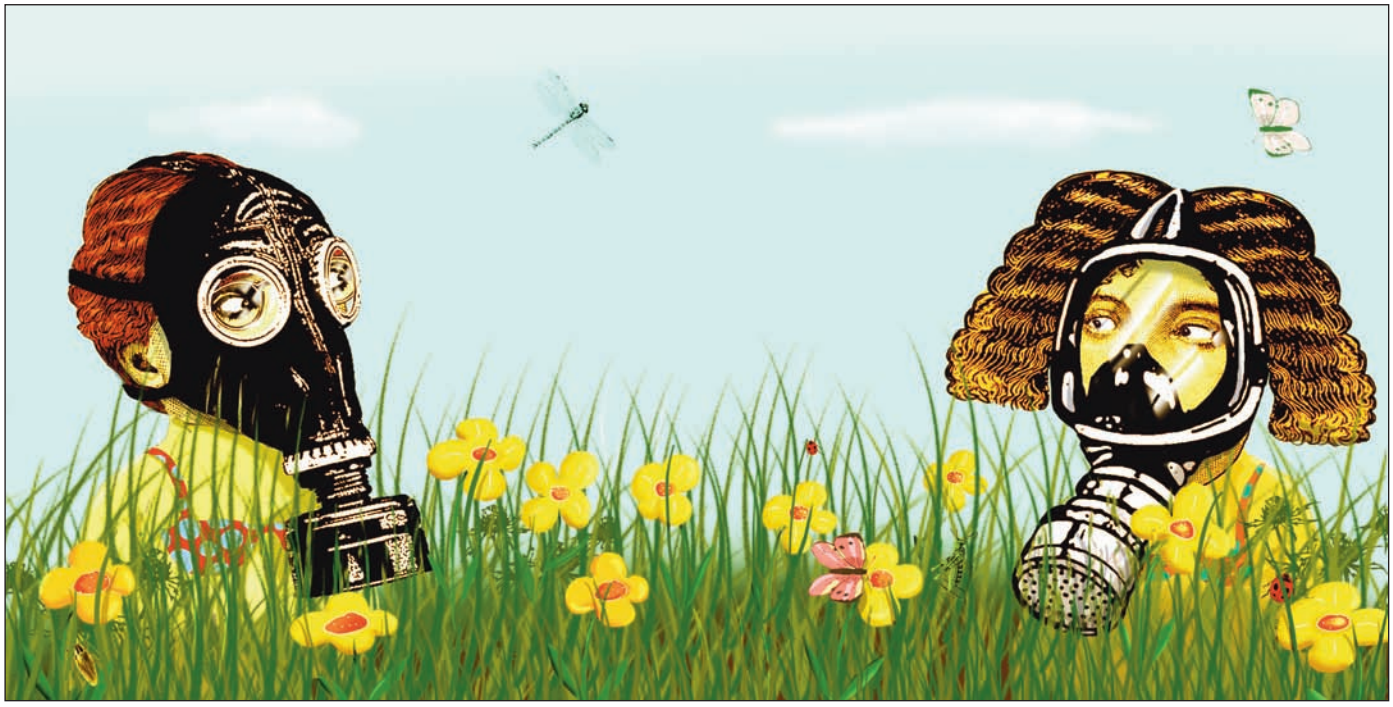


Illustration CAMERON LAW

While most of us may think that the hayfever season ends when summer does, there are, in fact, several hayfever seasons, and for a large proportion of the population each one brings new torment. In spring, tree pollens can cause suffering. In summer, grass pollens bring misery to the majority of sufferers, then autumn brings a final flurry of fungal spores and autumn flower pollens to contend with.

Global warming is now playing a key part in our ongoing woe: our changing climate is bringing earlier summers and more pollination, while environmental pollution traps pollens in the atmosphere.

When and how much pollen is released from plants also depends on day-to-day weather cycles. Because many plants require exposure to a certain amount of heat before they will release their pollen, a cold or wet spring may delay the release of tree pollen by weeks. Pollen release also varies depending on the temperature, humidity, rainfall, wind and sun.

Early mornings are generally the worst time for pollen concentrations because, at that time of day, plants are busy pumping out pollen and this easily accumulates in the still-stable surface air. As the atmosphere heats up on a sunny morning, warm air rises and cool air falls, adding pollution, dust and pollen to the mix already present. Pollen released in the early morning can travel hundreds of miles from its source on the prevailing winds, which is one reason why cities can have high pollen counts even if they have very little vegetation.

Interestingly, while high winds can distribute irritants and allergens over a wide range, they can also reduce the size of the particles in the air. Most physicians believe that this should equate with less respiratory illness. But small particles may also slip more easily into the respiratory tract, causing allergic-type flare-ups.

> “In Britain alone, the incidence of hayfever has tripled in the past 20 years, and global warming now plays a key part in the woe

Misery for millions

Hayfever affects an estimated 15 million people in Britain and its incidence has tripled over the past 20 years. It affects 30–40 per cent of children, with most of them having their first experience of hayfever symptoms in adolescence.

In medical jargon, all these people suffer from seasonal allergic rhinitis – an allergy in the nose. The first symptoms are an itching nose, mouth, throat and eyes, followed swiftly by the all-too-familiar sneezing, nasal discharge, sore and watery red eyes and blocked nose.

Frequently, there’s headache

caused by pressure in the sinuses, plus swelling and inflammation of the membranes of the nose, the pain of which can be almost unbearable.

Like asthma and other atopic disorders, such as eczema, the basic cause of this condition is an exaggerated immune response to allergens; this in turn releases histamine into the nose, leading to inflammation.

Symptoms or side-effects

With so many millions of people in Britain – and indeed throughout the world – suffering from hayfever, it's important that sufferers find something that relieves symptoms and is safe. While there are many conventional medical approaches to hayfever, few are problem-free.

Among the prescription-based medicines, steroid tablets have serious side-effects, such as diabetes, osteoporosis and blood vessel damage. They are particularly unsuitable for children.

Steroid-based eyedrops, although these may be effective, can also be dangerous over the long term, causing glaucoma, cataracts, corneal damage and, ultimately, blindness. Steroid-based nasal sprays are considered a safer option but steroid injections can be fatal.

Decongestant tablets or nasal sprays, available both by prescription and over the counter, will reduce a blocked nose in the short term, but tend to leave you with a worse problem when you stop using them. They also have devastating side-effects.

Many hayfever remedies can now be bought without prescription. Phenylpropanolamine, found in over-the-counter (OTC) medications, can cause strokes, making them particularly dangerous for people with high blood pressure.

Antihistamines, despite being claimed to be both effective and safe, can also cause a variety of side-effects – such as headaches, rashes, photosensitivity, gastrointestinal problems and heart arrhythmias.

