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PHOTO STORY:
Child labour

BEHIND THE LABEL

Blistex lip salve

**LIGHT
POLLUTION...**
Is it sending us
all mad?

**HOW TO
CONTROL
A 10,000lb
VEGETARIAN...**

Meet Lek,
the elephant
whisperer

**LESSONS
FROM
NATURE**
Poison Toads

MUD, SWEAT AND TEARS

ONE MAN'S MISSION TO CUT UP
HIS SUPERMARKET LOYALTY CARD



GREEN PAGES

OUR 32-PAGE GUIDE
TO ETHICAL LIVING

Hugh Fearnley-Whittingstall eats November
Monty Waldin drinks Domaine Gauby
Ethical Christmas food and gift guide
PLUS: Natural cold remedies • November in
season • 200+ ethical organisations



"THE STUFF OF GOLDEN STATUETTES"



ALAN JONES - FILM REVIEW

"A BLISTERING TRIUMPH" ★★★★★

MARK ECCLESTON - GLAMOUR

**"INTELLIGENT AND MOVING...
'CITY OF GOD' WAS NO FLUKE"**



NEV PIERCE - TOTAL FILM



FROM THE ACADEMY AWARD® NOMINATED DIRECTOR OF 'CITY OF GOD'
BASED ON THE BEST SELLING NOVEL BY JOHN LE CARRÉ

THE CONSTANT GARDENER

15 CONTAINS STRONG LANGUAGE
AND SEXUAL NUDDY

RALPH FIENNES RACHEL WEISZ

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FOCUS FEATURES PRESENTS IN ASSOCIATION WITH THE UK FILM COUNCIL A POTBOILER PRODUCTION IN ASSOCIATION WITH SCION FILMS RALPH FIENNES RACHEL WEISZ "THE CONSTANT GARDENER"
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AT CINEMAS NATIONWIDE FROM FRIDAY NOVEMBER 11
CHECK LISTINGS FOR DETAILS



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THIS MONTH IN HISTORY: NOVEMBER 1995

'For two nights I have not slept a wink, I am being intimidated, harassed and de-humanized, even though I am supposed to be receiving medical attention ... I am like Ogoni, battered, bruised, brutalized, bloodied and almost buried'.

Letter from Ogoni human rights activist Ken Saro-Wiwa, smuggled out of a military hospital during his trial.

Saro Wiwa was accused of murdering four leaders of the Ogoni, the very people he had dedicating his life to protecting. He denied the charges, asserting that he was fighting to stop a corrupt government and Shell from destroying the environment and the people of the Nigerian delta. On November 10 1985, he and his fellow eight defendants were executed.

Earlier this year, just days before the launch of the Remember Saro-Wiwa project, six people were feared dead after an inter-community clash sparked by an anti-Shell demonstration. One of the communities told the Nigerian press that: 'They wanted to engage Shell and the government in discussion as to how certain issues concerning environmental devastation, the loss of their means of livelihood could be solved. They also wanted to request for the provision of basic amenities like potable drinking water and electricity but instead of addressing this, Shell invited the military'. IDepressingly, despite Shell and the Nigerian government's continued promises, 10 years after Ken Saro Wiwa's death, little has changed.

www.remembersarowiwa.com

ecologist

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EDITORIAL



The accolades that preceded the much anticipated unveiling of Rachel Whiteread's sculpture at the Tate Modern last month hinted at something truly spectacular.

According to Catherine Wood, curator at the museum: 'Rachel thought very long and hard before accepting this commission.

She needed time to germinate an idea before saying yes.' Vicente Todolí, the Museum's director, described Whiteread as 'one of the world's leading contemporary sculptors, producing works of outstanding originality'. Mark Francis, director of the Gagosian gallery, predicted something 'fantastic'.

The artist herself chose to remain ambiguous, but told reporters: 'I hope to challenge the space by developing a degree of intimacy, which somehow relates to all our lives.'

When the doors to the great Turbine Hall were finally opened to reveal thousands of white boxes – in 20 or so piles – the praise escalated still further. And so too the inevitable analysis. According to the Tate: 'The box has an emotional resonance. It prompts consideration of the associations with the box in our daily lives and its links to memory and loss, as well as its latent familiarity.'

But what had Whiteread actually created? To my – admittedly untrained – eye, she'd filled a large warehouse with seemingly identical white boxes, whose layout it would be hard to describe as interesting. 'Landfill' is probably more appropriate.

And that's what's so utterly confusing. If the project makes zero sense to me — or indeed to anyone I know — why has it been greeted with such rapturous applause? What can the applauders see that I can't — no matter how hard I try? Why can't I also discover the 'soft emotional spaces, heavily impregnated with memory, bodily fluids and fluid desires'? What's wrong with me?

Well, I have a sneaking suspicion that the applauders may not be able to see very much at all – beyond, that is, a pile of throw-away boxes hastily assembled by a team of assistants, destined for a large hole somewhere in the outskirts of London.

So why the pretence? Is it driven by a fear of appearing stupid – like the courtiers in the famous children's fable who cheered as their Emperor paraded his non-existent new robes — robes they had been advised were invisible to all but most cultured and intelligent people? Why else would so many join the chorus of praise for displays that are self-evidently not praise-worthy?

But unlike the tailors in the children's story, whose intentions were unambiguously corrupt, today's artists actually believe their works are layered with significance – progressive and ultimately valuable. So while it's tempting to imagine a conspiracy – a grand confidence trick – it's not. Unlike the Emperors' tailors, our artists are no crooks.

On the contrary, they are telling a truth. Through their work, they provide insights into the society they belong to, just as artists have done for countless generations. If modern art is abstract, artificial, disposable, synthetic, it's no coincidence that these are the very cornerstones of a restless consumer society that craves originality, but places no value on craftsmanship or beauty. The global economy itself makes no concession to the living world, or to ecological limits. It is the last word in abstract.

If the biosphere survives the current onslaught, there will no doubt come a time when some of the objects that so excite contemporary art critics are held as monuments to an era governed by the artificial, the abstract and the ugly.

Some, not all. The majority will be deposited in a hole somewhere – along with crisp packets and old mattresses. But the artists will have done their job.

Letters



SHOT IN THE DARK

Brilliant article on the flu jab (*Ecologist* October 2005). When considering this particular attempt to browbeat nature, it might be useful to remember that in naturopathic tradition there is a reason why cold and flu viruses constantly change. It is actually in our interest, because the body uses colds and flu on a regular basis to slough off accumulated toxins. Viruses and bacteria only flourish in suitably toxic tissue. The more toxic we are, the more colds and flu we get, until the body reaches such a state of overload that it can no longer make the effort, leading either to more serious deep-seated disease, or death from the attempt to deal with flu type illnesses.

Therefore, it follows that the best way to avoid colds and flu is to live and eat according to the best health rules we can find. For example, Swiss researchers found that a nutritional tonic, Biostrath, proved far more effective than the flu vaccine in preventing flu. Why did we not hear more of this? Because this approach is alien to big pharma and orthodox medicine.

Our society, after decades of brainwashing and fear tactics, sees vaccines as part of a good health regime, when in fact they are a large part

of the problem (the problem of escalating immune system diseases and brain damage), not the solution.

Helen Jarvis
By email

ANOTHER SHOT IN THE DARK

With regard to your revealing article on the hazards from regular flu jabs, a new study apparently shows that those who have had a flu jab for five years or more in a row have a 10-fold increased risk of Alzheimer's disease (Hyde B, Fudenberg HH et al. Hazards of vaccines. II. *Int J Clin Investigation*, in press).

Besides mercury, the aluminium hydroxide and aluminium phosphate used in such vaccines are suggested as possible causes.

Simon Best
Editor, *Institute for Complementary Medicine Journal*

FOOD FOR THOUGHT?

I feel that the cookery articles by Hugh Fearnley-Whittingstall do not chime well with your central theme, which is a deep concern for the environment as a whole. As a vegetarian, I find the pictures distressing and the whole idea of rearing and killing animals for food

extremely unecological. You must be aware of the vast acreage of land that is used for growing grain for cattle feed (38 per cent of world grain is fed to animals) and other issues connected with this huge and profitable industry, not least human health.

There are also the risks such as FMD, BSE and vCJD arising from farm animals fed on antibiotics and the ground-up brains or bones of other creatures. In 1994, cattle were the second largest source of UK methane emissions, a potent greenhouse gas.

Clare Fordham
By email

LOVE IS GREEN

I have found a truly exciting practical application for the *Ecologist*, which I encourage everyone to take full advantage of.

About a month ago I sat down next to a very sexy man. Not knowing quite how to start a conversation, I eventually built up the courage and made a whimsical comment about an article I was convincingly engrossed in.

As a compatibility barometer, this has to be the best tool in the single person's kit. Immediately, we gauged each other's interests and opinions on all things topical and began a conversation that really hasn't stopped since. We started seeing each other and haven't looked back.

Thank you *Ecologist*, you have found me a most stimulating and satisfying relationship. I strongly urge others to do the same. Use the *Ecologist* as a pick-up tool, it certainly saves a lot of time when trying to work out if a stranger is on the same wavelength as you!

Bec Huxtep
by email

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

TAKE ACTION AT
www.theecologist.org/actions.asp



ecologist online debate

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

THIS MONTH: IS ORGANIC FOOD A LUXURY?

Highlights from the debate so far...

Organic food is important, but supermarkets, and some smaller organic stores, are working on the principle that everything should be available all the time, instead of the original idea of organic produce as local food that reduces food miles. Produce from South Africa, Egypt or Argentina and wrapped in plastic is not what organic food is about.

Philippa Nuttall

Immediately after World War 2, the average household spent 40 per cent of its income on food. Without wishing to return to the impoverishment of war, this seems to me a fair

reflection of the true value of food. The only reason we are reluctant to spend more to buy healthy, sustainably produced local food is because we're all too busy saving up for things we don't need, most of which will end up in landfill sites.

Matt Carmichael

Organic food seems to be part of a two-tiered system for providing essential goods and services. The rich get organic food, private health care, private schools for their children, and parking spots for their company cars. The rest of us get toxic food, underfunded medical care and education, and costly, inefficient, run down public transport.

Jim Mavroidis

What's the point in abstaining

from petro-chemical applications on our food crops, only to burn petro-chemicals in our atmosphere for every species to breathe?

Alastair Muirhead

I believe that we should spend more of our income on food. It's just plain silly to say that you can't afford to buy a jar of fairly traded, organic coffee, if you buy a brew from a coffee shop every morning on the way to work, or buy ready made sandwiches for lunch every day. People who feel that they genuinely don't waste their money and whose circumstances are tight, might want to look into local schemes that buy in bulk and sell at almost wholesale prices directly to the consumer.

To be truly ethical and save

food miles, anyone with a garden could try to grow some organic vegetables, leading to the freshest, healthiest food of all.

Emma-Louise Scott

NEXT MONTH'S DEBATE:

Further to the article on pages 14-18 on the dangers of toxic tyre dust:

'SHOULD RESPONSIBILITY FOR PRODUCTS THAT CONTAIN TOXINS REMAIN WITH THE MANUFACTURER AND NOT BE 'SOLD' ON TO THE CONSUMER?'



ASPARTAME UPDATE

Since the publication of our Aspartame cover story (September 2005), we have been inundated with letters and emails from people wishing to congratulate us on our tough stand on this toxic food additive.

We have been given a great deal of support and enough additional information for three more features by Betty Martini, long time anti-aspartame campaigner and founder of Mission Possible International (www.dorway.com). We have also been keeping a keen eye on events in the US state of New Mexico, where activist Stephen Fox has been petitioning the state to act on long existing statutes that provide for the removal of adulterated food substances from sale within the state, thus allowing New Mexico to provide a higher degree of consumer protection than is being offered at federal level.

Early in October, New Mexico's Environmental Improvement Board heard arguments for and against the proposed ban. In spite of industry lawyers' attempts to convince the Board they had no legal right to enact such a ban, it was decided that New Mexico in fact did.

When New Mexico's Governor Bill Richardson was asked after the hearing if he considered aspartame harmful, he answered, 'Yes, from what I've learned.' Gov. Richardson, of course, has the power to order the removal of all aspartame-containing products from sale in New Mexico. As it stands, a further five-day hearing has been scheduled for July 2006 that will hopefully resolve the issue.

In cases like this the legal hurdles are often more difficult to negotiate than the medical evidence. Stephen Fox (stephen@santafefineart.com) and attorney Stevan Douglas Looney are to be congratulated for their dogged determination in this respect and we look forward to the party in New Mexico next summer.

In the UK, opportunities to pre-empt decisions taken at UK government and EU level can be difficult to find. However, as a start, we would like to see parents and patients pressing local education authorities, hospitals and trusts to stand up to the Food Standards Agency and the EU's Scientific Committee on Foods and refuse to stock aspartame-containing products.

Finally, readers may be interested to know that we are currently in discussion with Tate & Lyle's lawyers, who tell us that their clients took exception to our article 'Sucralose: Life After Aspartame'.



PHOTOGRAPH COURTESY OF WWF

DIRTY OLD KING COAL

Twenty-seven of the 30 dirtiest power plants in Europe are coal-fired, according to a new study by the WWF. The 'Dirty Thirty' research, which looked at the absolute CO₂ emissions of power stations (million tonnes of CO₂ per year) and ranked the 30 biggest emitters according to their level of efficiency (grams CO₂ per Kilowatt hour). Most of the Dirty Thirty are located in Germany (nine plants), followed by Poland (five plants), Italy, Spain and the UK (four plants each). Greece has two lignite plants ranked in first and fourth place. In the UK the worst stations were: Longannet in Fife, Scotland (ranked 17th), Cottam in Nottinghamshire (ranked 20th), Ratcliffe (ranked 22nd) and Drax in Yorkshire (ranked 27th).

Andrew Lee, director of Campaigns at WWF-UK, said: 'The power sector is responsible for 37 per cent of all man-made CO₂. Coal-fired power stations rank dirtiest, because they use the most carbon rich fuel. To tackle climate change we have to replace them with cleaner alternatives.'

www.panda.org/powerswitch/dirty30ranking.



TV - THE DRUG OF A NATION

The following are all findings from Remotely Controlled, a report by Aric Sigman, an associate fellow of the British Psychological Society, into the impacts of television. The report concludes that regardless of the type of programmes people watch, even a moderate amount of viewing:

- Dramatically increases the risk of myopia in children,
- May trigger premature puberty,
- Slows children's metabolic rate,
- Leads to a greatly increased risk of sleep problems as an adult, resulting in hormonal changes, which in turn directly increase appetite and body fat production and damage the immune system leading to a greater vulnerability to cancer,
- Is a greater factor than either eating junk food or not doing enough exercise as a cause of obesity,
- May damage brain-cell development and function, specifically in those neural circuits governing attention and impulse control,
- Significantly increases the risk of abnormal glucose metabolism and new Type 2 diabetes,
- Is the only adult recreational activity positively linked to developing Alzheimer's disease,
- Is a major cause of clinical depression (from which the UK suffers more than any other country in Europe).

HERO OR ZERO?



HAPPY AS PIGS...?