The most potentially dangerous side-effect is drowsiness, which may lead to fatal accidents.

According to the British Allergy Foundation, the problem of drug-driving could become as serious a threat to road safety as drink-driving. Its data suggests that road accidents involving people under the influence of legal drugs such as hayfever remedies have soared by 600 per cent in the past decade.

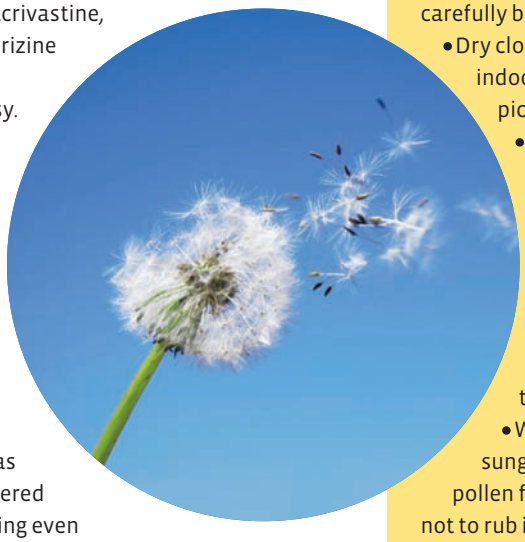
In a recent survey by insurance company Privilege, one in 10 drivers – the equivalent of 3.3 million people – admittted to losing concentration at the wheel due to an impaired reaction caused by illness or medication; and yet almost half (45 per cent) of the drivers surveyed admitted to having driven while taking medication. A quarter admitted to rarely or never checking the side-effects of their remedies before setting off, and just under a quarter believed there was nothing wrong with driving while on any hayfever or allergy medication.

Drowsiness from antihistamines can be detrimental in other ways. Research suggests that nearly three-quarters of students taking hayfever medication can expect to drop a grade in their exams, as ingredients in the most popular remedies interfere with their ability to concentrate.

Hayfever remedies that contain chlorpheniramine K can cause drowsiness, while those with loratidine, cetirizine, acrivastine, desloratidine, levocetirizine or fexofenadine are considered non-drowsy.

In fact, all antihistamines can cause some degree of drowsiness. The only non-drowsy antihistamine would be one that did not cross the blood/brain barier. All antihistamines cross this barrier and as such cannot be considered completely non-sedating even at the recommended dose, and individual susceptibility to this – and to other adverse effects – cannot be predicted. E

> One in 10 drivers admitted to an impaired reaction at the wheel, caused by illness or medication



Preventing hayfever

The best prevention for hayfever is to have allergy-free parents. If either your mother or father has an allergy, you've got a 40 per cent chance of having it too. Failing such foetal foresight, consider the following:

- Relax. Stress can trigger the release of excess levels of melatonin, high levels of which can affect vulnerable people, such as asthmatics.
- Buy an ioniser. Ionisers release negative ions into the atmosphere to counter the over-abundance of positive ions in a man-made environment. Positive ions are associated with triggering increased histamine release.
- Check for common food allergies (e.g. to milk, wheat and eggs), as well as uncommon ones (e.g. to particular fruit and vegetables). They may be exacerbating your symptoms.
- Keep windows and doors closed on high-pollen days; change your clothes and wash your hair when you come in.
- Keep your bed pollen-free: cover it with a spare sheet during the day, and roll this up carefully before going to bed.
- Dry clothes and bedding indoors, to avoid them picking up pollen.
- Keep away from pets who have been outside and avoid grooming them yourself.
- Avoid smoky or polluted places.
- Get somebody else to mow the lawn.
- Wear wrap-around sunglasses to keep pollen from your eyes. Try not to rub irritated eyes as it causes further swelling.
- Be patient. Hayfever often eases with age, especially if it came on before age 30.

CRAZY JACK™ Organic

CRAZY ABOUT FOOD...

...SERIOUS ABOUT THE PLANET !

• Ready to Eat Dried Fruits • Dried Fruit • Nuts
• Seeds • Beans • Lentils • Peas • Baking Ingredients
• Grains & Rice • Flakes • Snacks • Soya • Protein • Sugar
• Spreads • Herbs & Spices • Fruit Juice Concentrate

Crazy Jack, Community Foods Ltd., Brent Terrace, London NW2 1LT.
Tel: 020 8450 9419 • Fax: 020 8208 1551
Web: www.crazyjack.co.uk • Email: enquiries@crazyjack.co.uk

SOIL ASSOCIATION ORGANIC STANDARD

FAIRTRADE Guarantees a **better deal** for Third World Producers

Reader offers

ADVERTISING POLICY Every advertiser featured in *The Ecologist* has been vetted to ensure its products or services don't damage the environment, the people it employs or the consumer.

Food and drink

The online producers below supply genuinely fresh, seasonal fruit, vegetables, fish and meat. And what could be more convenient than having your cooking 'essentials' delivered direct to your door? You can also feel safe in the knowledge that you're buying environmentally sound, delicious food that supports small, independent producers.

FRUIT & VEGETABLES

Do you live near a farmers' market? For a list of farmers' markets around the country, go to **www.whyorganic.org**. Farmers' markets are a great source of locally produced, fresh, seasonal fruit and veg. If you don't live near a good greengrocer or farmers' market, the next best thing is to 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** and click on the 'find your local boxscheme' icon.

ORGANIC BEEF, LAMB, PORK, POULTRY AND GAME

Daylesford Organic
www.daylesfordorganic.com
Graig Farm Organics
www.graigfarm.co.uk
Clare's Organics
www.claresorganics.co.uk
Higher Hacknell Farm
www.higherhacknell.co.uk
Sheepdrove Organic Farm
www.sheepdrove.com
Well Hung Meat
www.wellhungmeat.com

FRESH FISH

Inverawe Smokehouses
www.smokedsalmon.co.uk
The Organic Smokehouse
www.organicsmokehouse.com
Deverill Trout Farm
www.purelyorganic.co.uk
Graig Farm Organics
www.graigfarm.co.uk
Loch Fyne
www.lochfyne.com
Inverawe Smokehouses
www.smokedsalmon.co.uk
The Organic Smokehouse
www.organicsmokehouse.com

Sheepdrove organic farm

READER OFFER

Basic Meat Box – Guide Price £55*
1kg Beef topside; 500g Cubed chuck steak; 500g Minced beef; 1.25kg Lamb half shoulder
500g Cubed lamb (or mutton when in season); 500g Pork and Herb sausages; 1.75kg Whole Chicken; 250g Streaky Bacon

Taste of Sheepdrove Hamper – Guide Price £49.99*
Small bottle of Domaine des Savarines; Books for Cooks Recipe Book; Neal's Yard Hand Cream
Sheepdrove Organic Flour; Jar of Sheepdrove honey; Jar of Sheepdrove marmalade
Whole Sheepdrove chicken; Pack of Sheepdrove sausages; Pack of Sheepdrove bacon

* Price varies according to exact weight of contents.