The small Indiana town of Reynolds has been designated by the state's Department of Agriculture as the world's first 'BioTown'. The plan is for homes and business in the town to have the electricity provided by biofuel produced by the burning of methane released from the nearby industrialised pig farm. 'The goal is to create a new use for the manure that's surrounding the town – as a biofuel,' says Deborah Abbott of the state's Agricultural Department. Another way of seeing the scheme would be as a way of greenwashing

industrial pig farming. Forget what happens to the waste once it's left the 'farm'. The pigs are forced to live in horrifically cramped, artificially lit conditions, and fed growth hormones and excessive volumes of antibiotics just so they can survive long enough in what is basically their own excrement to be fat enough to kill for sale.

19

MILLION

The number of bicycles sold in the US in the last 12 months (when oil prices have soared), which is more than the number of cars

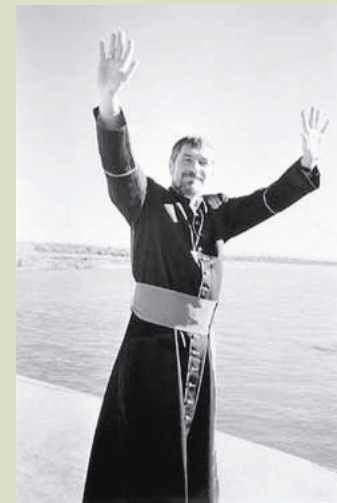
HIGHEST EVER NUMBER OF UK KIDS ON RITALIN

More children in the UK than ever before were prescribed drugs for so-called behavioural disorders last year. Prescriptions of Methylphenidate – most commonly sold as Ritalin – rose to 359,100 last year, a rise of 344,400 since 1995.

The Citizens Commission on Human Rights criticised the findings, saying: 'Some children may be a little boisterous, but psychiatry's fixation on labelling such difficulties and prescribing medication is nothing more than pseudo science. Children are being dragged into submission.'



"The council has decided that the banner (reprinted above) is an advertisement and therefore illegal. After a couple of days I got a phone call telling me to take it down, and then about a week later I received a stern letter saying that the council intends to prosecute me. Watch this space for further updates, and please register on the website www.ethicalnetwork.org. Together, I think we can make a difference."



HERO: LUIZ FLAVIO CAPPIO

Luiz Flavio Cappio, Roman Catholic bishop of Barra in the Brazilian state of Bahia Cappio, went on an 11-day hunger strike at the end of September to protest against government irrigation plans in the region. The project would divert the river San Francisco along a 440 mile (700 kilometre) network of canals at a cost of \$2 billion. The government says it will irrigate large areas of Brazil's dry, poverty-stricken north east. Cappio contends that it will just line the pockets of big business rather than help the poor, and vowed to fast until death unless President Luiz Inacio Lula da Silva cancels it. Under the current proposals, up to 70 per cent of the water will be used for the production of shrimp, grapes, flowers and other farm exports. Only four per cent will be channelled to the homes of poor families in arid areas. However, following a direct intercession from the Pope, who sent Cappio a personal letter requesting he end his fast, Cappio stopped his hunger strike, having received assurances from the Brazilian government that the plan would now be reviewed.

WHAT WE LEARNT LAST MONTH...

■ **A Chinese ex-millionaire is offering up his face and entire upper body as advertising space.**

■ **A robotic dog has been designed specifically for slimmers. It monitors their progress and responds with canine delight when they lose weight.**

■ **A new Croatian reality TV show has gone on air. The contestants are sheep and the viewing public votes on which one should be saved from slaughter each week.**

■ **A new UK scheme to encourage people to recycle is offering scratch cards with up to £500 in prizes – which the lucky winner can then spend on loads more tat, thus replenishing the recycling loop.**

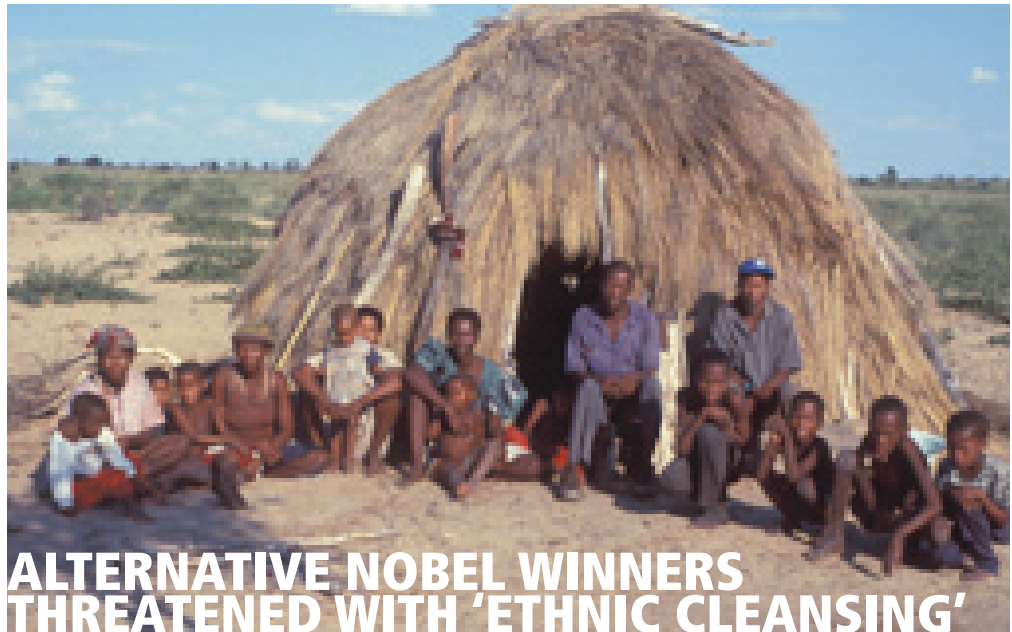
■ **A German inventor claims to have developed a method for making diesel fuel out of dead cats.**

■ **The European Food Safety Authority has decided to allow chicken feed to be supplemented with formaldehyde as a growth enhancer. Formaldehyde is classified as a probable human carcinogen by the US Environmental Protection Agency, and as a known human carcinogen by the International Agency for Research on Cancer.**

■ **The Pentagon held a 'Freedom Walk'. In order to enter walkers had to register online for the right to march along a fenced-in route, accompanied by Clint Black's patriotic soft rock anthem 'Iraq and Roll'.**

■ **Two one-time major American airlines, Delta and Northwest, filed for bankruptcy.**

■ **A 20 foot treadmill was installed in an Alaskan zoo to help an elephant lose weight.**



In late September, the First People of the Kalahari (FPK), the grass-roots organisation of the Gana and Gwi Bushmen of Botswana, won Sweden's Right Livelihood Award, known as the 'Alternative Nobel Prize'. The award was given for the bushmen's 'resolute resistance against eviction from their ancestral lands, and for upholding the right to their traditional way of life.' Unfortunately, not only were no bushmen there to receive the award, they didn't even know they had got it as five days before the FPK leaders were among a group of 28 bushmen arrested by Botswanan police, who were firing tear gas and rubber bullets. The bushmen were attempting to take food and water to their relatives still inside the Central Kalahari Game Reserve, from which most of the bushmen had been evicted.

The bushmen leaders were badly beaten after being handcuffed and were then imprisoned for several days. Three bushmen were shot and wounded and a seven-year-old, Kekailwe, was shot in the stomach as the police arrested his father when he refused to let them search his hut without a warrant. In a separate incident, Kesodilo Ntwayamoga was shot from behind in each leg as he stood with both hands raised. Witnesses stated that police were trying to force him to admit to hunting. In the third incident, Mokgakalaga Gaoberekwe was shot in the jaw on 24 September as he and others attempted to enter the Game Reserve to take water and food to their families.

Then, on 6 October, a small group of bushmen emerged after evading the police who had surrounded their huts and walking for three days through the desert. According to one of them, Kangotla Kanyo: 'The others and I came out of the reserve to tell the outside world that we are really suffering with thirst and hunger. The police are camped at our settlement and we are not allowed to gather or dig anything to eat. The policeman called Dibulle told us, "If you die, the government doesn't care. This is the time to show you that you are nothing." The police said that we have to suffer thirst and hunger so that we will leave the reserve.'

Two days later, dozens of bushmen were evicted from their ancestral land by police who carried out the removals at gunpoint and then set fire to the bushmen's huts. The Botswana government has been trying to get the Gana and Gwi Bushmen off their ancestral lands in the Central Kalahari Game Reserve since the discovery of diamonds in the 1980s.

To send letters of protest go to www.survival-international.org





AT LAST UN CALLS FOR RECOGNITION OF 'ENVIRONMENTAL REFUGEES'

Environmental disasters could force 50 million people from their homes by 2010, according to a new UN study. The study, which went on to say that desertification, flooding, storms and rising sea levels due to climate change could in the long term make hundreds of millions of people homeless, called for the creation of a new category of 'environmental refugee'. Some 20 million people have already been displaced as a result of problems such as eroded farmland and polluted water supplies, said the report by the UN University's Institute for Environment and Human Security 'This is a highly complex issue, with global organisations already overwhelmed by the demands of conventionally recognised refugees,' Hans van Ginkel, UN Under-Secretary-General, said in the report. 'We should prepare now, however, to define, accept and accommodate this new breed of refugee.'

“

The whole idea is to bring back the smell of the countryside to the city, because people have forgotten how the country really smells.

A spokesman for a Dutch perfumier who is bringing out an perfume – L'essence de Mastenbroek – which smells of the countryside village of the same name

”

LINKS IN THE STEEL CHAIN

In October, the government of the Indian state of Jharkhand announced its intention to take tribal people from different parts of the state on tours of the State's cities. They said the idea behind the visits was to show the tribes what 'development' is in the hopes of integrating tribal populations into the 'mainstream'. That same month, Mittal Steel Company (MSC), the world's largest steel maker, signed a memorandum of understanding (MoU) with the Jharkhand government for setting up a \$9 billion steel plant in the region. However, for the MoU to turn into a real deal, the tribal people will have to give permission for their land to be mined. Even the Indian press saw a possible connection, with *The Economic Times* saying: 'The real reason behind this unique plan could be the government eyeing tribal land for setting up industry and wanting a change in their mindset... To translate the MoUs into reality, the state needs their land, and a change in the tribal mindset alone can help it acquire land from them, said an official.' Coincidentally, in June the Labour party accepted a £2m donation from Laksmi Mittal, MSC's head, who gained fame a couple of years ago when an earlier donation was swiftly followed by lobbying efforts from Blair himself that resulted in Mittal securing a £300m Romanian steel contact.

FORD ACCUSED OF GREENWASH OVER NEW 'FUEL EFFICIENCY CAMPAIGN'

Ford Motor Company – for a long time ranked as the producer of the least fuel efficient cars in the US – has announced a 'nationwide effort to teach consumers how to improve fuel economy' including a 'Fuel-Economy School' and '10-city tour to bring fuel saving driving tips to local communities'.

A recent report from the Union of Concerned Scientists ranks Ford as having 'the absolute worst heat-trapping gas emissions performance of all the Big Six automakers'. From subcompacts to SUVs, Ford's current line up gets fewer miles per gallon on average than the Model-T did over 80 years ago.

22

MILLION

The weight in tonnes of rubbish left in Louisiana by Hurricane Katrina. The contents of the waste include around 60,000 boats, 350,000 cars and a 1.5 million gallon oil spill



WHERE THERE'S SMOKE

Philip Morris' marketing documents from last year reveal the ingenious ways in which the cigarette firm is attempting to promote its products in the face of ever tighter legislation. According to *The Observer*, 'Philip Morris, the manufacturer of Marlboro ... created a crack team to transform the insides of Britain's upmarket bars and music events, in an attempt to boost its profits.' As well as offering rewards to bar owners for displaying furniture, ashtrays or vending machines with Marlboro's logo on them, the company tried a more 'subliminal' approach. Bars were paid to redesign themselves as so-called 'Marlboro Motels' where no logos or branding were visible, just 'comfortable red sofas in front of video screens showing scenes redolent of Wild West 'Marlboro country'. to convey the essence of the cigarette brand while circumnavigating sponsorship bans.'

“ I am slowly dying in this solitary prison cell. I have no rights, no hope. So why not take my destiny into my own hands, and die for a principle? ”

Omar Deghayes, a British refugee and Guantánamo Bay prisoner, explaining why he and several other prisoners went on hunger strike in August

“ I hear people say we have to stop and debate globalisation. You might as well debate whether autumn should follow summer. ”

Tony Blair at the Labour conference confirming his willingness to discuss the key issues of the time

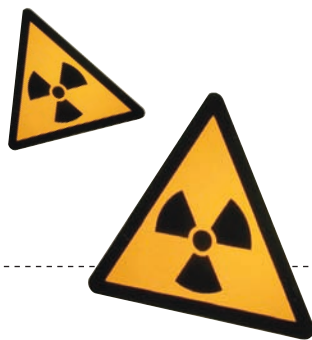
PATENT MADNESS

A study by MIT academics Kyle Jensen and Fiona Murray, and published in *Science* journal, has found that 4,382 of the 23,688 human genes (nearly 20%) have been claimed as US intellectual property in 4270 patents owned by 1,156 institutions and companies. About 63 per cent of these belong to private firms. Responding to this news, Bob Phelps, from the lobby group Australian Gene Ethics Network, said: 'Our view is that genes and their functions are discoveries, not inventions, and should not therefore qualify for patents. We do not agree with patents on the genes to build investor confidence and to raise venture capital, often before any inventive work has been done. By all means reward inventors of new techniques and technologies for their work, but do not grant monopoly ownership for discovering genes in nature.'



Activists dumped two tonnes of sand in front of Shell's South Bank headquarters at 12.30pm on Friday 30th September and scaled lampposts in the parkland opposite to hang a 40 foot banner in protest of Shell's proposed development in Rosspoint, Ireland. Go to www.shellfacts.com to learn more.

PHOTOGRAPH BY ISABELLE MERMINOD



NUKES AGAIN?

'For how much longer can countries like ours allow the security of our energy supply be dependent on some of the most unstable parts of the world? ... and that means an assessment of all options, including civil nuclear power.'

Tony Blair at the Labour party Conference

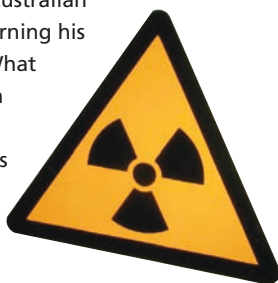
To help Tony 'assess', here's a round up of the latest nuclear events...

■ In the month that BNFL announced it was to sell off everything it owned including the Sellafield nuclear waste treatment plant, an internal Sellafield report, seen by the *Independent on Sunday*, said that the plant is marked by a 'catalogue of dubious practices', is 'potentially dangerous' and is 'becoming difficult to operate properly'. There is even a section in the report with the headline 'Homer Simpson works at Sellafield'.

■ John McTernan, Tony Blair's director of political operations, suggested to members of the Scottish Executive that building a new nuclear power station at Dounreay would be a great way of sabotaging their Liberal Democrat coalition colleagues. The Lib Dems currently hold the seat of Caithness, Sutherland and Easter Ross – where the Dounreay nuclear complex is currently being decommissioned.

According to McTernan, building a new nuclear power plant there would split the Lib Dems' support and boost Labour's chances of winning the seat. Duncan McLaren, the chief executive of Friends of the Earth Scotland, described the idea of siting a new nuclear station at Dounreay as the 'the height of environmental and political stupidity'. McTernan later claimed he was joking.