About Sheepdrove
Sheepdrove is an award-winning traditional mixed farm where crops and livestock are cultivated and reared naturally. It produces beef, lamb, mutton, pork and free range chicken, which can be bought via mail order or from Sheepdrove Organic Farm Family Butchers in Bristol and Maida Vale, London.

Order online at www.sheepdrove.com or phone 01488 674704 quoting 'SOF/ECO1' for the basic meat box and 'SOF/ECO2' for the hamper. Offer ends: 30 Sep 07

Sheepdrove organic farm is offering *Ecologist* readers free delivery (normally £10) on its Basic Meat Box and Taste of Sheepdrove Hamper

AWARD-WINNING ORGANIC FOOD DELIVERED TO YOUR DOOR FROM OURS

Graig Farm Organics offers a wide range of organic foods, including **meats, fish, groceries, baby food, dairy, bakery, etc.**

Organic Food Awards 2006 for Sea Bass, Beef & Mutton Ham.

ORGANIC FOOD AWARDS 1993-2006

GRAIG FARM ORGANICS

01597 851655
www.graigfarm.co.uk

FARMAROUND ORGANIC

Supplies the fruit and vegetables for the staff at *The Ecologist*'s office.
If you want to enjoy this high-quality produce too, visit the website **www.farmaround.co.uk**
or call **020 7627 8066**
Deliveries nationwide.

farmaround ORGANIC est. 1994

Clare's organics

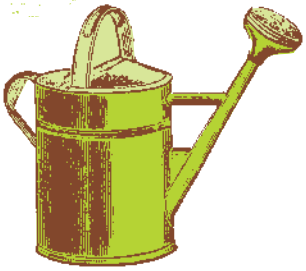
Traditionally reared organic meat
delivered nationwide



To order from Clare's Organics and experience the very best in organic produce, call 01793 710810 or visit: www.claresorganics.co.uk

License No. AB17369

SOIL ASSOCIATION ORGANIC STANDARD



Home and garden

From garden tools to bed linen, cleaning products and furniture – by simply changing our household buying habits we can reduce our carbon footprint and the chemical cocktail that makes its way into our homes. So visit the online producers below for ideas on how to green your home

Thermafleece insulation

READER OFFER

COMPETITION! WIN £500 worth of Thermafleece British sheep's wool insulation

• Thermafleece has four packs of 100mm-thick Thermafleece (which will cover a total area of 40.32 square metres), plus free delivery, to give away to one lucky *Ecologist* reader.

Question: Name two breeds of British hill sheep.

Send the answer, with your name, address and phone number, on a postcard to: Second Nature UK Ltd, Soulands Gate, Dacre, Penrith, Cumbria, CA11 0JF. The winner will be picked from a hat on 31 October and notified then.

Thermafleece is an eco-friendly insulating material made from the wool of British hill sheep. It can be used in a variety of roof, wall and floor constructions.

Wonder wool: seven reasons to insulate with Thermafleece

- Wool gives excellent insulation. Its temperature- and moisture-regulating properties mean that in summer it can lower the indoor temperature by up to 7°C and raise it in winter by up to 4°C.
- Wool is natural, renewable, reusable and recyclable.
- Thermafleece only uses 14 per cent of the energy required to manufacture fibreglass.
- Highly durable, with a long life expectancy, when fitted it will retain its thermal performance.
- Thermafleece can be installed without protective clothing.
- Wool has a higher fire resistance than cellulose and cellular plastic insulants. To add to its intrinsic resistance, the wool is treated with a natural fire-proofing agent.
- Wool can absorb and render harmless many indoor pollutants – even volatile organic compounds (VOCs) like formaldehyde.

www.secondnatureuk.com
Tel: 01768 486285

BUILDING & MAINTENANCE

DIY ESSENTIALS

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

Home energy

Use your electricity bill to help fight climate change. The Ecologist *and Ecotricity have teamed up to make it as easy as possible to support the transition to clean, locally supplied energy – and we encourage you to take steps at home to reduce your energy demand.*

Eco power campaign

How do we meet the UK's energy needs from clean, renewable sources of energy that come from sources as local as possible?

1. Switch to Ecotricity as our energy supplier
2. Reduce our energy demand
3. Localise our energy supply... individually and in our communities

Our current energy sources are non-renewable and increasingly expensive: gas (40 per cent), coal (30 per cent), nuclear (20 per cent) and oil (five per cent). We need to move to non-polluting, small-scale energy sources generated as close to users as possible, e.g. wind, hydro, solar, tidal, etc.

What's wrong with nuclear?
Dale Vince, founder and CEO of Ecotricity says, 'Fossil fuels days are numbered. Nuclear, often held out as the answer to our looming energy gap, is not a renewable fuel. Uranium is finite; its cost has risen tenfold in the last year or so, on the back of increased worldwide usage. It's another fossil fuel story waiting to unfold: mining will peak, demand will outstrip supply and it will one day run out. Renewable energy is the only energy source we can use once and then use again and again, and it's the only sustainable energy source.'

ELECTRICITY

RENEWABLE ENERGY TECHNOLOGIES

British Eco
www.britisheco.com
Dulas Ltd
www.renewable-resources.com
HiTech Energy Ltd
www.hitechenergy.co.uk

LIGHT BULBS

Energy Savers Direct
www.energysavers-direct.com
Energy Saving World
www.energysavingworld.co.uk
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
Kensa Engineering Ltd
www.kensaengineering.com
Powertech Solar

Clothing

The virtual boutiques and retailers featured on these pages 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 something doesn't fit, or you don't like it, simply return it. Being stylish and being ethical are no longer at odds...

Just Bazaar – a Fair Trade shop

READER OFFER

Free scarf (worth £5) with any bag purchased.

For every product sold by the Fair Trade shop Just Bazaar, you can find out where and how it was made and what good it's doing the producers and their community. By clicking on the 'about the producer' website link you'll discover that the scarves are produced in a small family-run factory just outside New Delhi, providing much-needed employment for 25 local people; the water buffalo bags are made in a small village in a remote area of Nepal – and are 'responsible for the income and welfare of the whole village' – and the bracelets carved from tagua (the stone of a fruit in Ecuador's coastal forests) provide an income for the people and a sustainable use of the trees.