■ On the other side of the world, former Australian Prime Minister Robert Hawke suggested turning his country into a global nuclear waste site. 'What Australia should do in my judgement, as an act of economic sanity and environmental responsibility, is say we will take the world's nuclear waste,' Hawke said. The current government's health minister welcomed the suggestion, calling it 'visionary'.



We look forward to hearing your vision, so we can more better do our job. That's what I'm telling you.

George W. Bush



GLOBAL WARNINGS

A monthly update of climate change news

■ World sea levels could rise 30 centimetres by the end of the century, according to a new study by German research institute The Max Planck Institute for Meteorology. In the 20th Century they rose just five centimetres, and while it is considered that Europe could adapt to such rises, low lying and poor countries such as Bangladesh could be devastated. According to the institute, average global temperature could rise by as much as 4.1 Celsius by 2100, melting sea-ice in the Arctic.

■ The seasonal ozone hole over Antarctica widened to a near-record size, at approximately 27 million square kilometres, according to the World Meteorological Organisation (WMO). Nonetheless, the WMO does not expect the record measurement of 28 million square kilometres, reached in 2003, to be broken as ozone depletion is now happening at a slower rate. The ozone layer filters out much of the ultraviolet light from the sun that would otherwise be harmful to much of life on this planet.

■ Satellite pictures of the Arctic revealed that in September the extent of Arctic sea ice was 20 per cent lower than the long term average for the month, meaning that a further 500,000 square miles had melted. Surface air temperatures across most of the Arctic Ocean were also found to be two to three degrees Celsius higher on average this year than from 1955 to 2004. The loss of Arctic ice would have a terrible impact on the survival chances of animals such as polar bears. It would also alter the balance of the earth's climate as while the ice previously reflected the sun's heat back into space, dark-coloured water (ie a liquid) absorbs it, so exacerbating the melting process further.

■ Glaciologists in America have discovered that the Kangerdlugssuaq Glacier in south east Greenland is melting at a faster rate than ever before, raising fears of much faster rising sea levels than previously thought. For much of the 20th Century the glacier remained stable, although there is serious concern that it could now be moving toward the sea as fast as 38 metres a day. If all the Greenland icecap melted, the world's oceans could rise by up to seven metres.

■ Best selling novelist Michael Crichton was called before a US senate committee following the publication of his latest novel *State of Fear*, in which the hero is a scientist who discovers that climate change is a fraud. 'I would like to thank Dr Crichton for the endless hours of entertainment he has given me on Delta Airlines,' began one senator. 'Dr Crichton's science background has served him well in providing material for his books, many of which explore scientific issues, my favourite of which is *State of Fear*,' declared Senator Inhofe, chairman of the committee that had summoned Crichton. Earlier this year Inhofe called global warming 'the greatest hoax ever perpetrated on the American people'.

TYRE DUST

WHERE THE RUBBER MEETS THE ROAD

Think vehicle pollution and you think of the internal combustion engine. What comes out of the exhaust pipe is undoubtedly bad, but the stuff that comes off the tyres may be even worse for your health. **PAT THOMAS** REPORTS

Most of us could list at least half a dozen reasons why cars are bad for our health and bad for the environment. Cars are inefficient forms of transportation, they consume our rapidly declining stocks of fossil fuels, they are difficult to dismantle and recycle and they generate major pollutants such as hydrocarbons, nitrogen oxides, and carbon monoxide.

What might not be on that list, however, are tyres. Even if you are a car owner it is unlikely that you think about tyres at all until they need air, go flat or require replacing. Tyres are so fundamental to the function of every vehicle in the world – from the smallest Smart car to the biggest lorry and fastest jet – that it would never occur to many of us to ask what goes into them, or more importantly what comes out of them when the rubber meets the road. Yet pollution from tyre dust is linked to an expanding range of health problems including allergies, asthma and even heart disease.

Where does the tread go?

What goes into a tyre must also eventually come out. When a rubber tyre, bearing the weight of a vehicle, rolls across an asphalt or cement surface, tiny fragments of rubber, known variously as tyre dust or particulate matter, break off. Some become airborne and some are deposited at the side of the road, ready to be swept up by passing vehicles. Particulate matter is a very insidious form of air pollution and tyres contribute significantly to this form of pollution.

In the 1970s and early 1980s, when scientists working for the tyre industry

and the Environmental Protection Agency (EPA) studied this phenomenon, it was concluded that tyre dust fragments were too large to enter the human lung and so presented no threat to human health. Today we know differently. Several studies published in the last decade have demonstrated that about 60 per cent of these fragments are so small that they can enter the very deepest parts of the human lung. The particles of greatest concern are those that measure 10 microns or less in diameter (a human hair, by comparison, is about 70 microns thick and the dust motes that can be seen spiralling through the air when the sun shines through the window measure around 10 microns).

A Dirty Mixture

The microscopic dust that comes off tyres contains a unique mixture of substances that have a more powerful effect on the body than naturally occurring dust. To form the rubber into hard-wearing vehicle tyres, an extensive range of chemicals including xylene, benzene, petroleum naphtha, chlorinated solvents (for example 1,1,1-trichloroethane), polycyclic aromatic hydrocarbons, anthracene, phenanthrene,

benzo[a]pyrene, phenols, amines, oil, acids and alkalis (eg sodium hydroxide), polychlorinated biphenyls, halogenated cyanoalkanes, processing aids, and plasticisers. Tyre processing also involves several heavy metals including zinc, cadmium, lead, chromium and copper.

By way of illustration, in one experiment published in 1998 in *Environmental Health Perspectives*, researchers from the University of Texas' Houston Health Science Center exposed immune cells called macrophages to ash collected from the Mount St Helen's eruption and to airborne dust from St Louis and Washington, DC. The volcanic dust had no effect on the cells but the urban dust caused the macrophages, which normally keep immune reactions under control, to die. The likely result of this

Tyre dust particles are linked to health problems from allergies and asthma to heart disease



damage is an overly aggressive immune response, with the potential to cause inflammatory damage to the lungs.

It is hardly surprising, then, to find numerous studies linking the rise in asthma and other allergies over the last 25 years to particulate matter in the air. In the past this problem was blamed on exhaust pipe emissions, particularly diesel exhaust. But now researchers believe that the microscopic dust generated by tyres is equally, if not more, influential. In areas of high traffic it can cause asthmatic attacks and pose a serious threat to elderly patients whose lungs are already weakened by age and illness. Babies and young children are also at increased risk; per pound of body weight, they inhale more particulates than adults.

Studies continuously show that asthma rates are higher in those living close to busy, congested roads. In one 1994 study published in the *Archives of Environmental Health*, children admitted to one Birmingham hospital for severe respiratory problems were much more likely to be living near busy roads than healthy children or those admitted to hospital for other reasons.

Allergies on the rise

In addition to generalised allergic responses, tyre dust also produces some very specific allergic responses. Tyres are made from a combination of natural latex, derived from rubber trees, and synthetic rubber derived from petroleum. At least 70-75 per cent of all natural rubber produced today is used to make tyres – the rest goes to making latex gloves and condoms, as well as paint and adhesives.

Latex allergy was first noticed in the late 1970s. As the fear of AIDS became a major medical concern, more and more medical workers started wearing latex gloves and this increased exposure to latex meant that allergies became much more common. Today, because of their continuous exposure to latex gloves, tubing and other rubber coated medical and surgical paraphernalia, up to 10 per cent of all health care workers show signs of an allergic reaction to latex.

But studies of individuals living near busy roads has shown that the latex portion of tyre dust can also cause allergic

SPARE TYRES

Tyre dust is a significant source of pollution. But what happens at the end of a tyre's lifecycle produces an altogether different kind of pollution. Piles of waste tyres are rapidly accumulating around the world. As of 2003, about 290 million tyres were discarded in the US every year (roughly one per person). In the UK around 40 million spare tyres accumulate each year. Since 2003 it has been illegal to dump whole tyres in landfills in the UK and by next year it will be illegal to dump chipped tyres into landfills as well. The disposal of tyre waste is now a major problem throughout the world and one to which there are no apparent solutions.

Tyres are designed not to fall apart and this means that they are difficult to dispose of. Although they can remain substantially intact for years beyond their useful life, the number of dangerous chemicals in tyres mean that they can't be safely burnt. Nevertheless, cement makers and paper mills are happy to use waste tyres as fuel – a disastrous enterprise that produces even higher levels of particulate pollution. Buried in the ground, their constituent chemicals leech out on the ground and water table. Used to make artificial reefs, they can provide homes for certain types of marine life, but are toxic to many fish.

At the moment the best use of old tyres is to extend their life by retreading them. This process involves grinding down the surface, or casing, of the worn tyre until it is smooth and gluing a new veneer of tread onto it. While retreading a tyre uses far fewer resources than buying a new tyre, it is not entirely environmentally friendly since it still involves the use of non-renewable resources to make the new tread, and strong adhesives and other toxic chemicals to attach it to the old casing (and, of course it makes no impact whatsoever on the problem of tyre dust).

A quality car tyre can be retreaded about three times, and tyres for larger vehicles can be retreaded as many as 12 times. Unfortunately, according to the Used Tyre Working Group, a joint industry and government initiative sponsored by the main tyre industry associations, just 18 per cent of Britain's tyres are retreaded. Around 48,500 tons are converted into crumb rubber – used in carpet underlay and to make springy surfaces for running tracks and children's playgrounds. However, this makes little dent in the 435,000 tons of waste tyres produced by the UK each year.

reactions ranging in severity from rhinitis (runny nose) and conjunctivitis (tearful eyes), to hives (urticaria), bronchial asthma, and occasionally even a life-threatening condition called anaphylactic shock.

Equally alarming is the way that latex allergy can produce cross-reactions to a wide variety of fruits, vegetables and legumes. This phenomenon, referred to as latex-fruit syndrome, means that some people who become sensitised to latex will also experience allergic reactions to foods such as banana, kiwi, chestnuts, avocados, peaches, tomatoes, potatoes, peppers and peanuts. Latex-allergic people also occasionally have cross-reactions to some kinds of pollen and herbal remedies. No studies have ever been done that conclusively link tyre dust to latex-fruit syndrome, though it is tempting to speculate that individuals living near busy roads might make a silent, albeit

significant, contribution to the increasing prevalence of food allergies in the developed world.

Deadly Dust

The unique combination of known carcinogens, neurotoxins, heavy metals and other poisons in tyre dust can also be linked to more serious diseases. In a 1994 report on the adverse effects of particulate air pollution, published in the *Annual Reviews of Public Health*, researchers found that for every cubic metre of air, an increase of 20 micrograms (mcg) of particulate matter meant a one per cent increase in deaths from all causes. In this study deaths from respiratory failure, but also heart failure, were much more common as particulate levels increased. This estimate is echoed in the conclusions of a recent report by the non-profit Health Effects Institute in Cambridge, Massachusetts, which found that death

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ENVIRONMENTAL IMPACTS

At every stage of a tyre's life cycle, from the sourcing of raw materials to the mountains of waste tyres that blot the landscape, tyres are bad news for the environment. Tyre manufacture relies on fast disappearing natural resources, such as rubber trees, as well as non-renewable resources such as petroleum and mined minerals. It also generates significant levels of localised pollution. Nevertheless, it is during and at the end of their life that tyres generate the greatest amount of harmful pollutants.

Material/Source **Natural rubber**

Predominantly obtained from the sap of the Hevea brasiliensi tree.

Application Currently makes up about 30 to 40 per cent of the total rubber used.

Potential impacts

- Loss of habitat in tropical forests.
- Use of pesticides and hormone-based growth promoters (used to increase sap production).
- Transportation to markets.
- Pollution from rubber processing plants.

Material/Source **Synthetic rubber**

All synthetic rubbers are made from petrochemicals.

Application Accounts for approximately 60 to 70 per cent of the total rubber used

Potential impacts

- Resource depletion of petroleum.
- Energy consumption, emissions and waste during manufacture.

Material/Source **Steel cord and beading including the coating materials and activators, copper/tin/zinc/chromium.**

The steel is premium grade and is only manufactured in a limited number of plants around the world due to the high quality requirements.

Application Provides rigidity and strength to the tyres. In a car tyre, steel cord makes up about 15 per cent by weight.

Potential impacts

- Energy use and toxic emissions during processing and transportation.
- Difficult to recycle.
- Leaching of metals during disposal.

Material/Source **Other reinforcing fabrics**

Predominantly sourced from petrochemicals.

Application For structural strength and rigidity. Makes up about five per cent of a radial tyre (one reinforced with steel).

Potential impacts

- Toxic emissions/energy use during processing and transportation.

Material/Source **Carbon black**

Generally sourced from petroleum stock.

Application Imparts durability and wear and resistance to degradation. Makes up about 28 per cent of a passenger tyre, although the amount is higher in the rubber that makes up the wearing surfaces.

Potential impacts

- Toxic emissions/energy use during processing and transportation.

Material/Source **Zinc oxide**

Mined/refined material.

Application Adds resistance to UV degradation, controls the vulcanisation process and enhances blending. Zinc oxide makes up about 1.2 per cent of a passenger tyre.

Potential impacts

- Mining erodes the soil.
- Toxic emissions/energy use during processing, manufacture and disposal.
- Leeches into the soil and water from waste tyres.

Material/Source **Sulphur (including compounds)**

Used to vulcanise the rubber.

Application Makes up about one per cent of a passenger tyre.

Potential impacts

- Toxic emissions/energy use during production/processing.
- Toxic emissions released when tyres are burned for fuel or disposal.

Material/Source **Other additives and solvents**

Age resisters, processing aids, accelerators, vulcanising agents, softeners and fillers are used in the various rubber compounds to modify handling manufacturing and end product properties.

Application Additives make up about eight per cent of a passenger tyre.

Potential impacts

- Various impacts associated with manufacture and transportation including energy use, non-renewable resources and toxic emissions.
- Impacts associated with use and disposal of the solvents.
- Emissions from tyres in use, during recycling and in final disposal.



TYRE DUST

rates in the 90 largest US cities rise by 0.5 per cent with only a tiny increase – 10 mcg per cubic metre of air – in particles less than 10 micrometres in diameter.

However, these findings may underestimate the real risk. This month a large, long-term study of residents in the Los Angeles, published in the journal *Epidemiolog*, found that for each increase of 10 micrograms per cubic metre of fine particles in the neighbourhood's air, the risk of death from any cause rose by 11 to 17 per cent. The risk of death from diabetes rose more than two-fold and the risk of death from heart disease rose by an astounding 25 to 39 per cent. Similar findings were published in 2003 in *Circulation: Journal of the American Heart Association*, where researchers looking at 16 years of data on more than a million people concluded that long-term exposure to air pollution posed a greater risk of death from heart disease than it did for death from respiratory ailments.

New research continues to emerge on the mechanics of the microscopic dust-heart failure connection. A healthy heart is able to vary its beats per minute widely, depending on the demands being placed on the body. But when researchers at Harvard Medical School took electrocardiogram (ECG) and blood-pressure readings from 21 Boston residents aged over 50, heart rate variability decreased dramatically when the patients were exposed to air with high levels of very fine particulate matter. Decreased heart rate variability is a known risk factor for sudden heart failure.

Why particulate pollution should have such an effect on the heart rate is still a mystery. One possibility is that when you inhale these very small particles deep into your lungs, some of them make their way into the bloodstream, where they find easy access to organs such as the heart. Once they become lodged in cardiac muscle, these particles may also initiate an inflammatory response that reduces blood flow and speeds the progression of atherosclerosis.

Humans aren't the only ones affected. While studies into the effects of particulate on animals in their natural habitats are thin on the ground, laboratory studies show that inhaled dust can damage both the hearts and lungs

of dogs, mice and other animals. In one investigation, dogs exposed to levels of particulates no higher than those found in many US cities experienced significant changes in their heart rhythms.

Frustration

The impact of particulate matter – from tyres and other sources – on human health is undeniable. It is particularly frustrating, then, that there appears to be no immediate answer to, or recognition of the problem of tyre dust.

In June of this year a report, *Particulate Matter in the United Kingdom*, produced by the Air Quality Expert Group, the body that advises government on matters of air quality, concluded that although particulate matter levels have been decreasing over the past few decades, background levels are still very high and more work needs to be done to ensure that national targets for reducing particulate matter are met.

The report also notes that relatively

little data exists to quantify the emission rates, size, distribution and composition of particulates from tyre wear. It also reveals that figures for emissions from non-exhaust sources like tyres are not even taken into account in the Atmospheric Emissions Inventory of the UK's largest city, London. Even without this vital London data, the group estimates that tyre and brake wear emissions accounted for more than 23 per cent of the total road transport emissions.

When government think tanks think about tyres, they focus on the environmental menace of waste tyres (see box on page 15). This is undoubtedly important, but clearly its scope is woefully inadequate. We've got to put the bigger picture of tyre lifecycles onto the agenda before we can even begin to reduce their impact on health and environment.

■ Pat Thomas is the Ecologist's Health Editor.



Extracting latex from a rubber tree

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Dear Dr. Tatiana



*Like, what's the deal?
I'm a sleek young
California mouse and
am so in heat. But,
like, the guy next
door won't pay any
attention to me? Even
though his wife is
totally old and ugly?
No way is he still in
love with her. How
come he's, like, such a
dull dude?*

*'So Bummed Out in
Berkeley'*

Dear So Bummed out in Berkeley,

However old and ugly their wives, male California mice are not to be lured away from them. Once one of these dudes, as you call them, has a partner, he won't cheat on her even if he finds himself locked up with a virgin in heat. So if you want a man, you'll have to find one who's single. Bad luck.

But perhaps you're wondering what accounts for your neighbour's saintly behaviour. Well, I guess infidelity is just not in his nature, he's a breed of anti-Lothario. It's easy to imagine how he could have become that way. These days, California mouse couples are truly monogamous, living together faithfully until one of the partners dies. If you look at their near relatives, however, you'll find all sorts of lascivious goings-on, so it's safe to assume that these virtuous rodents are descended from promiscuous ancestors, ancestors who squeaked their bawdy way from one bed to the next.

If you've been reading my columns, you'll know that a population can only evolve from promiscuity to monogamy if incorruptible couples consistently have more surviving children than libertines do. If this happens, and if monogamy has a genetic basis, then genes associated with monogamy will spread. Eventually, everyone in the population will have these genes. (Note, however, that the genes influencing fidelity need not be the same in males and females.) So it's possible – indeed, I'd say probable – that your mouse dude has a powerful genetic predisposition toward monogamy.

With respect to California mice, I can't say much more than that. In the case of your rival for the title of Ultravirtuous Rodent, the prairie vole, though, scientists

are starting to figure out the genetic basis of monogamy. So let's take a brief look at what's been discovered about how it works in males.

Mushy affection

When a boy prairie vole meets a girl prairie vole and they decide to become an item, they consummate their relationship by copulating anywhere from 15 to 30 times in twenty-four hours. From this point on, the lovers grow greatly attached, endlessly cuddling and grooming each other, the picture of mushy affection. And that's not all. Before losing his virginity, a male is a peaceful sort of chap, not prone to picking fights; but after his first night of passion his personality changes. Now if he sees any prairie vole – male or female – that is not his partner, he'll attack vigorously. But what accounts for his transformation?

Sex. For a male prairie vole, the sex act causes the release of vasopressin, a hormone that binds to special receptors (the vasopressin V1a receptors) in the brain and alters his behaviour. We know that vasopressin is responsible because, if you inject a mating male with a chemical that blocks vasopressin from binding to the receptors, he will behave as though he has not had sex. Conversely, if you inject vasopressin into a virgin male, he will behave as though he has.

Strong stuff. But before any girls out there start dosing their boyfriends with vasopressin, I should state that this trick won't work on everyone. For although vasopressin is found in all mammals, it has different effects in different species. As proof of this, consider the montane vole, a close relative of the prairie vole. Montane voles mate promiscuously, they do not form stable couples, lovers rarely

sit companionably together or groom each other, and sex induces neither affection nor aggression. Inject a male montane vole with vasopressin and he won't pick fights – he'll groom himself instead.

These different responses to vasopressin appear to be due to the way vasopressin V1a receptors are distributed through the brain – a distribution that differs considerably between the two species. Intriguingly, it's quite straightforward to create the prairie vole's distribution. All you need is a mouse embryo and the gene that contains the instructions for building the prairie vole version of the receptor. Combine the two – which gives you a mouse carrying the prairie vole gene – and you'll get an adult mouse with vasopressin V1a receptors distributed in the prairie vole pattern. Give this mouse a shot of vasopressin and it will start to behave like a prairie vole in love.

Mechanism of monogamy

These results give us a glimpse of the underlying mechanism of monogamy; the full story will probably turn out to be much more complicated. Moreover, since monogamy has evolved independently in different species, the mechanisms may well differ from one monogamous species to the next. All the same, if sex also turns out to have potent hormonal effects in other monogamous species, this would explain why many of them – from the Indian crested porcupine to the wood roach *Cryptocercus punctulatus* – regularly engage in sex that, owing to its timing, cannot possibly result in reproduction. (It's particularly amazing that porcupines have far more sex than necessary for reproducing – porcupine sex is potentially pretty prickly.) Irrespective of such matters, however, it is important to remember that understanding the genetic mechanisms of monogamy is quite separate from understanding why organisms have evolved to be monogamous in the first place.

What, if anything, does all this mean for humans? For now, nothing is known about the genetics of human monogamy, but I'd like to indulge in some speculation.

Taken as a species, humans cannot be described as exclusively monogamous. Divorce rates and extramarital affairs attest to that. Also, non-identical twins occasionally have different fathers (although how often this happens is unknown since it's not usually detected unless the fathers come from different ethnic groups). But humans are not wildly promiscuous, either. Some individuals are faithful to one partner for their whole lives; few have or admit to having thousands of sex partners. Moreover, a couple of indices put humans as a whole on the monogamous end of the scale.

First, consider physical differences between males and females. In monogamous species, males and females tend to be roughly the same size; in species where a few big males hold harems, males tend to be enormously bigger than females. Remember the southern elephant seal, where adult males are typically twice the length of adult females – and may be as much as 10 times heavier? In the gorilla, adult males are typically twice the weight of adult females. In contrast, human males tend to be only slightly bigger than females, and there is considerable overlap, with some women bigger than some men.

Size matters

Next, consider physical differences between human males and other male apes. As you know, testicle size is usually associated with the risk of sperm competition. Males who are at low risk of sperm competition – either because they are good at defending a harem or because they are paired with a faithful female – generally have testicles that are small in relation to their body size. Males that are at high risk of sperm competition – either because they pursue a strategy of seducing the partners of other males or

because most females mate promiscuously – generally have enormous testicles in relation to their body size. Male gorillas are at low risk of sperm competition and have tiny testicles. Male chimpanzees are at high risk of sperm competition and have gigantic testicles. In comparison, human males have medium-sized testicles, suggesting a low to moderate risk of sperm competition. This fact, plus the relatively small size difference between men and women, is exactly what would be predicted for a mostly monogamous species.

To put it another way, social mores aside, do some people have a much easier time complying with their wedding vows than others? It is tempting to imagine that once we know more about the genetics of human behaviour, we will find not only that different men have different proclivities for monogamy, but that a given proclivity goes along with a set of other traits – as, you may recall, it does in the California singing fish and among dung beetles. Perhaps it will turn out, for example, that men with large testicles (anticipating a high risk of sperm competition) are prone to seducing other men's wives and have difficulty forming lasting bonds, whereas men with small testicles (anticipating a low risk of sperm competition) are prone to sexual fidelity and jealousy and turn all lovey-dovey after sex.

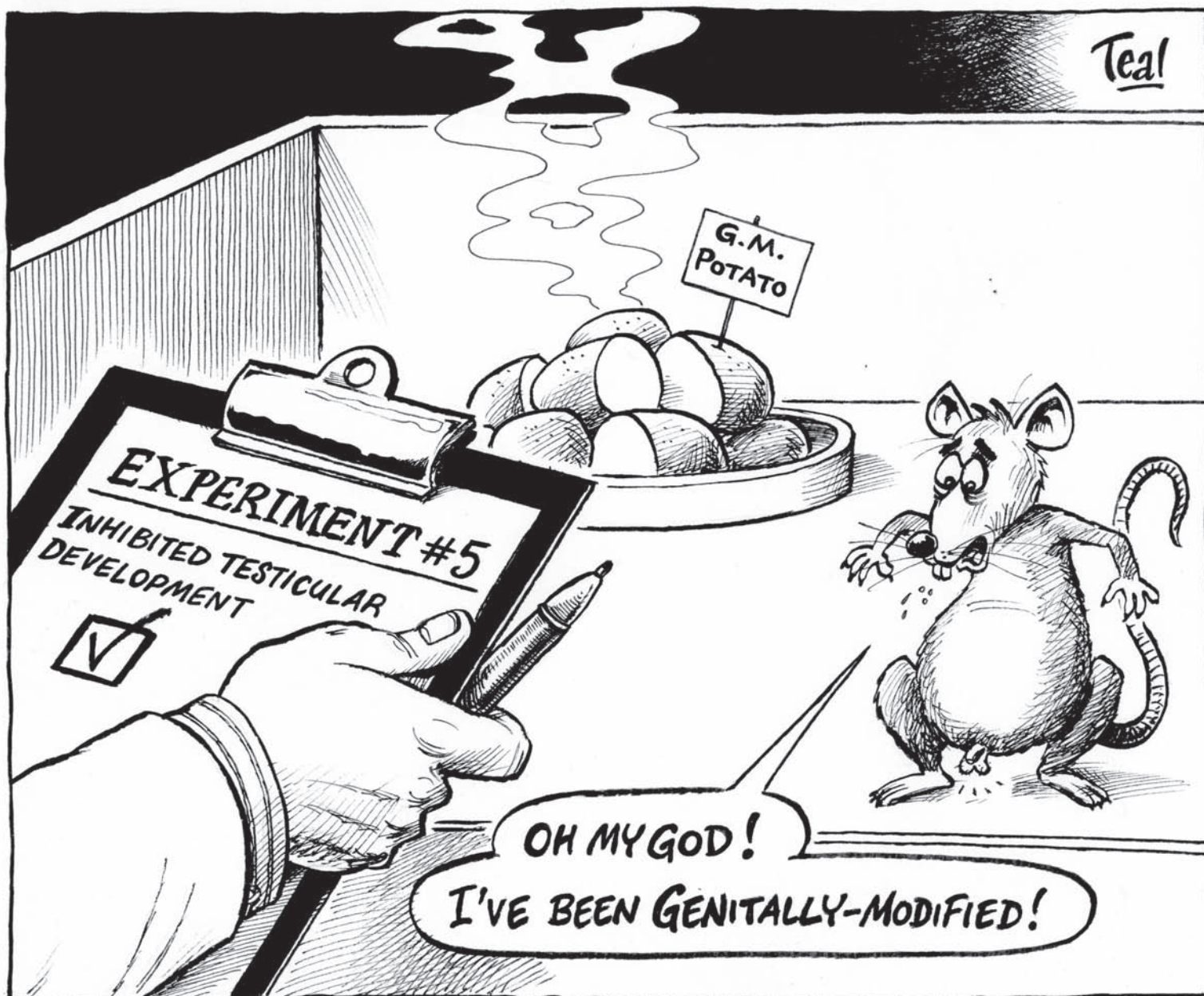
But for now, this is all conjecture.

For most boys and girls, wedding rings are made of fool's gold – real, true love is precious and rare, the confluence of bizarre biological forces. Several factors may contribute to monogamy, but you'll find that true love works best when it is absolutely mad.

Perhaps it will turn out that men with small testicles are prone to sexual fidelity and turn all lovey-dovey after sex



Readers of *The Ecologist* can buy Olivia Judson's book (left) for the special price of £6.99 plus free p&p. To order, call **01206 255800** and quote the reference 'Ecologist'



KEPT IN THE DARK

The days of Apartheid are over, but once again South Africa is the victim of a dangerous experiment. **Jeffery Smith** raises the alarm over the government's legalisation of genetically modified maize.

challenge Jeffrey Smith to name one danger presented to consumers from biotech crops...'

This gauntlet was tossed my way by biotech PR man Alex Avery in a letter to a South African newspaper. He and others are trying to counter the alarmed reaction that my tour here is having on the population. Many South Africans

are realising for the first time that they are eating genetically modified (GM) foods. Moreover, since many eat maize in every meal, and since the government astonishingly approved the genetic modification of that staple, South Africans may face a higher risk than those in any other country. 'What type of risk?' asks Alex. Here are a few.

In a study in the early 1990s, rats were fed GM tomatoes. Well actually, the rats refused to eat them. They were force-fed. Several developed stomach lesions and seven out of 40 died within two weeks. Scientists at the US Food and Drug Administration (FDA) who reviewed the study agreed that it did not provide a 'demonstration of reasonable

certainty of no harm'. In fact, agency scientists warned that GM foods in general might create unpredicted allergies, toxins, antibiotic resistant diseases, and nutritional problems.

Internal FDA memos made public from a lawsuit reveal that the scientists urged their superiors to require long-term safety testing to catch these hard-to-detect side effects. But the person in charge of FDA policy was a former attorney for Monsanto (and later its vice president). The FDA policy thus ignored and even denied the scientists' warnings. The agency does not require safety studies. Instead, if the makers of the GM foods claim that they are safe, the FDA has no further questions. The GM tomato was approved in 1994.

In a UK government-funded study, rats fed a GM potato developed potentially pre-cancerous cell growth, damaged immune systems, partial atrophy of the liver, and inhibited development of their brains, livers and testicles. When the lead scientist Arpad Pusztai went public with his concerns, he was a hero at the prestigious Rowett Institute for two days. Then, two phone calls were allegedly placed from the Prime Minister's office, forwarded through the receptionist, to the director.

The next morning, Dr Pusztai was fired from his job after 35 years and silenced with threats of a lawsuit. His research, which was later published in *The Lancet*, revealed that the cause of the damage appeared to be from the process of engineering the potato, and not the specific trait that the GM potato expressed.

The GM crops on the market, including the GM maize being grown in South Africa, were created from the same process. The safety assessments made on those crops, however, are so superficial that they would have missed the type of damage that Pusztai found in his rats. In fact, if Pusztai's potatoes had only been subjected to standard industry studies, the potato would almost certainly be on the market too. Thankfully it isn't.