As a member of the British Association of Fair Trade Shops (BAFTS), Just Bazaar buys only from BAFTS-registered importers. This guarantees that all products are made in line with Fair Trade principles.

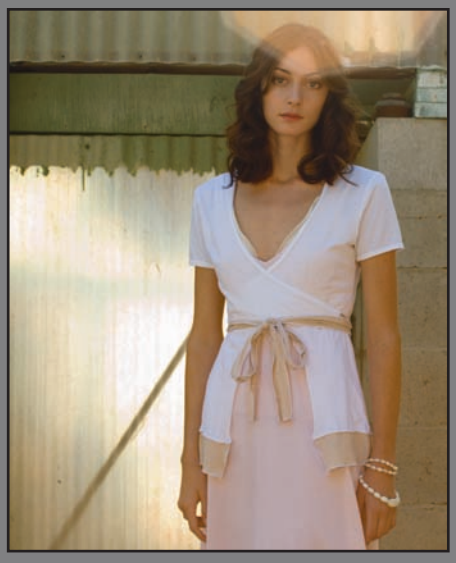
To order: Go to www.justbazaar.co.uk, choose your bag, then type 'scarf offer' in the box that asks 'how you heard about us'. You will receive a free scarf with the bag. Offer ends: 30 Sep 07

Designer Showcase

ENAMORE
www.enamore.co.uk

WILDLIFE WORKS
www.wildlifeworks.co.uk

UNICORN
www.unicorndesign.net



Stewart & Brown
www.stewartbrown.com

ETHICAL FASHION FORUM
www.ethicalfashionforum.com

JUNKY STYLING
www.junkystyling.co.uk

CIEL
www.ciel.ltd.uk

FIFI BIJOUX
www.fifibijoux.com

MUMO
www.mumo-uk.com

Parenting

The amount of baby gear we buy – such as nappies, wipes, bottles, car seats, pushchairs, clothes, shoes, toys and other nursery items – is staggering. Given the ongoing cost of raising a child and the heavy competition that exists between manufacturers, as consumers we would do well to read and understand labels and buy fewer but better products

ECOutlet

10% discount off everything

READER OFFER

Shop for ECO-FRIENDLY BACK-TO-SCHOOL EQUIPMENT and much more at ECOutlet.

ECOutlet is a green internet shopping site with a difference. As well as selling a good range of products that will help reduce your environmental footprint (everything from recycled aluminium foil to eco books; compost bins to manual espresso machines) the site has videos, tips, an events calendar, a blog and a discussion forum.

'We wanted to do something a bit different,' says co-founder Paul Tuite, who set up the site in February this year. Even more intriguing is their system of 'eco-icons' and 'eco-points'. 'We came up with the idea as a fun way to rate products based on their ability to help reduce your eco-footprint,' says Paul. Items score 1 to 5, based on their potential to reduce long-term environmental impact. For every 100 eco-points collected by all members at ECOutlet, the company will donate £2.50 to a UK-based environmental charity. The eco-icons have been devised to show at a glance whether a product is:

- Energy saving
- Water saving
- Recycled or recylable
- Biodegradable
- Chemical-free
- Sustainable
- UK-manufactured

To see their full range visit www.ecoutlet.co.uk

How to order: Simply type in ecologist 0907 at the checkout page

Offer ends: 30 Sep 07

Ecotip
Box scheme baby food

- **The best fresh foods:** Fruits: apple, pear, banana, peach, papaya and avocado. Vegetables: Carrot, pumpkin, swede, parsnip, butternut squash, sweet potato, green beans, cauliflower, peas and broccoli
- **How to prepare:** Steam the vegetables or fruits until tender (between four and 10 minutes, depending on the ingredient). This retains more of the vitamins than boiling. Then purée the fruit or vegetables in a mouli or a food processor.
- Don't add sugar or salt to your baby's food. Salt is harmful to a baby's immature kidneys and sugar is habit-forming.

For more tips, visit www.theecologist.org/baby

Ecotip
Fun and free activities for families

Playtime can be packed with exciting games that don't cost a penny – and that help to protect the environment.

For babies:

- Make a mobile out of unwanted CDs and hang it in the window so that it catches the light.
- Get together with other parents and start a music group. Babies love listening to their mother's voice, and it is the first sound they recognise.
- Don't worry about buying expensive toys. A baby will delight in the contents of your cupboards and cutlery drawer. Provide some saucepans and wooden spoons for musical entertainment.
- Take a walk in the park. Nestled close to their mother's chest in a carrier, your baby will enjoy a walk in the fresh air. It is a chance to watch everything happening around them from a safe, cosy place.
- Make a tactile cloth book using scraps of fabric – choose different colours, bold patterns and different textures – cut to a similar size and sewn together on one edge.
- A baby massage is a wonderful, loving way to end the day.
- Action rhymes and peek-a-boo games will delight babies from a young age.
- A game of skittles can be made by placing a few handfuls of sand in the bottom of six empty plastic water bottles. You and your baby can take turns trying to knock them down using a tennis ball.

(Extracted from *Green Parenting* by Melissa Corkhill, Impact Publishing, Feb 2007, £7.99)

Bodycare & cosmetics

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 here carry products that have not been tested on animals; they contain no parabens, no petrochemicals and no synthetic ingredients

Earthbound Organics

READER OFFER

NEW men's range:
- Men's Face Cream
- Cedarwood Aftershave Cream

Jo Ordonez, founder of Earthbound Organics, makes all the creams by hand in her glass workshop that looks out onto her garden in Wales. 'It's a bit like cooking,really,' she says. 'First I slowly mix the oils together. For the Men's Face Cream I use lighter oils like jojoba, hemp, apricot kernel and cranberry seed. Then, over a low heat, I mix in a block of virgin beeswax from the local beekeeper.' Jo thinks it's the best quality wax there is. 'It's the magical ingredient. I call it my vase of gold.' Once warm, she mixes in orange flower water for its citrus, zingy aroma and its mild antiseptic properties. Then she adds the essential oils. For the Aftershave Cream she adds cedarwood oil for its calming, naturally antiseptic properties and woody smell.

'The new men's range has been a thought for a long time, but finally this spring, the April sun and a few hours in the garden were the inspiration for the ingredients,' says Jo. 'I hope that all the men out there who haven't had a special cream made for them with organic ingredients enjoy both these products.'

All the ingredients in Earthbound products are natural and most are organic. Jo even grows some of the herbs in her garden. To see the full range of Earthbound moisturisers, toners, cleansers, oils and soaps, go to www.earthbound.co.uk

To order: Phone 01597 851157, quoting '*Ecologist* reader offer' Offer ends: 30 Sep 07

Buy a Men's Face Cream (£12.95) and receive a FREE Cedarwood aftershave cream (worth £8.90) NB Offer only available for the first 50 *Ecologist* readers who call.