Hiding the horrors

Astonishingly there are only a handful of published animal safety studies into GM food. And despite the fact that much of

the industry-sponsored research appears to be rigged to avoid finding problems, the evidence of harm is mounting. Rats fed GM corn had problems with blood cell, kidney and liver formation. Mice fed GM soy had problems with liver cell formation and pancreatic function, and the livers of rats fed with GM canola were heavier. Pigs fed GM corn on about 25 farms in North America became sterile, had false pregnancies or gave birth to bags of water. Cows fed GM corn in Germany died mysteriously. And twice the number of chickens died when fed GM corn compared to those fed with natural corn.

According to a report in the *Daily Express*, soon after GM soy was introduced to the UK, soy allergies skyrocketed by 50 per cent. Without follow-up tests, we can't be sure if genetic engineering was the cause, but there are plenty of ways in which genetic manipulation can boost allergies.

■ A gene from a brazil nut inserted into soybeans made the soy allergenic to those who normally react to brazil nuts.

■ GM soy currently consumed in the US contains a gene from bacteria. The inserted gene creates a protein that was never before part of the human food supply and might be allergenic. We simply don't know, and what's more remarkable is this 'new' protein has never been tested for its effect in humans.

■ Sections of that protein are identical to those found in shrimp and dust mite allergens. According to criteria recommended by the World Health Organisation (WHO), this fact should have disqualified GM soy from approval.

■ The sequence of the gene that was inserted into soy has inexplicably rearranged over time. The protein it creates is likely to be different than the one intended and was never subject to any safety studies. It may be allergenic or toxic.

■ The process of inserting the foreign gene damaged a section of the soy's own

DNA, scrambling its genetic code. This mutation might interfere with DNA expression or create a new, potentially dangerous protein.

■ GM soy contains significantly more trypsin inhibitor, a common allergen in soy. (Monsanto's own research showed a 27 per cent increase. But data that they had omitted from the study, and later recovered, showed that the increase was as high as seven-fold in cooked soy.)

Staying in the gut

The only human feeding study ever conducted showed that the gene inserted into soybeans spontaneously transferred out of food and into the DNA of gut bacteria. This has several serious implications. First, it means that even if

we give up eating GM soy, the bacteria inside our intestines may continue to create its novel protein inside of us. If it is allergenic or toxic, it may affect us for the long term.

The same study verified that the promoter, which scientists attach to the inserted gene to permanently switch it on, also transferred to gut bacteria. Research on this promoter suggests that it might unintentionally switch on other genes in

the DNA – permanently. This could create an overproduction of allergens, toxins, carcinogens, or antinutrients. Scientists also theorise that the promoter might switch on dormant viruses embedded in the DNA or generate mutations.

Most GM crops are also inserted with antibiotic-resistant genes. The American Medical Association, WHO, and organisations worldwide have expressed concern that these might transfer to pathogenic bacteria inside our gut. They are afraid that it might create new, antibiotic-resistant super-diseases. The defence that the biotech industry used to counter these fears was that the DNA was fully destroyed during digestion and therefore no such transfer of genes was possible. The human feeding study

Mice fed GM soy suffered from liver problems. Pigs fed GM corn became sterile, had false pregnancies or gave birth to bags of water. Cattle fed GM died



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remember sarowiwa

10 November: the 10th anniversary of Ken Saro-Wiwa's execution.
Three events Ecologist readers cannot miss:

8 November
7pm Panel Discussion: The Future of the Niger Delta
Amnesty International Human Rights Action Centre,
17-25 New Inn Yard, London EC2.
Speakers include Ken Wiwa, Patrick Smith (Africa Confidential), James Marriott (co-author, *The Next Gulf*) and John Robertson MP (Chair of the All Party Parliamentary Group for the Niger Delta).

10 November
11am -12 Noon: Commemoration Ceremony
Including announcement of the winning design of the Living Memorial in Bernie Spain Gardens, South Bank, London SE1
7:30pm: Dance the Guns to Silence
An evening of poetry and African dance music to celebrate Ken's life and struggle. Brixton Jamm, Brixton Rd. London SW9
Tickets on the door only.

The Remember Saro-Wiwa Season begins 21 October.
For other events and further details see
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described above, published in February 2004, found that significant amounts of GM soy DNA survived passage through the stomach and small intestine, overturning this baseless assumption.

This is only a partial list of what may go wrong with soya, a single GM food crop. The list for others may be longer. Take, for example, the corn inserted with a gene that creates its own pesticide. We eat that pesticide, called *Bt* toxin, and plenty of evidence suggests that it is not as benign as the biotech proponents would have us believe.

Preliminary evidence, for example, shows that Philippinos living next to a *Bt* cornfield developed skin, intestinal, and respiratory reactions and fever while the corn was pollinating. This occurred the following year, again during the time the corn was pollinating. Tests of their blood also showed an immune response to the *Bt*. Mice fed *Bt* developed an immune response equal to that of cholera toxin, as well as abnormal and excessive cell growth in their small intestine. Consider what might happen if the *Bt* gene were to transfer from corn into our gut bacteria. It could theoretically transform our intestinal flora into living pesticide factories.

The risks from *Bt* in corn is much higher in South Africa where corn can

comprise the majority of the diet. By contrast, US consumers only eat about three to five per cent of their caloric intake as corn. That doesn't stop biotech advocates from trying to quell South African's fears by saying that millions of Americans have eaten GM for years and no one has been hurt. But is that true?

Lack of monitoring

No one monitors human health impacts of GM foods. If the foods *are* creating health problems in the US population, it might take years or decades before we have identified the cause.

One epidemic in the 1980s provides a chilling example. A new disease was caused by a brand of the food supplement L-tryptophan, which had been created through genetic modification and contained tiny traces of contaminants. The disease killed about 100 Americans and caused sickness or disability in about 5,000-10,000 others. The only reason that doctors were able to identify that an epidemic was occurring was because the disease had three simultaneous characteristics: it was rare, acute, and fast acting. Even then it went unnoticed from 1984-1989 and was nearly missed entirely.

Studies show that the more people learn about GM foods, the less they trust them. In Europe, Japan, and other regions the press has been far more open about the potential dangers of genetic manipulation. Consequently, consumers there demand that their food supply be GM-free and that manufacturers comply. But in the US and South Africa, most people believe they have never eaten a GM food in their lives (even though they consume them daily). Uninformed consumers have been the key asset for the biotech industry.

This leaves the biotech industry quite vulnerable. At any time, a celebrity, religious leader, or popular politician could spill the beans to the population about GM food risks and a European-style revolt may ensue. Thus, people like

Alex Avery are part of a rapid response team, doing damage control on consumer education campaigns. But I'm seeing that

when South Africans realise they are eating GM corn, even before they learn about *Bt*, organ damage in rats, or hijacked regulatory agencies, they have an intuitive understanding of the risks and decide that they don't want to be part of this dangerous experiment.

I suspect, and hope that the current version of GM crops, which are prone to unpredicted side effects for health and the environment, will be withdrawn from the

African continent soon.

■ Jeffrey M. Smith is the author of *Seeds of Deception: Exposing Industry and Government Lies about the Safety of the Genetically Engineered Foods You're Eating*, the producer of *Hidden Dangers in Kids' Meals*, and the Director of the Institute for Responsible Technology.

A GM food supplement caused a disease which killed nearly 100 Americans and caused sickness or disability in 5,000 to 10,000 others

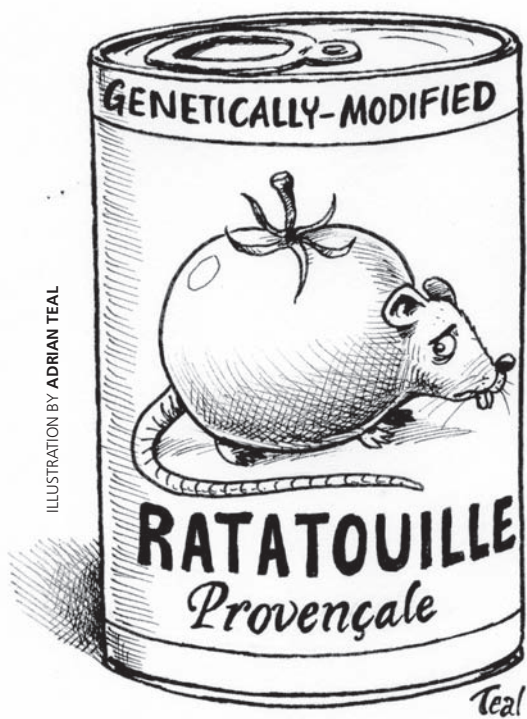


ILLUSTRATION BY ADRIAN TEAL

MANY HAPPY RETURNS

If you go to down to Barnes today you're in for a big surprise. The sterile concrete of a former reservoir has been turned into a world renowned haven for birds and wildlife.

Bridget Nicholls wishes a happy fifth birthday to the London Wetland Centre.

It was the *Faust*-scribing polymath Johann Wolfgang von Goethe who said, 'There are two things children should get from their parents – roots and wings'. My parents took this literally. I first joined the Wildfowl & Wetlands Trust (WWT) at the tender age of seven. I was one of the young volunteers who turned up each weekend at the Arundel centre to plant trees, clean hides, take bird counts, crawl on my belly in mud looking for elephant hawk moths and generally have a wild life.

The kind of kids who were into nature was always a constant surprise. One of the group, who was arguably the best birder around, was a troublesome boy from my school. He eventually got expelled for arson but still religiously turned up to WWT for his nature sessions, often running a 'book' on who would see the most birds in a day (invariably himself). He also eagerly attended the most memorable event of my young life – being beamed up to the mother ship in Slimbridge and asked to tea with Sir Peter Scott and his wife Phillipa. The Scotts showed us Swan Lake, not the ballet, but the lake at WWT Slimbridge where they knew what seemed like hundreds of Bewick swans by name – their beaks being thumbprints to their identity. That was also the year I won the booby prize for the birder quiz. It was a signed copy of Peter Scott's three volume *Travel Diaries of a Naturalist*, and 'Every Loser Wins' – that great Nick Berry/ *Eastenders* tune – sang out to me back in the 1980s as I was receiving my prize.

Home from home

So, as a rite of passage when I moved to London, I volunteered at the newly opened London Wetland Centre (LWC).

When Thames Water, London's main public water supplier, built a ring main around the capital it did away with the need for reservoirs like those at Barn

Elms in south west London. And so The London Wetland Centre was born – out of the quartered, concrete-lined, disused reservoirs that had supplied Londoners with drinking water since the 1890s.

Luckily, the Barn Elms reservoirs were protected by law as a Site of Special Scientific Interest (SSSI) on account of the diving ducks they attracted; and luckily Sir Peter Scott had big ideas for them.

Sir Peter Scott, son of Scott of the Antarctic was, like Goethe, a bit of a polymath. He was a painter, Olympic athlete, writer, war hero and conservationist, who founded The Wildfowl Trust (later the Wildfowl and Wetland Trust) on the banks of the River Severn at Slimbridge, Gloucestershire in 1946. He also founded the World Wildlife Fund (WWF).

Sir Peter had a very clear vision for the WWT – 'to save wetlands for wildlife and people'. By the late 1980s he had created eight wetland centres around the UK from flooded fens to extensive estuaries. These centres encouraged people to travel and experience wildlife first hand and in doing so created a well-loved UK environmental charity.

Bringing wildlife to the city

But Peter had different ideas for the 43 hectare (105 acre) concrete lined reservoirs in Barnes. He wanted to create an environment that would attract wildlife to the city and its dwellers. In the capital, a wetland centre would be a postcard of sustainability to the rest of the world, a Pied Piper for a new type of conservation experience with power to influence politically and socially... and it would cost £16 million to realise.

To create such a rich 'wetlands playground' of grazing marshes, reedbeds, ponds, pools and open water out of reservoirs – WWT entered into partnership with Thames Water. Due to an old enabling Act of Parliament,

20 acres of an adjacent brownfield site were sold to the third member of the triumvirate, property developers Berkley Homes. They then built luxury housing along the Barnes banks, for which the WWT received £11 million and a further £5 million was raised by the three parties. The development of the London Wetland Centre could begin.

The concrete lining was broken up and recycled as a car park, paths and reefs for breeding fish. Having then exposed the underlying clay, 30 different wetland habitats were designed with different species in mind – shingle islands for little-ringed plover and wet grassland for the likes of snipe and redshank. Sluice gates were also put into play so that the water levels could be raised or lowered seasonally for the winter fowl that dabble in the marshes and scrapes. Because of a 'no soil or spoil' restriction, 500,000 cubic metres of six different soil types had to be sorted and re-mixed. At one point, after three spoil heap moves, an unexploded World War 2 bomb was unearthed. In total it took 10 years before the London gates were finally opened.

Mission accomplished

So, did all this hard work, money and planning achieve what it set out to do? Did it give back the original city wetlands for wildlife and people?

Malcolm Whitehead, head of learning at WWT, says yes, it has done what it said it would on its recycled label and one only has to wander around the London Wetland Centre to see how much it has accomplished. 'Bird species have increased from 110 in 1996 to 182 in 2004. This includes the nearest wintering bitterns and breeding lapwings to central London for decades – possibly a century or more,' says Whitehead.

'Little-ringed plover and redshank breed alongside the lapwing, while numerous passerines make use of the

reed and scrub habitats. In 2004 more than 120 breeding pairs of reed warbler (compared to five pairs in 1997), 17 pairs of sedge warbler, 16 pairs of reed bunting, nine pairs of blackcap and five pairs of whitethroat were recorded – not to mention the blackbirds, robins, starlings, pied wagtails and tits.

'Dragon- and damselfly species have similarly increased from 12 (seven breeding) in 1996, to 17 (14 breeding) in 2004.

'There are about 400 species of butterflies and moths, frogs and fish galore and seven bat species (the most recent addition being Leisler's bat), making the centre among the top five per cent of London bat sites. The threatened water vole – 'Ratty' of *Wind in the Willows* – has been introduced, as have slowworms, and both are thriving.'

In 2001 the LWC won the Tourism for Tomorrow Global Award for sustainable eco-tourism, and more and more visitors enjoy the experience each year. This year 170,000 visitors are expected and, of these, students of Greater London state schools visit free as part of a sponsorship from the Mayor of London.

According to Ramsar (the organisation set up in Iran in 1979 to protect the World Wetlands, and of which the WWT is a founder member), wetlands play a vital role in the water cycle, from purifying water, capturing and holding rainfall and snow melt, to retaining sediment. Yet, in the 20th Century we destroyed 50 per cent of the world's remaining wetlands. We have physically modified others with dams and canals, which has significantly fragmented and

altered water flow in 60 per cent of the world's largest rivers, often compromising the many valuable ecosystems on which we depend.

Education on a global scale

The London Wetland Centre was the first of its kind and has amazing potential to teach the world how to construct wetlands in an urban environment.

As Miguel de Cervantes said, 'Truth may be stretched, but cannot be broken, and always gets above falsehood, as does oil above water.' The quest for oil is far and above the quest to sustain clean water. However, if my dream was realised, those roles would be reversed and the London Wetland Centre, with its truthful prototype, will start making even more headway on the world's stage – having already directly influenced new wetland centre developments in America, Hong Kong, South Korea and Australia, to name a few.

Back in the days of the Egyptians, who were a knowing bunch, a walk in nature was prescribed as a cure for the mad. It therefore probably comes as no surprise that, as a city dweller, I have often been found wandering among the wildlife at the London Wetland Centre enjoying this over-the-counter remedy. After five years of repeat prescriptions, I can safely say that this treatment has cured me of numerous maladies and permanently tempered my moribund ways. From taking bat walks to meeting perspective young birders to observing grass snake monitoring, there's always so much more going on in the bushes and among the reedbeds than you could imagine.

This unique urban oasis also gives city parents an opportunity to give their city children those vital 'roots and wings'. It is on the London Wetland Centre's fifth birthday year that I pay tribute to its achievements and the tireless efforts of its staff and some 150 strong volunteers. I look forward to the next five years and seeing it grow as an organisation on the world's stage – a micro drop-in centre for the world's wetlands.

■ Bridget Nicholls is a broadcaster, writer and naturalist who currently has a weekly radio show on ResonanceFM.

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DUCK POND TURNS NEWSWORTHY

A simple visit to feed the ducks hits the headlines and highlights the way in which humans both love nature and are also doing their best to destroy it BY MALCOLM TAIT

It was a clear, bright October afternoon when Stacey Clayton took her small daughter Alanna to the local pond in the tiny Cornish village of St Blazey. They were armed with little more than a handful or three of bread and a few minutes they'd set aside for a pleasant time feeding the ducks. It's certainly not the type of event that would be newsworthy enough to make the local paper, let alone the national press.

But then the Claytons had a trip to the duckpond with a difference. For a little while they watched a two-foot log floating around behind the assorted mallards and tufties that scabbled for their offerings of bread. Then the log opened its eyes. Mrs Clayton threw a stone at it, and in a most unloglike manner, it scurried off into the undergrowth. One phone call later, and the RSPCA were down at St Andrew's pond hunting for a young alligator, crocodile, or perhaps a caiman, presumably escaped from someone's exotic wildlife collection and unlikely to survive the rigours of a British winter. The trip to the duckpond had got into the papers after all.

This is one of the three main ways that wildlife makes the press. It falls into Category A: the bizarre and the unexpected. The croc in the Cornish pond story broke hard on the heels of news of a chimp in a Chinese zoo that had given up smoking, a New Zealand dog with voting rights, and a rare American thrush turning up in Shetland and immediately being killed by a cat.

Then there's Category B, otherwise known as We're Doomed. These are conservation stories: Spanish fishing procedures are decimating the shark population of the north Atlantic; a wildlife trust is bidding to raise money

to buy a Welsh island and turn it into a nature reserve; Wiltshire honey bees are spiralling into a sharp decline from the effects of a parasitic mite. In the last couple of years, climate change stories have come to dominate this type of reportage.

The final category is subtitled Well Golly Gosh, Isn't Nature Just Great. Of the many scientific discoveries being made all round the world all the time, once in a while a few catch the attention of a news editor: the gorilla that uses a stick to test the depth of a stream; the spider that plays possum to avoid being eaten by his mate; the insects that can cross patches of water without moving.

Now, to be fair, this sort of thing is what we expect from the press. Dog bites man isn't a story, man bites dog is. But if you were an alien coming to this planet in an attempt to understand the creatures upon it and had nothing but the daily press to help you through, you'd get the impression that life on earth is in a constant flux of behavioural change and permanently on the brink of extinction.

You'd be right. You'd take back the information you'd pulled together, and you'd be able to give an account of how nature handled her days. Depending on your level of other-worldly intelligence, you might be able to work out that the struggle for survival has been the driving force of life on this planet for about three billion years, environmental forces being the phlogiston behind the flames of evolutionary change. You might report back to your superiors – perhaps with a wry smile on your mouths and a twinkle in your purple eye – that the latest environmental force, mankind, which is throwing up a whole host of brand new challenges for nature to deal with, is at least showing the decency to report what

it's doing. Everyone would tell you that you were a jolly good fellow, slap you on your exoskeleton, and file the planet Earth away as being yet another example of permanent natural strife and change.

But you'd have missed one thing. The visit by Stacey Clayton and her daughter when they found the living log in the duck pond wasn't their first. They'd spent other afternoons there, simply feeding the ducks without incident. As have other people at other duck ponds for centuries. And none of them have ever made the newspapers. There is no battle for survival here, no newsworthy event of evolutionary or behavioural change, just the sweetness and innocence of the parochial, the harmless charm of the everyday, mirrored by people around the world as they remove themselves from the mundane and spend a little time with the wildlife on their doorstep.

That's the human dichotomy, to destroy the planet we live on, and to love it at the same time. And then to write about it. And to all those aliens out there trying to understand life on earth, that's your real story, right there.

■ Malcolm Tait's new book, *The Countryside Companion*, is published by Robson Books

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STOLEN CHILDHOODS

Each day children wake up around the world and get ready for school... and for the fields, mines, kitchens and factories of the world. The United Nations Children's Fund (UNICEF) estimates 246 million children are at work worldwide. Of this number, three-quarters work in hazardous conditions such as underground, with chemicals and pesticides, or with dangerous machinery.

PHOTOGRAPHS BY FERNANDO MOLERES/PANOS PICTURES
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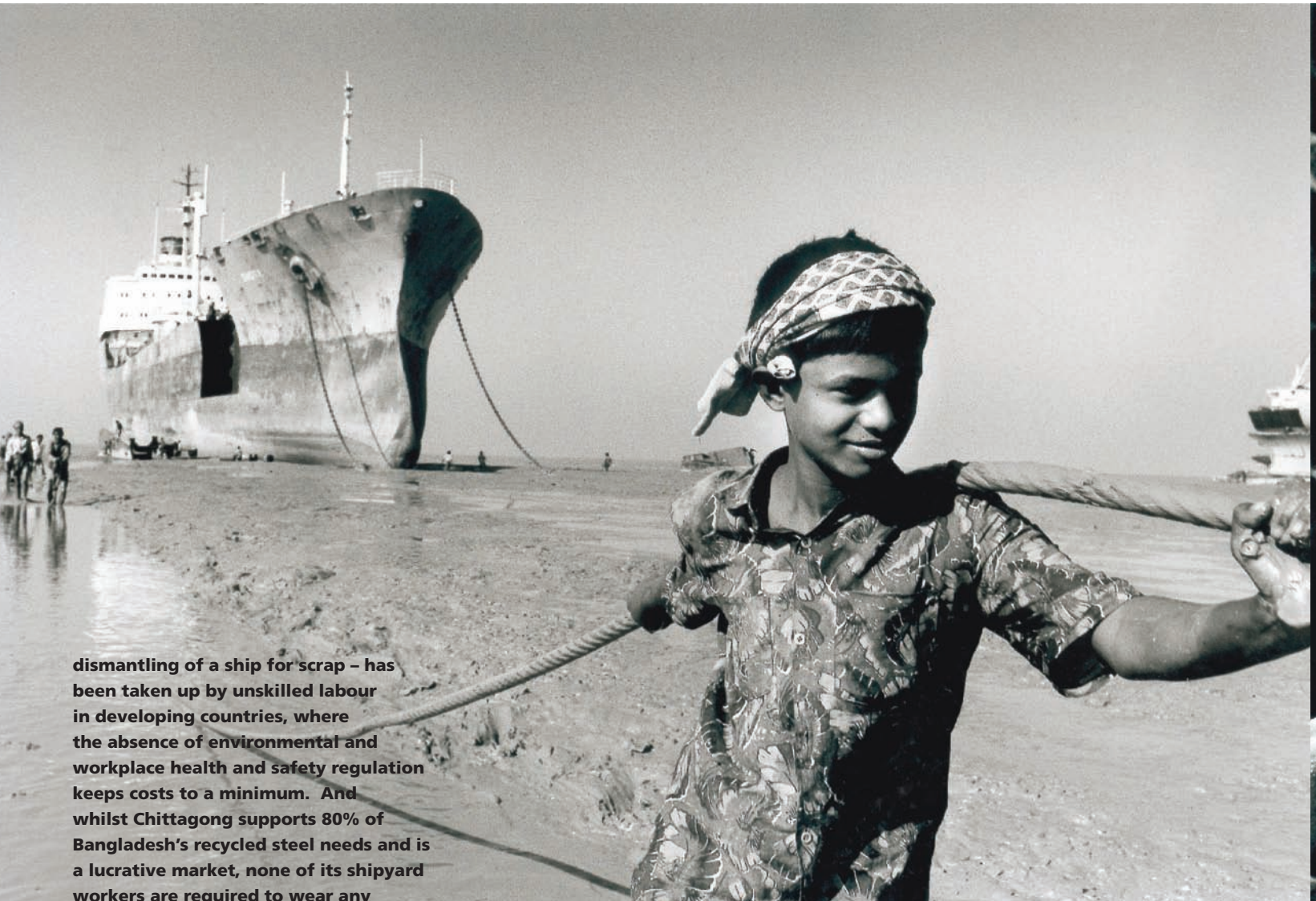
EL SALVADOR

On a darkening street in the capital, San Salvador, Enrique stands beneath a neon sign flashing 'Happy World, breathing fire for passing drivers. Unlike other children in El Salvador, Enrique is lucky enough not to be working bonded labour, as he is part of a gang of children who work and live together to support each other in the place of a family.

CHILD LABOUR

BANGLADESH

A young boy working for a 'cable gang' in the Bangladeshi port town of Chittagong. The 20 km stretch of coast is the site of one of the world's largest ship breaking industries. Once the domain of professionals in industrialized countries, ship breaking – the



dismantling of a ship for scrap – has been taken up by unskilled labour in developing countries, where the absence of environmental and workplace health and safety regulation keeps costs to a minimum. And whilst Chittagong supports 80% of Bangladesh's recycled steel needs and is a lucrative market, none of its shipyard workers are required to wear any protective goggles, boots, or clothing. The coastline is contaminated with asbestos, high concentrations of oil are found in the water and sediment, and high levels of heavy chemicals are contained in soil samples taken from its beaches, such as PCB (banned from manufacture in Europe since 1982) and tributyl tin (TBT) (one the most toxic compounds in the aquatic environment according to the Basel Convention).

**SOUTH AFRICA**

He looks like he has just come up from a mine. In fact he toils long days in the sweltering heat of a sugar cane plantation in Natal, South Africa. According to the International Labour Organisation, the hazards for children working with little or no food, water or protective clothing in commercial sugar cane farming include: chronic back problems, immense fatigue and exposure to toxic insecticides and fertilisers, often sprayed from above by planes while the children and other workers are still working in the fields. A survey of sugar plantations in eastern Tanzania in the 1990s revealed that 40 per cent of primary-school-age children were working in the plantations part-time so as to afford school uniforms.

INDIA

A girl employed in a workshop recycling industrial oil cans in Ahmedabad, India.

India has the largest number of working children in the world, with credible estimates ranging from 60 —15 million.

Although Article 21A of the Indian Constitution guarantees compulsory schooling for every child up to the age of 14 years, 82 million children are not at school.





TANZANIA

Low tide on the island of Zanzibar, Tanzania. A boy grabs hold of an octopus, and flings its tentacles against the ground, making the meat softer to eat. In June 2005, a report released by the UNICEF found that one in ten children born on the islands of Zanzibar and Pemba will die before they reach the age of five years due to malnutrition, malaria, and other poverty related illnesses.

In the book *The Race to the Bottom*, author Alan Tonelson describes the process of discussing the 1999 World Trade Organization protests in Seattle:

Internationally, WTO boosters faced an equally knotty dilemma. Most of the organization's third world members—or at least their governments—opposed including any labor rights and environmental protections in trade agreements. They viewed low wages and lax pollution control laws as major assets they could offer to international investors—prime lures for job-creating factories and the capital they so desperately needed for other development-related purposes. Indeed, they observed, most rich countries ignored the environment and limited workers' power (to put it kindly) early in their economic histories. Why should today's developing countries be held to higher standards?'



Why, when 135 nations have signed International Labour Organization Convention 138, setting minimum age standards for employment and 150 nations have signed Convention 182, banning the worst forms of child labour, are some 246 million children still at work each day? Why are we so clearly failing to address this pressing and painful reality?



Seven years in the making, *Stolen Childhoods* is the first feature documentary ever made on child labour, described as 'a reminder to the world of costs of today's global economy on children and one of the most vile yet silent forms of human rights violations that is taking place every day in the world.'

In extraordinary footage of their working conditions, child slaves and bonded child labourers from eight countries tell their own stories: children forced to pick pesticide-laden tobacco, coffee and vegetables, kids chained to looms, boys kidnapped to work on fishing platforms at sea, girls trafficked for prostitution, children scavenging at dumps and enslaved at rock quarries and brick kilns. A sobering and powerful indictment of the global economy.

SPECIAL OFFER

Readers of *The Ecologist* can buy the DVD at the special reduced price of \$25 (+ p&p; normal price \$45). Simply visit the website www.stolenchildhoods.org, enter 'The Ecologist' in the comments section of the online order form and the sales price will be adjusted to \$25 plus shipping. The cost to organizations and universities remains unchanged.

BEHIND THE LABEL

BLISTEX LIP SALVE

Warning! Kissable lips may endanger your health. BY PAT THOMAS

INGREDIENTS

Hydrogenated polyisobutene, hydrogenated coconut oil, triundecanoin, ethylhexyl methoxycinnamate, bis-diglyceryl polyacyladipate-2, hydroxystearic acid, trimethylpropane tricaprilate/tricaprate, aroma, benzophenone-3, dimethicone, homosalate, tocopheryl acetate, propylparaben, cholesteryl behenyl/octyldodecyl lauroyl glutamate, saccharin, tetrahexyldecyl ascorbate, limonene

In addition to cosmetics, future editions of Behind the Label will be looking at ingredients in food and others types of household goods. We welcome all suggestions from readers for products that need peering into. Write to or email pat@theecologist.org.

Lip balm is a year-round product. For every season there is a reason – winter cold, autumn dryness, spring and summer sun – to smear it on several times a day. Chances are you know someone with a lip balm habit. In fact, more than half of us regularly buy lip balms and on average we each own three to four tubes at any given time.

This is because lip balms are near perfect impulse buys, generally displayed near a cash register – even in health food shops. Our impulsive grab for them arises from the fact that many of us like to keep a tube handy in various locations like handbags, office desks, cars, bedside tables and coat pockets, for whenever lip dryness strikes.

For nearly 60 years Blistex Inc has been producing popular lip care products. The Blistex brand is among the UK's best selling lip balms and even in the US, where competition is fierce, it ranks third (after GlaxoSmithKline's Abreva and Wyeth's Chapstick) and managed to rake in more than \$12 million in sales last year.

The newest addition to the Blistex range is Spa Effects, a twin pack of aromatherapy lip balms with added sunscreen, which come in 'relaxing' vanilla and plum and 'renewing' cucumber and melon scents.

The first thing you notice, however, is that there are no natural scents listed in the ingredients. The pack claims the addition of 'essential oils' – but apart from limonene, which can be either natural or synthetic, there are no aromatic oils to be found.

More worrying is the shocking number of chemicals, six in all, for which there is no relevant safety data whatsoever. The label calls them 'effective moisturisers'; in the trade they are known as 'oleochemicals'.

The starting materials for oleochemicals are vegetable and animal oils and fats. These are then hydrogenated or partially hydrogenated, an energy intensive and polluting process that includes heating the oil to a high degree and reacting it with hydrogen gas in the presence of a metal catalyst such as nickel, copper chromate, palladium or platinum. The purpose of this process is, ironically, to make these natural oils feel and perform more like petrochemically derived mineral oils.