BODYCARE ESSENTIALS

Akamuti
www.akamuti.co.uk
Barefoot Botanicals
www.barefoot-botanicals.com
Earthbound Organics
www.earthbound.co.uk
Ecotopia
www.ecotopia.co.uk
Essential Care
www.essential-care.co.uk
Jo Wood Organics
www.jowoodorganics.com
Life Giving Organics
www.LifeGivingOrganics.com
My Being Well
www.mybeingwell.com
The Organic Pharmacy
www.theorganicpharmacy.com

HEALTH & HOMEOPATHY

Ainsworths
www.ainsworths.com
Helios Homeopathic Pharmacy
www.helios.co.uk

Organic pet products

Pets are exposed to the same chemicals in their diet and grooming supplies that people are. Surveys show that in general, pet health is declining almost as rapidly as human health. You can improve your pet's diet and use natural flea and tick control methods and overall pet grooming, using products from the companies featured here

ORGANIC PETS

PERO PETFOODS
www.pero-petfood.co.uk
PASCOE'S
www.graigfarm.co.uk
CANINE COOKIE COMPANY
www.caninecookiecompany.co.uk
PETORGANIC
www.petorganic.com
VEGGIE PETS
www.veggiepets.com
BURNS
www.burns-pet-nutrition.co.uk
ANIMALPURE
www.animalpure.co.uk
CANINE ORGANICS
www.canineorganics.co.uk

HEALTHY PAWS
www.healthypaws.co.uk
BISCONES
www.biscones.co.uk

Ecotip
Pet food

It's a dog-eat-dog business. According to a 2001 report from the US Animal Protection Institute (API), commercial pet foods contain mostly grain wastes and meat by-products, which can include euthanised shelter animals, cancer-ridden livestock, road kill, downer animals (i.e. unable to walk), mouldy grains and rancid restaurant grease. Feeding these to pets greatly increases their risk of degenerative disease.

Improving your pet's diet

Dogs and cats were designed to handle raw, uncooked food. Owners can easily mix fresh cuts of meat (not ground) with wholegrains and vegetables for a balanced diet.

Extracted from *What's In This Stuff?* by Pat Thomas (Rodale Books, £12.99).

... and the rest

On these pages you will find products and services that do not fall into our first five classifications, but which are essential to the wellbeing of our planet, and which help you to reduce your carbon footprint. If you think you have something to offer which we have not listed here, please let us know

CAREERS

Charity Action Recruitment
www.c-a-r.org.uk
Charity Connections
www.charityconnections.co.uk
Charity job
www.charityjob.co.uk
Countryside Jobs Service
www.countryside-jobs.com
Eden Recruitment
www.edenrecruitment.co.uk
Ends Environmental Job Search
www.ends.co.uk/jobs/about.htm
Environment Job
www.environmentjob.co.uk
Evergreen Resources
www.evergreen.org.uk
Execucare
www.execucare.com
Getalife
www.prospects.ac.uk
One World
www.oneworld.net

PERSONALS

HOLIDAYS

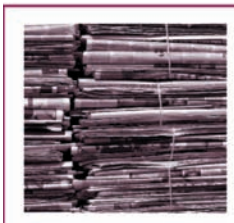
PROPERTY

COURSES

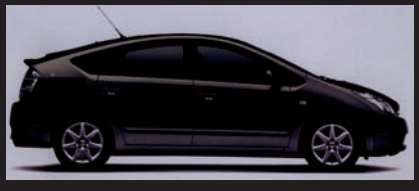
COURSES

BUSINESS RESOURCES

BUSINESS RESOURCES



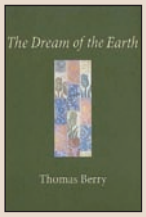

GREEN TRANSPORT



FINANCIAL

Classic book club

Revisiting the books that shaped the environmental movement



The Dream of the Earth

Thomas Berry
Sierra Club Books, 1988, reprinted 2006

American cultural historian Thomas Berry has progressed from his academic background as an historian of world cultures and religions to a historian of the earth.

The ultimate falure of Western society, he says, is to have become not the earth's crowning glory but the instrument of its degradation. This violation stems from our 'anthropocentric' attitude that measures all things as a resource to be exploited. Our legal system fosters our sense of having rights over other creatures and our commerce, industry and economics are based on 'the devastation of the earth'. Spiritual values can be disorientating, with their insistence on the flawed nature of the existing order and the need for relief by escape from the earth.

In this book he outlines the ecological crisis; calls us to enter a new historical period, the Ecological Age; and to transform religion, law, economics and education. His Dream provides a framework for humankind that is earth- rather than human-centric.

Laura Sevier

Event:
Earth is Community: A celebration of the vision of and path of Thomas Berry
Saturday 15 September.
See: www.earth-is-community.org

Log onto www.theecologist.org and contribute to the *Ecologist* book club forum. Happy reading!

World-changing DIY

Whether you want to defeat capitalism or just do more recycling, you could start here, says **Mark Anslow**

'My mum finds some parts of this book too challenging and has to flick back to the gardening pages, which she can cope with,' admits Kim Bryan, one third of the Trapese Collective by whom this book is edited.

Certainly this handbook is not your typical green self-help manual. With chapters on a range of topics as disparate as setting up a community garden and, on a larger scale, toppling the apparatus of capitalism, it's not afraid to offer bold solutions to big problems.

What's more, it is underpinned by the philosophy of its editors. Trapese – which stands for 'Taking Radical Action through Popular Education and Sustainable Everything!' – runs workshops around the country, which tackle everything from the global economy to setting up your own local campaign group. But above all, Trapese is about people, and making connections.

> 'We want people to take this book as a starting point, join with friends and adapt our ideas'

'We're about consolidating networks,' explains the second third of the Collective, university lecturer Paul Chatterton. 'We deal with dozens of UK networks – permaculture groups, socialist groups, dissent groups, direct action groups, but we're not dogmatic, not political, and we're not membership-based. We're about bringing people together.'

So why does a group like this need a book? Alice Cutler, Trapese's last third, explains: 'The scale of the ecological and social problems we face can leave people demotivated, and there's only so much that people can read. We want everyone to take this book as a starting point, join together with friends, and then adapt, change and modify our ideas.'

Just like Kim's mum, everyone can find a part of this fantastic collection that will fire them into action. Issues raised include how society is making us sick, and what we can do about it; why education shouldn't be the responsibility of 'educators'; why the media needs to be reclaimed from corporate clutches and how the power of direct action still has the ability to turn heads. Along the way, you will learn how to rotate crops, organise a group and recycle your grey water.