Cosmetic oleochemicals are subject to a tremendous amount of greenwashing that usually includes phrases like 'naturally derived' and 'made from renewable sources'. But there is nothing natural about these chemicals. They come straight from the biofuels industry and are as poor a solution to petroleum-derived cosmetic ingredients as plant-derived fuel is to out-of-control petrol consumption.

Oleochemicals can be found in both conventional and 'natural' cosmetics. They can also be found in lubricants, leather, paints and coatings, printing inks, rubber, plastics, and in metal-working and many other industries.

Hydrogenation turns an otherwise healthy fat into a toxin. Eating trans fats is associated with the development of heart disease, cancer and diabetes. So what are they doing in a product that initially goes on the lips but inevitably ends up being swallowed? In fact the instruction to 'smother your lips' and the inclusion of the artificial sweetener saccharin (a potential carcinogen) suggests that Blistex expects you to swallow its product. But beware; none of the oleochemicals in this product have safety data to show whether it is actually safe to do so.



INGREDIENTS	PURPOSE	ADVERSE EFFECTS
Hydrogenated Polyisobutene	Moisturising oil	Mild skin and eye irritation, allergic reactions. A synthetic squalene derived from olive oil. Synthetic squalene was the adjuvant in the anthrax vaccine given to Gulf War soldiers and a suspected contributor to symptoms of Gulf War Syndrome. Unknown if it is safe to swallow, but ingestion of synthetic squalene raises cholesterol levels in animals.
Triundecanoin	Emollient, carrier	Potential eye, skin and respiratory irritant. Unknown if it is safe to swallow.
Ethylhexyl methoxycinnamate, Benzophenone-3 [Oxybenzone], Homosalate	Sunscreens, benzophenone-3 is also a fixative for aromas	Hormone disruption, increases risk of skin cancer, penetration enhancers – alters skin structure allowing other chemicals to reach the bloodstream.
Bis-diglyceryl polyacyladipate-2	Emollient, gloss	The main constituent of nylon. Unknown if it is safe to swallow.
Hydroxystearic acid	Wax (also known as 12-Hydroxystearic acid)	Derived from castor oil. Unknown if it is safe to swallow.
Trimethylpropane tricaprilate/tricaprate	Emollient, film former	Used in manufacturing plastic coatings, inks and adhesives. Unknown if it is safe to swallow.
Aroma	Fragrance	Adverse effects can include asthmatic reactions; skin irritation; central nervous system disruption (eg headache, mood swings, depression, forgetfulness), and hormone disruption.
Dimethicone	Film former	Skin irritation. Keeps other ingredients in the product in contact with the skin for longer.
Propylparaben	Preservative	Skin irritation, hormone disruption.
Cholesteryl/behenyl/octyldodecyl lauroyl glutamate	Emollient, wax	Skin, eye, nose and throat irritation, itchiness and/or erythema, shortness of breath. Relative of monosodium glutamate (MSG), so potential neurotoxin. Unknown if it is safe to swallow.
Saccharin	Sweetener	Carcinogenic – linked to bladder cancer in animals. Banned in the US.
Limonene	Preservative, fragrance	Common contact allergen, respiratory irritant. Produces tumours, reproductive abnormalities and delayed growth in some animals.

NOTE: Space restrictions prohibit full referencing, however Behind the Label draws on data from published studies and reports in medical, scientific and trade journals, government sponsored databases (e.g. the US National Library of Medicine) and relevant Material Safety Data Sheets (MSDS).

ALTERNATIVES

The slippery, gooey feeling produced by lip balms isn't natural; lip skin isn't normally moist all the time. The healthiest approach to lip care is save the salve for times of actual need. For soothing balms made with natural oils, and without sunscreens, try these first:

Burt's Bees Beeswax Lip Balm
www.burtsbees.com

Earthbound Organics Calendula and Cocoa Butter Lip Balm
www.earthbound.co.uk

Essential Care Organic Lip Slik
www.soorganic.com

Solace Skin Defence Lip Salve
www.barefoot-botanicals.com

Badger Balm Lip Balm Stick
www.badgerbalm.com

Living Nature Manuka Honey Lip Balm
www.livingnature.com

Love the Planet Lip Rescue
www.lovetheplanet.co.uk



■ *Pat Thomas is the author of several books on the environment and health, including Under the Weather: how the weather and climate affect our health (Fusion Press), and Cleaning Yourself to Death: how safe is your home? and Living Dangerously: are everyday toxins making you sick? (both published by Newleaf)*



DIG FOR VICTORY

Having an allotment is no longer a tiresome hobby practised by old geezers in wellies and donkey jackets. It's an insurance policy against an uncertain future, as **Paul Kingsnorth** has found out for himself over the last three years.

The best thing that happened to me this summer was 13 inches long and bright yellow. And boy, was it worth the wait.

I've been trying to grow sweetcorn on my allotment for three years and it's never worked before. I planted the seeds, I watered and tended them, I fed them and after three months of it, in high summer, the cobs were always white, rubbery and completely inedible. They 'hadn't pollinated', I was told, knowingly, by old men wearing gumboots and sly smiles.

But not this year. This time, for whatever reason, I got it right. I carted home my freshly-picked cobs in triumph, tossed them into a pan of water (boil for 10 minutes, no salt) and then ate them, with butter and pepper. There was no doubt in my mind that they were the best sweetcorn I had ever tasted, and probably the best sweetcorn ever grown by human hands.

Growing your own food does this to you. It instils such a sense of pride that digging up your potatoes becomes something akin to attending the birth of your first child (only less messy). And the sweetcorn was only the best bit. This year, my allotment also yielded a basket of fantastically tasty peas, three varieties of carrot, fresh cherry tomatoes (red and gold), garlic, strawberries, raspberries, several different types of lettuce, runner beans, French beans, broad beans, red onions, brown onions, yellow courgettes, green courgettes, beetroot (white and red), potatoes (three varieties, including my favourite, the weird-looking knobbly Pink Fir Apple) and pumpkin.

Much of this is still in my freezer. One of the pumpkins became last night's

dinner (the best soup I've ever had, too, now that I think about it). Meanwhile, still in the ground, to tide me over for the winter, are dozens of leeks, 10 broccoli plants and two lines of parsnips. All this is organic, all of it was grown from seed by yours truly, and all of it tastes a zillion times better than anything you can buy in the shops.

Three years ago, though, things were very different. I knew nothing about growing food. I had never grown anything at all, in fact, with the exception of a few herbs in a window box once – an experiment which ended when my flatmate accidentally nudged it two storeys down into the street below. I had no idea how to make a bean frame or what a 'mulch' was. Like most other people, I bought my vegetables from the shops. I had friends who had allotments, but far from persuading me to join in, their constant wittering about which varieties of leek they grew and precisely how they made compost made me determined never to become an allotment bore. And why bother anyway when Tesco is just round the corner?

Seeing the light

Curiously enough, it took a Brazilian peasant to change my mind. Three years ago, in the process of researching a book on the anti-globalisation movement, I found myself in the wide fields of southern Brazil, touring a rural settlement with a farmer called Osmar. Osmar was a member of the Movimento Sem Terra, the landless workers movement, which has been resettling landless people on unused land all over Brazil for 20 years,

My knowledge was basic in the extreme: I knew if you put seeds in soil and added water, they grew

giving them new life and new hope in the process. I had met dozens of people like Osmar,

stayed with them, toured their land, seen the work they had put into it and the pride it had given them – and tasted the results.

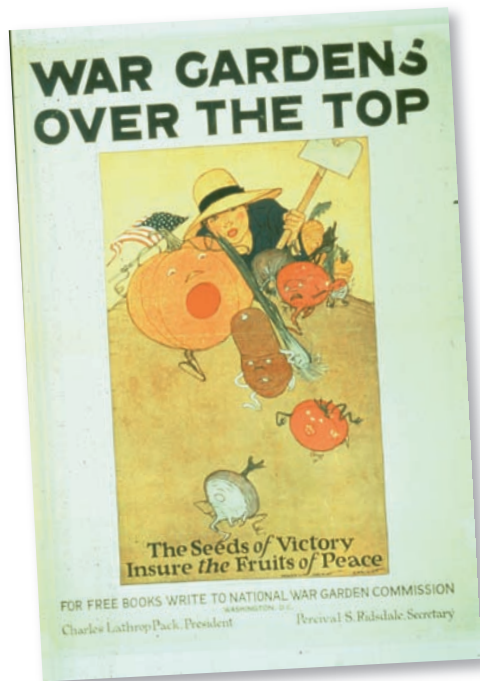
Now Osmar, with his thumbs hooked into his belt, was gazing out across his pumpkin field as the dusk began to gather over the blue tin roof of his house.

'Every man', he said to me, simply, 'should have a piece of land.' I don't quite know why, but his words stuck with me. When I got back home six months later, one of the first things I did was apply for an allotment.

It didn't take me long to find one. I paid my rent, signed my name and stood, thumbs hooked into my belt, proudly surveying my 300 square yards. It was smothered in brambles and grass. Not just any grass, either, it turned out, but a persistent perennial weed known as 'couch grass' that I still haven't managed to beat back properly three years later. No one had used the plot for years. It was a disaster. What the hell was I supposed to do with it? I felt like giving up before I started.

Getting started

But I didn't. I organised with the allotment society to get my plot ploughed up by the council's rotivator (for free), bought myself a book called *The Vegetable Expert* and got stuck in. My knowledge at this stage was basic in the extreme: I knew that if you put seeds in soil and added water, they grew. That was it. It was going to be a steep learning curve. But if Osmar could do it, I told myself, so could I. In



any case, I remembered my granddad's allotment; he and his dad had plots side by side, which they used to grow potatoes and beans and escape from their wives. Maybe it ran in the family. There was only one way to find out.

In many ways it was a freak of history that I was able to do this at all. Allotments are a uniquely British institution – like the House of Lords or the monarchy, only less embarrassing and considerably more useful. They date back to the parliamentary Enclosure Acts of the 18th century, which enclosed vast amounts of common land used by the poor and gave it over to wealthy landowners for grazing. As a result, vast numbers of the rural poor were forced to move to the burgeoning cities to work in the factories and mills of the new industrial revolution. But the numbers of people in the cities quickly outstripped the amount of food available to feed them, and hunger and even rebellion threatened.

Every man should have some land

The solution? Parliament decided to 'allot' every worker a piece of land on which to grow their own food. From the mid-Nineteenth Century until the late 20th Century, various acts of parliament granted the right of allotment to ordinary people – you and me – in both town and country. Today, every local council is obliged by law to offer allotment gardens for public use at very low rent (mine costs me £16 a year).

All excellent stuff – but also, surely, redundant? People may have needed land to grow their own food during the Enclosures; or, of course, during the Second World War when the famous 'Dig For Victory' campaign made the allotments of Britain thrive like never before. But today? With supermarket shelves bristling with out of season fruit and veg every day of the year? With most of it fairly cheap? With a global economy providing us more variety than the average 19th Century turnip muncher could have dreamed of? Why grub about in the mud when you can pop into Asda and get a pack of baby sweetcorn for a quid?

The reasons, of course, are many. For a start, growing your own food is immensely personally satisfying. It's also

healthy, both when you eat the results and when you expend sweat in digging and hoeing. It's cheaper, by far, to grow vegetables than to buy them – though it takes more time, of course.

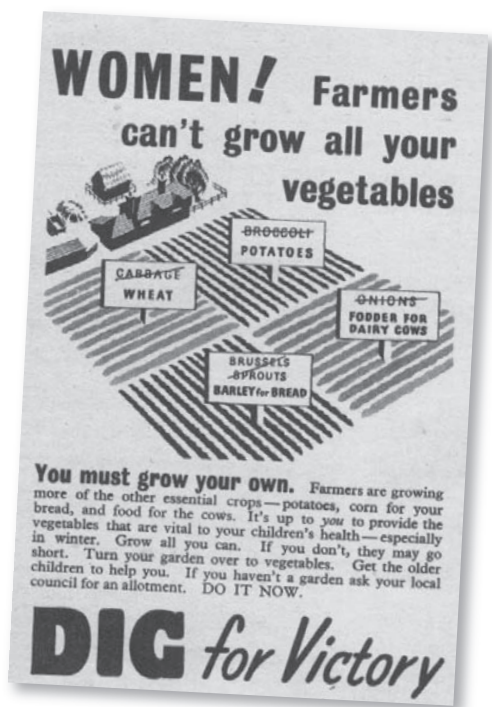
Ready for the future

But there's a bigger reason too – for things are changing out there, faster than we possibly realise. The global economy that brings us all this 'cheap' food from afar looks increasingly like it is built on sand. It is certainly reliant on oil, and oil, as last month's *Ecologist* explained, is not going to last forever. Insecure supplies, terrorism, travails in the Middle East and, of course, climate change, are going to make our reliance on the black stuff seem very tenuous in the very near future. The era of cheap oil is very probably over, and as it ends, the supposedly unbreakable supply chains that bring food to our tables will begin to collapse, or at the very least become much more expensive. Cheap veg, like cheap petrol, is very probably on the way out. Under these circumstances, growing your own begins to seem a very smart move indeed.

Allotmenting, in other words, is no longer a tiresome hobby practised by old geezers in wellies and donkey jackets; it's an insurance policy against an uncertain future.

My steep learning curve turned out not to be as painful as I thought it might be. That first year, I got a fair bit of ground cleared, weeded and dug over, and began, with the help of my trusty book, to start planting things. Easy things, I thought, for starters: potatoes, courgettes, and carrots. In they went and amazingly, a few weeks later, up they grew. I can still remember the excitement of turning up on my plot one day to see a line of small, green, fluffy fronds where I had planted my carrot seeds. I can still remember, too, the sight and the smell of digging up my first ever potatoes a few months later, and discovering, to my amazement, that not only did they look like potatoes, but they tasted like them too.

From then on, there was no stopping me; and there still isn't. Every month, it seems, I learn something new. How to make leafmould, and why; how to (attempt to) keep slugs away without pellets; how to build a coldframe; how



During the Second World War the famous 'Dig for Victory' campaign used posters like these to encourage people to do their bit for the war effort.

to compost; how to keep pheasants away from my strawberry patch. The list goes on – and this is before we even get to the fringe benefits.

I have, for example, become a much better cook since I started allotmenting. Suddenly it seems a crime to waste any of my precious crops, so I've had to learn what to do with them. How to make pumpkin soup, raspberry jam, onion marmalade, green tomato chutney, casseroles, and stews. I've also learnt the value of sharing things – from tools to ideas – with fellow plotters; and of true recycling. Want to smother the weeds on your plot with layers of old carpet? Want to edge your borders with planks? Want some glass to build a coldframe or greenhouse? Want to avoid paying for them? Then you do what I, and all good allotmenters, do, and trail around town hoicking things out of skips. It's free, it cuts down on waste and it's also quite entertaining. It's amazing the things people throw away.

In tune with nature

And there's something else, too: having an allotment helps you understand where you are. It helps you to get to know your local environment; your place. What type of soil does it have? What kinds of insects and birds inhabit it? What does the air smell like on an autumn evening? How often does it rain, and how hard? What

Allotments are a uniquely British Institution – like the House of Lords or the Monarchy – only less embarrassing and more useful

grows well and what doesn't? What time does the sun begin to set? Closeted inside homes or offices, these are questions I used to find it difficult to answer. But not any more, and it has made me feel, somehow, like a better and more complete human being.