In a world where most books of this ilk end with a link to a government website, it's a real breath of fresh air to find one that leaves you wanting a padlock, chain and bus ticket to RyanAir's HQ.

Do It Yourself: A handbook for changing our world

The Trapese Collective,
Pluto Press, £12.99

MUSIC

Fuzzy Felt Folk

Trunk Records 2006

A motley of 1960s and 1970s psych folk, experimental film scores and skippy la-la tunes for children's movement classes, this delightfully odd album will take 'strange adults and possibly their children too' (as it says on the back of the CD case) on a tinkly, psychedelic and faintly weird ride. The long-lost and lovingly recycled tracks from Trunk Records include such delights as the demo of *I Start Counting*, composed by Basil Kirchin as the title track for a dodgy 1969 Brit thriller starring Jenny Agutter; *Teddy Bear's Picnic* on a kazoo by The Piggleswick Folk; more traditional folk guitar and the glassy, spooky vocals of Oriel Smith in the experimental *Winds of Space*. Frankly bizarre, but most wonderful. **Rachel Clode**

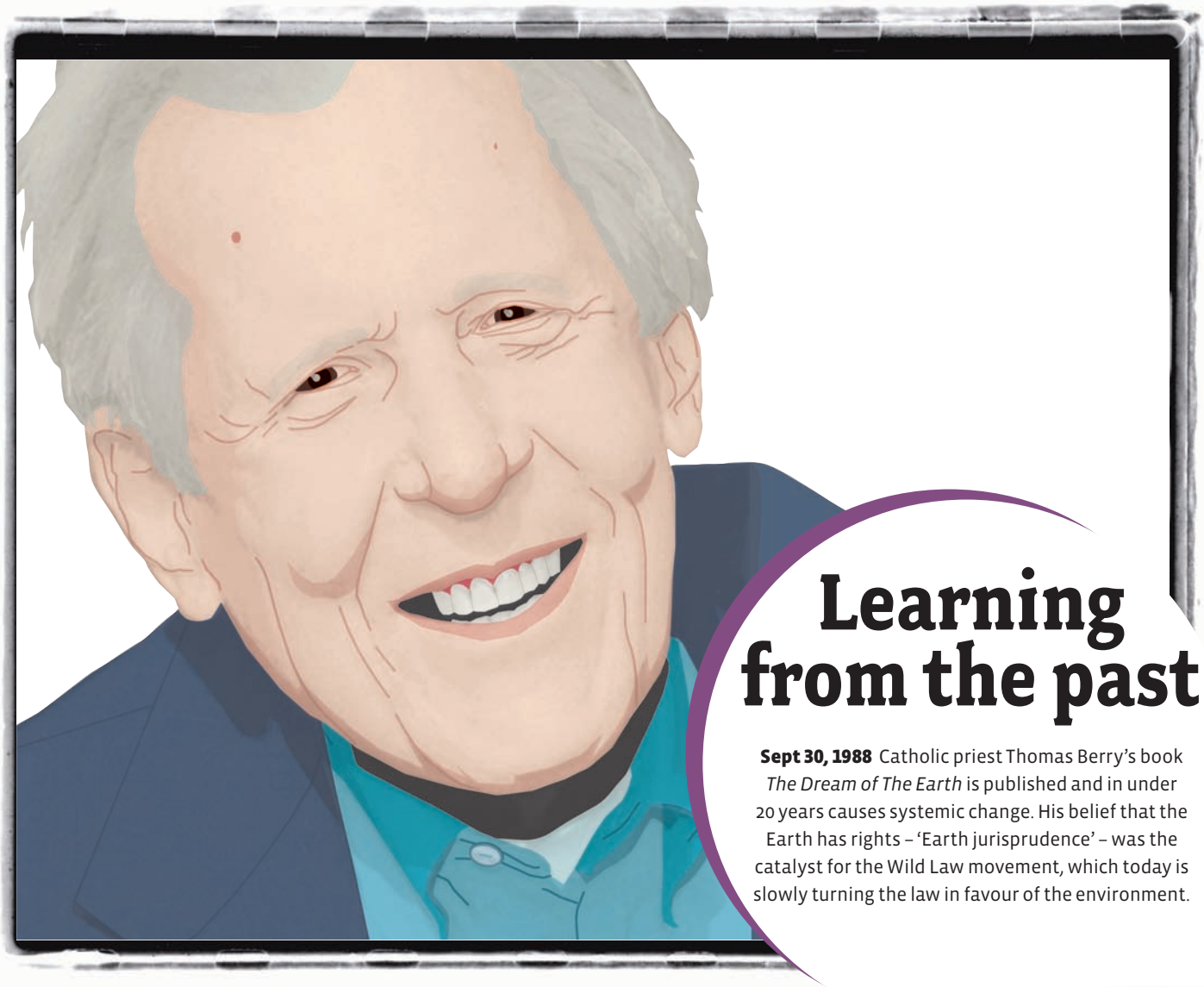


Illustration Katarina Sochanek

Learning from the past

Sept 30, 1988 Catholic priest Thomas Berry's book *The Dream of The Earth* is published and in under 20 years causes systemic change. His belief that the Earth has rights – 'Earth jurisprudence' – was the catalyst for the Wild Law movement, which today is slowly turning the law in favour of the environment.

From songs to strategy

Watched the gig, wore the T-shirt... now buy the book? **Mark Anslow** checks out the Live Earth handbook

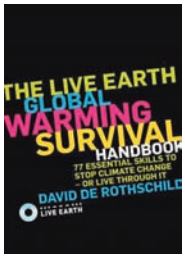
Do you have friends who drive 4x4s and look at your copy of the *Ecologist* as if were *Mein Kampf*? In that case, this book is for them.

While the Live Earth global concerts had plenty of critics, and perhaps righty so, at some level the mega-event helped underscore the message. This book picks up where the bleeding-heart pop stars left off, and gives you 77 simple ways in which you can make a difference. Importantly, de Rothschild doesn't mince his words in describing either global warming or the task of combating it, which he acknowledges is 'monumental' – a far cry from books of this kind published even a year ago.

The book covers everything that fledgling 'greenies' in particular could find inspiring: from greening your office and recycling, to building a straw-bale house and putting in a grass roof. All this and more, in user friendly, cartoon-illustrated pages. A bit too easy-peasy to be realistic? Maybe, but then it's meant to have mass appeal.

Much of it is too simplistic, and the section on aviation is typically understated, but the 'global warming survival guide' at the end is (perhaps unintentionally) intriguing. Meant seemingly as a joke, suggestions such as brushing up on your bartering skills for when the global economy collapses, mining landfill sites for valuable materials and building an ark end up looking fairly sensible.

Seasoned pros won't get too much out of this, but eco-virgins could have far worse reading material on their roads to Damascus.



The Live Earth Global Warming Survival Handbook
David de Rothschild
Melcher Media/Virgin Books, £7.99

Film
A disaster in search of success

The biotech industry has hyped its GM Bt cotton as a saviour of the developing world. But the experience of farmers who have grown it suggest otherwise. A group of women farmer-filmmakers from the DDS Community Media Trust travelled to Mali, South Africa and Indonesia to investigate.

In Makhatini, South Africa, often cited as a showcase project for small farmers, 100,000 hectares were planted with Bt cotton in 1998. By 2002, that had crashed to 22,500 hectares. By 2004, 85 per cent of farmers who grew Bt cotton had given up, because of pest problems and no increase in yield. Those who still grow it do so at a loss, continuing only because the government subsidises the project and there's a guaranteed market for the cotton.

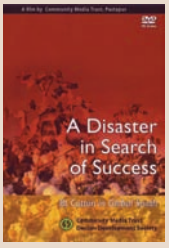
USAID is pushing for the introduction of Bt cotton in Mali. But Mali's cotton farmers have produced huge increases in yield without GM crops. At the conclusion of a citizens' jury to assess pro- and anti-GM evidence, the farmers unanimously told their government they do not want GMOs.

Bt cotton seeds were introduced into Indonesia with the army riding shotgun and Monsanto giving massive bribes to officials. But problems with pests, poor yields and high seed costs so angered farmers that they burned the Bt cotton fields. Monsanto fled.

India's government has continued to welcome Bt cotton despite the thousands of farmers who have committed suicide after their Bt cotton crops failed.

This award-winning film provides an antidote to the hype of corporations and the wilful blindness of governments.

Claire Robinson



A Disaster in Search of Success: Bt Cotton in Global South A film by Community Media Trust and Deccan Development Society, India, 2007. www.iied.org/pubs/display.php?o=14539IIED

Giants fall, by gad!

Jon Hughes enjoys a winning tale of farming folk

In June 2006 the *Ecologist* featured Fordhall Farm. At that time there was one month left to save the farm and £600,000 required to do so. The Hollins reached their target. Of course, it wasn't the *Ecologist* wot won this David and Goliath battle: that was down to the sheer determination of Ben and Charlotte and those who rallied to their side.

Müller, the mass producer of yoghurty foods, wanted the farm to expand their operations in Market Drayton, Shropshire. This would have been a sad end for Fordhall, which under the stewardship of the Hollins' late father Arthur had shunned pesticides and fertilisers and followed sustainable, organic farming methods for much of the last century. Their father Arthur was such an eccentric, he even appeared in a German book about English eccentrics.

The stage was set for a real-life melodrama, with Müller demanding £800,000, and the Hollins children fighting to avoid eviction from their family home, while running the farm.

Their story, with all its very high highs and very low lows along the way, captured the imagination of people around the world, who bought shares in the farm to create a land trust and save it for the community.

The Hollins' story, told in turn by Ben and Charlotte, is heart-warming. It shows what quiet determination and steadfastness can achieve, and that there is growing support out there for those of us who are sick of seeing our neighbourhoods and communities ruined by big-business demands for efficiency – and it's a damn good 'How To' guide for anyone who finds themselves in a Nimby battle.

The Fight For Fordhall Farm
By Ben and Charlotte Hollins (Hodder & Stoughton, £16.99)

Saddle philosophy

Two old friends cycle around Ireland... and their journey becomes a discourse on life, says **Jon Hughes**

To be sure, this book's got a blarney title but don't let that put you off. Here is storytelling philosophy in the great tradition of the Greeks, which it eloquently goes on to deconstruct, along with other pillars of established thinking.

Tony, the author, and John, his companion on this epic journey, graduated from Trinity College Dublin 50 years ago, but went on to to lead wholly different lives. John qualified in medicine and became a professor of salmon biology in Newfoundland. Tony studied economics, became an accountant and followed a career in industry.

At the start of the journey John bemoans the collapse of the salmon fisheries in fascinating and angry outbursts about the 'Evil One': 'Engineers, architects and bureaucrats, they're the same all over the world. They can be guaranteed to destroy any ecosystem.' Another of John's 'slimy monsters' is big business, the Coca-Colas, Monsantos and McDonalds of this world, sweeping all before them to increase profits.

> 'Our uneasy riders have given us a philosophical *tour de force*, a lyrical gem and a travelogue'

Tony, naturally, protests. He's spent his life in business and he's never met a buisness executive with evil motives; 'most are moral upright citizens' and 'lying, cheating and greed are frowned on and stamped out'.

And so starts a discourse, thought about in the saddle and undertaken during their frequent breaks to pee and eat blackberries, picnic, visit pubs and B&Bs, that is glorious in its breadth but firmly rooted in the everyday. The lady in the purple shorts whom they delight in seeing starts a riotous conversation about political correctness that becomes a critique of religion and leads, many miles and days later, to the conclusion that the rules of PC will eventually replace the religious creeds to which many around the world adhere. Crossing the border between North and South is a sombre divide that sparks new thinking about game theory and group behaviour.

The concern about the salmon grows into a spellbinding philosophy to explain how innately moral, social, cooperative beings such as ourselves can act in a way to destroy John's cherished fisheries and, by orders of magnitude (and pedalling), the world.

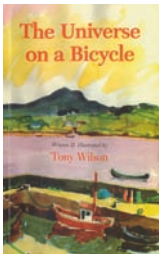
Drawing on both their individual expertise and life-experience, while frankly admitting in which areas they are freewheeling, they arrive at Dual Nature Theory.

In this they endeavour to solve the problem that has baffled everyone since Darwin's theory of evolution emerged: how morality evolved. The theory also explains why over the years philosophy has struggled to keep abreast with scientific discovery.

The Greeks, the churches of the world, the Enlightenment... all made huge errors of thought and judgment by perceiving morality to be a rule (such as 2+2=4). Looking as they do at morality as something innate, alongside the flight-or-fight laws of nature, these guys might just have cracked it – and many of the social problems we're all too aware of today.

Lofty claims? Not at all. Tony and John have achieved an enviable thing (apart from the no mean achievement of riding the 1,436 miles round Ireland in 43 days, at the age of 68); between them they have added to our sum of knowledge.

Our uneasy riders (too much gravel in the underpants) have given us a philosophical *tour de force* and a lyrical gem from the Emerald Isle, which also makes it a wonderful travelogue. Whether you agree with them or not, I defy you not to delight in their company.



The Universe on a Bicycle
written and illustrated by Tony Wilson (Elliott & Thompson, £12.99)

Last words? Ongota

Status: Moribund – sure to die out soon, as there are only half a dozen elderly speakers remaining.
Habitat: The village of Muts'e on the forested banks of the Weyt'o River, South Omo province, south-western Ethiopia.
Description: Of Ethiopia's 80-plus languages, Ongota (also known as Birale) is the only one that remains unclassified. Some linguists think it is a member of the Afro-Asiatic group, but it bears scant resemblance to any others so is commonly held to be an isolate. Historians have speculated that Ongota, with its markedly large lexicon, is a hangover from the ancient trade routes linking Africa to the Far East.

Ongota is very unusual in that it follows an Object-Subject-Verb (OSV) word order. An example of this in English would be 'a termite the anole eats', meaning 'the anole eats a termite' (SVO). It also contains many glottals (throaty sounds), marked phonetically by apostrophes – in place names, for example (see Habitat).

Originally hunter-gatherers, the Ongota subsist by fishing, farming sorghum and corn and keeping a few livestock. They are probably South Omo's smallest ethnic group. Most have now switched to using a neighbouring language, that of the Ts'amakko – a more powerful and numerous people. They have been exchanging wives with them for some time, and these days so many Ongota children have mothers with other origins they are not taught their hereditary speech. This all starts in lusty youth; there aren't enough Ongota girls at the Ongota dances, forcing the lads to go and dance (*i'a'chouta*) with the Ts'amakko instead. So Ongota is an interesting case where, due to a combination of cultural, social and economic factors, these people have deliberately and willingly abandoned their language to survive better. They've swallowed their tongue.

David Hawkins

How to be free
Anarchy in the UK

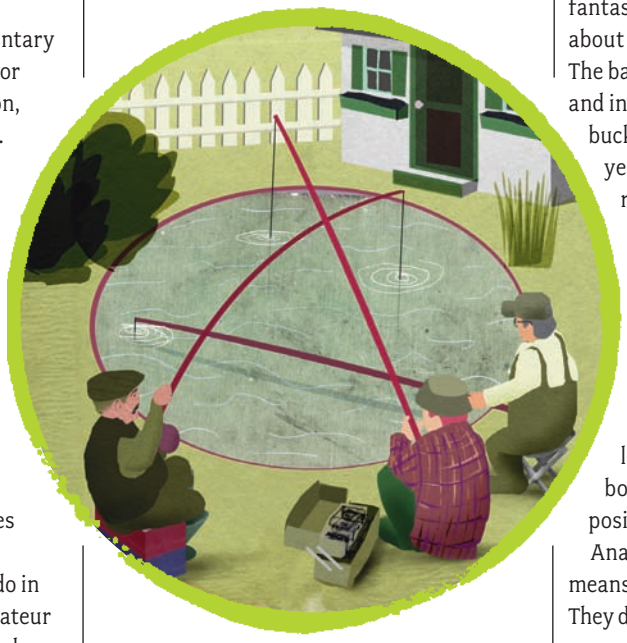
We can achieve amazing things when we do so for love, not money. **Tom Hodgkinson** celebrates the radicals in our midst

I am spending the summer talking about anarchy at various festivals and talks. I'm trying to get the idea rehabilitated as a serious political approach. It's a shame but, over the past 100 years or so, anarchy has been caricatured as a matter of bomb-throwing Italians in Piccadilly, or spiky-haired drunkards smashing up bus stops and shouting at the police. This media trick of making anarchy synonymous with violence and disorder has tended to blind us to the merits of what is in fact a peaceful, practical and eminently planet-friendly approach to life. The basic principle underlying anarchy is a belief that voluntary association and cooperation is a superior principle on which to base human action, rather than authority and competition. It's more fun and gets better results.

The contemporary anarchist Colin Ward talks about the principle of 'anarchy in action'. By this he means the amazing things that people can achieve when left alone. Every whist drive, every railside allotment, every small festival, every local cricket match, village fête, skateboard ramp, independent bookshop, ceilidh or car-boot sale is anarchy. Anarchy is when we get on with things by ourselves without waiting for legislative change. Anarchy is your hobbies; it's what you do in your spare time. It's about being an amateur rather than a professional. In other words, it's about love, not money.

Where I live on the coast of North Devon there are three excellent examples of anarchy in action. One is Woody Bay Railway. This is an ongoing project by a group of volunteers who have lovingly recreated a narrow-gauge railway that closed down in the 1930s. Visiting the station takes you back to an age where railwaymen were proud of what they did. The atmosphere is friendly and fun and the place is lovingly kept with a fantastic tea room and pretty gardens. Compare that with Birmingham New Street station, my idea of hell on earth, with its acrid smells, grumpy staff and filthy trains. That's socialism in action for you. Socialism is well-intentioned ideas imposed on a grumpy workforce.

A second example is our local cinema in Lynton. Again, it is run by volunteers who operate the place through love and not money. It seats around 80 people and tickets are a mere £4. We saw *Shrek the Third* there and it was great fun. Every moment of the experience is a pleasure. First, you don't have that awful feeling that the multiplex engenders, of being ripped off with overpriced popcorn. You don't get the general feeling of discontent from the underpaid staff. The quality of the projection and the sound is superb. Again, this is a project done for its own sake, not because some hot-shot entrepreneur is going to build a chain of them and then sell it for millions.



'The basic principle is a belief that voluntary association and cooperation is better than authority and competition'

A third example is our music festival. Each year a team of unpaid volunteers organise a major music festival, with 50 bands and DJs at 10 different venues. This year we had Gruff Rhys of the Super Furry Animals and various other weird and wonderful bands. It's a fantastic weekend and the amazing thing about it is that it's free. No entrance charge. The bands play by the sea, on the common, and in the pubs in the evening. We pass a bucket round to raise funds and during the year there are auctions and gigs. We also raise money from sponsorship from local companies and get the odd small grant from the local council.

These are just three examples, and none of them is run by anyone who would consider themselves to be an anarchist. But they are precisely what anarchy is all about. In this sense the local lady who runs the secondhand book shop is a far more radical and positive political force than Tony Benn.

Anarchists do not talk about seizing the means of production. They've already done so. They don't wait for 'rights' to be granted by a government. They just get on with digging the earth. Freedom cannot be given by an authority, because freedom is a denial of authority. So freedom is simply taken without asking for permission. That doesn't mean we smash the State and big business with violence. It means we peacefully get on with our lives and keep our contact with those blundering purveyors of ugliness and boredom to a minimum. E

Tom Hodgkinson is the Editor of *The Idler* and author of the book *How to be Free* (Hamish Hamilton, £14.99).

Illustration DAVID HUMPHRIES

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