And the benefits keep coming. I've made new friends, and realised what an interesting, diverse and occasionally bizarre bunch of people inhabit my neighbouring plots. Within a few hundred yards of me there is a young couple from

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New Zealand, two old geezers in cloth caps who seem to maintain an eternal bonfire for no good reason; an old Indian woman who gardens in a sari and wellies; a city councillor who grows pumpkins the size of Mars; a chain-smoking pensioner from Lithuania and an ever-increasing influx of young people, all keen to grow their own food on their own terms.

For allotmenting, it seems, is becoming popular – even slightly hip – these days. Food scares, horror stories about supermarkets, increasing lack of green spaces and a simple desire to get out of the house has led to a resurgence in veg-growing. Suddenly it seems on the verge of becoming a movement; a national gathering of people who have been force-fed long enough by the industrial food machine, and want to eat – and live – on their own terms.

Fuller flavour

Who can blame them? Another thing that you learn very quickly when you start allotmenting is just how tasteless, bland and artificial all those shiny, identical supermarket vegetables are. Suddenly it seems as if you are waking up from a long, weird dream in which all the strawberries tasted of rubber and the apples were made of plastic and all looked exactly the same, and everyone considered this to be normal and barely worth commenting on. Suddenly you look through the sliding doors at those vegetable aisles under the strip lights and see them for what they are. Call that a carrot? Real carrots have mud on them, and they taste of something! Get thee behind me, Sainsbury's.

And this is when you know you've succeeded. This is when you know the allotment has really done its work on you. For at heart, this is not about growing vegetables at all. It's not about mulching, or compost heaps, or long-handled hoes. It is a declaration of independence: here I stand, on my own plot of land. I grow what I want, when I want, and there's nothing you can do about it. And no, I don't have a loyalty card.

As for me: the end of the growing season is approaching, but the year's work isn't over yet. Tomorrow I'm having a trailer full of horse dung delivered from a

local farm. That'll take me several joyous days to dig it into my now mostly-empty beds. Then I'll be digging a new bed, and edging my existing plot with planks to keep the couch grass out. After all that, if winter isn't fully upon me, I'll be buying a new shed. Then I'll take my pumpkin soup out of the freezer, sit in front of the fire and wait for the winter to pass, knowing that when it does, whatever else happens, I've got something to look forward to when the spring comes.

■ www.paulkingsnorth.net



ALLOTMENTS ON THE WEB:

get online before the oil runs out!

Allotments UK

Very useful all-purpose site includes how to get started, where to find allotments in your area, links and tips from users of its many forums. www.allotments-uk.com

National Society of Allotment and Leisure Gardeners

All you ever needed to know about allotments, and more. www.nsalg.org.uk

Allotments Regeneration Initiative

Organisation working to encourage people and community groups to take up allotmenting. www.farmgarden.org.uk/ari/

Garden Organic

Website of HDRA, the national organic growers' organisation. Also a great place to order seeds and get seasonal advice. www.gardenorganic.org.uk

Plot Holes

Amusing blog, subtitled 'An idiot's guide how not to approach a new allotment.' Strangely useful. www.plotholes.blogspot.com/



Nature

Lessons from

BY ANTHONY WALL

Episode 2 - Poison Toads

Whooping like a cowboy, Bruce zigzagged his 4x4 through the Queensland dusk. On the road behind him – carnage. Scores of squished and warty bodies. Toads, dead and dying, up to 10 inches long, mottled yellow and brown and red, packed with poison.

Bruce didn't enjoy taking life – not usually – indeed his farmer friends sometimes joshed him about being squeamish. But cane toads were an exception. They brought out an unsuspected violent streak in Bruce. Hard to blame him – two of his dogs had died from licking the toads' toxic skin, and neighbours told of fatally tainted drinking troughs.

◆
Bufo marinus, dubbed cane toad in Australia, is one of the few amphibians and reptiles to become naturalised around the world. It has certainly been the most destructive. A four-legged venom factory, it menaces all sorts of creatures – its predators as well as its prey – and is lethal even when dead.

In 1935, Queensland's sugar-cane growers saw *Bufo marinus* as a potential saviour. This insect-gobbling toad, newly introduced from Hawaii, promised to make short work of the beetles ravaging the sugar plantations.

At last, the perfect pest controller!

Wrong.

The toads showed little or no interest in the

beetles they were expected to consume. Instead, they feasted on a variety of other insects, mostly 'benign'. And they had begun to eat (or out-compete) native frogs, lizards, snakes... Virtually no animal was safe from the cane toad: ravenous, resilient, a master poisoner.

Australians were slow to understand this. Many still regarded *Bufo marinus* as helpful: in human pregnancy tests, for example. Another fallacy. Some strange people kept them as pets.

Who thinks well of the toads now, so rashly invited in, an occupying army, ever advancing, impossible to defeat?

A decades-long cross-country march has taken them as far as Darwin, remote capital of the Northern Territory. Here, outraged residents often have to surrender their swimming pools to the croaking hordes.

It's unpleasant and inconvenient, though hardly a catastrophe. But in Kakadu National Park, a World Heritage site, the toads could obliterate almost any fauna they encounter.

Ecologists are alarmed, keenly aware of Australia's historic wildlife losses. Unique animals are gone forever: 54 species extinct in less than 200 years. The beautiful, the bizarre – all of them irreplaceable – direct or indirect victims of settlers too short-sighted to care.

But how should the precious ecosystems be protected from further abuse? The recent arrival of *Bufo marinus* in Kakadu Park has given scientists'

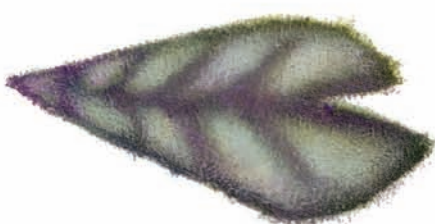


ILLUSTRATION BY LISA EVANS



research an extra urgency.

One furry beast – the rabbit-sized northern quoll – is particularly at risk and serves as a kind of emblem for the teams wanting to save it.

‘Mind you, the quoll seems intent on suicide,’ says project officer Rod Kennett. A carnivorous marsupial, it tries to eat *anything* it can catch. ‘And nowadays that may mean a cane toad.’

Quolls have always been vulnerable. Breeding males die out each season, exhausted by frantic mating, and relatively few adult females make it from year to year. ‘So, take away just a small number of nursing mothers... and quoll populations will crash.’

Terminally? Kennett fears the worst. Live quolls are hardly ever seen. But he comes across dead ones, sometimes with reddened gums – a sign of cane toad poisoning.

Nobody’s counting on the northern quoll’s survival: for now, its best hope looks to be evacuation to a toad-free island in coastal waters.

But *Bufo marinus* is not quite invincible. Two native species (a snake and a frog) have proved themselves capable of eating its eggs, tadpoles and toadlets with no ill effects. Good Riddance. Anything that kills cane toads is welcome round here.

Some Australians have even found a commercial use for these unlovely amphibians – turning their skins into shoes, wallets, handbags, and bookbindings. Equally enterprising, the

occasional drug user smokes dried bufotenine (toad venom), which is prized as a hallucinogen.

None of this makes a noticeable dent in the invading regiments. They appear to be ‘stronger’ than anything local conditions can throw at them, which is typical of alien organisms. Biologists concede that the cane toad will not be overcome soon.

Damage done by imported species costs Australia hundreds of millions of dollars a year in lost agricultural output and environmental degradation.

Bufo marinus is merely one of the culprits. But how odd that people should ever have mistaken it for a blessing and not a curse.







THE ELEPHANT WHISPERER

Lek lives in Thailand. She saves Thai elephants. Now, thanks to a clumsy campaign launched by animal rights activists in America, all her work is at risk. BY ROBERT KING

A lot of people, animal rights people, tell me, as if they feel their position to be morally unassailable, that they prefer animals to humans. I go one better. I prefer animals to animal rights activists.

For some, animals represent a safe, non-betraying, painless, simple and, let's face it, *boring* target for their love. 'So you love animals more than people?' I used to say. 'How would you feel about your daughter marrying one?' And then I met Lek.

Lek (real name Sangduen Chailert) loves elephants with a passion. She manages to do this without hating people, and someone who loves elephants in Thailand has good reason to hate at least some people. You might find yourself hating some people when you read on and find out what they do to elephants. Lek's love of elephants has certainly opened her up to being hurt and her love could be described as neither simple nor boring.

She also loves people. She spends her day touring the mountain villages and giving inoculations and wormings to children. And saving elephants. And raising money to do all this. And campaigning. And tending to elephants. And doctoring sick elephants. And shovelling elephant dung.

She sleeps about four hours a night (I was surprised it was as much as that) and is on call 24/7 for anything from a frightened elephant that needs to be rescued from the streets of a city to an amateur writer asking impertinent and ignorant



questions about elephants.

A feisty heroine

We first met her in her office in Chiang Mai. Petite, even by Thai standards (her nickname means 'tiny'), she is elegant, energetic and a living testament to the advertising-jingle cliché that 'true beauty comes from within'. She is the granddaughter of a Khamu Shaman and has all the other proper elements of a romantic heroine present and correct. It may be only a question of

Elephants feel like Habitat floor matting; the kind that gives you grazes on your knees and elbows if you are unwise enough to make love on it

time before Hollywood decides to do some sort of Dian Fossey-like take on her story, which has all the classic elements of their favourite 'feisty heroine takes on bullies' sort of tale.

As is normal (we discovered), her entrance was heralded by a canine system of

once-stray dogs that orbit her at most of the places she goes. Her first question was 'How did you hear of us?'. This was a perfectly reasonable question given that we had been reliably informed that her elephant park was closed.

'You-got-a-girl-friend!' says my wife in an annoyingly singsong voice. My wife thinks that I am a bit in love with Lek, but to be honest, everyone in the elephant park is a bit in love with her – the mahouts, the visitors, the co-workers, the nice young veterinary students on work experience. The park is her vision and her love and

determination are the engines that drive it.

Lek's character pervades the Elephant Nature Park, which is, quite simply, the most beautiful place I have ever visited. It is one of the only places I have ever been where the view is stunning in every direction.

Usually, wherever you go in the world, there is something to mar the view, something that you hold your hand up to mask as you look around – pylons, litter, an ugly building. Here, it is stunning as far as the eye can see at every point of the compass. Lush green mountains surround the whole place, which is approached only by a bowel-loosening mountain track. Cicadas vie with one another in the rushes, broken into by the occasional low bellow of an elephant saying 'hello' (one assumes) to another elephant.

The loam is rich and supports a profusion of pungent, verdant greenery that really does (and here is one of the few places you can check) grow as high as an elephant's eye. As you get closer there is the gentle susurrant of a distant river. It will not sound or feel so gentle close up, but at this range it is still picturesque rather than scary.

Elephants all around

You arrive and there are elephants. All around you. 'Wait a minute!' screams the wussiest part of my brain. 'Isn't this dangerous? Don't dozens of elephant keepers get squashed each year by these creatures?'

No one seems to mind. You walk up to them, you touch them (they feel like Habitat floor matting; the kind that gives you grazes on your knees and elbows if you are unwise enough to

make love on it). You feed them. Boy, do you feed them.

'Not worry,' laughs a mahout as he sees the look on my face on being told to put a corn cob directly into the elephant's mouth. 'All teeth are at the back.'

Later on you can bathe with them; which is quite an experience in a swiftly rushing stream. They almost, but not quite, roll onto their backs like dogs waiting to be scratched. When you are doing your best to keep your footing on the gravel riverbed, a frolicking elephant makes an interesting bathing companion.

You can even ride on them, on their heads that is – those howdahs you see are apparently bad for their backs.

But for now, you feed them.

It's not easy being a 10,000lb vegetarian

What does everyone know about elephants? That they are big. That they are adorable. That they are endangered. That they cannot jump. Most of this is true. And it is true that there is very little cuter than a baby elephant – until 500lbs of one has tried to crawl affectionately and adorably into your lap in search of corn cobs, then you know the true meaning of fear. The true meaning of 'ever having a family' and 'living to a ripe old age' might also seem elusive at this point.

Elephants, both African and Asian, live in the wild in matriarchal groups. The males are thrown out when they reach adolescence because they become a bit of a trunk-full and subsequently roam around alone ripping up the vegetation until they get their periods of 'Musth' – a still not-fully-understood process where they become aggressive and highly sexual for a few months. Imagine road rage scaled up by a factor of 50 and with tusks and you get the general idea.

This matriarchy means that groups will adopt orphans and socialise them, a phenomenon that tends not to occur in species where alpha males rule a group as they tend to resent allocating resources to another male's offspring. Here, however, the mothering instinct seems to trump the purely reproductive one and there are many accounts of females befriending and raising those that are not their own.

Vegetarian? Matriarchal? Elephants are about as politically correct as an animal can get!

Until, that is, they stray onto farm land. Elephants spend about 18 hours of every day eating up to 10 per cent of their body weight in low-yield vegetation. Not surprisingly, farmers tend not to appreciate their finer points when they see them munching next year's harvest and just open fire on them.

Hostile farmers, and the lack of available land to graze on, force elephant owners and their elephants into cities to beg for food, as happens illegally, in Bangkok and Chiang Mai. Not only is it nigh on impossible for them to find enough food, the water they are likely to drink is liable to make them sick. As such, the elephants that are seen in cities are very likely to be malnourished and run

THE ELEPHANT WHISPERER

Lek's park and the fact that one can interact with elephants in such a close way rests on her special (but not unique) methods of training elephants. She uses positive reinforcement and the elephants' natural and complex social instincts to achieve this.

They trust her. I saw her administering an injection (the size of the needle was akin to a lance) to an elephant's abscess. That this was painful was shown by the fact that the elephant sucked its trunk, like humans suck their thumbs, as the needle went in (you see, I told you they were cute!). Despite its obvious discomfort, the elephant did not try to run off.

The fact that all this goes on while you are right next to the elephants and no one gets hurt speaks highly for Lek's relationship with them.

The basic principle is to use the elephants' natural propensity for sociability and then use positive reinforcement (ie rewarding desired behaviour as opposed to punishing undesired behaviour), to accustom them to human beings. These methods create a group of elephants that will welcome newcomers, both elephants and humans, to the herd and take care of them, adopting waifs and strays and teaching them to do likewise. This is all natural behaviour for elephants in the wild and you can see it in action at the park.

While the Phaa-Jaan builds fear, Lek's methods build trust.

Lek wants to spread these methods throughout Thailand, Asia and eventually the world. She is having some success in this by training mahouts, both foreign and national, and both Yale and Oxford Universities have sent teams to study her methods.

These kinds of methods have worked with horses and there is at least a prima facie case for thinking that they can work with elephants. As far back as Xenophon we have accounts of forming relationships between human and horse that do not require brutality. Based on the ideas of Monty Roberts is the notion that the herd instinct of the horse can be manipulated to mutual benefit. It is sometimes known as 'gentling'.

That this has been successfully applied to horses is not very controversial, but there are questions as to the successful applications to elephants that need addressing. One problem is the lack of selective breeding in elephants (compared with, say, horses), which would seem to pose the problem of sometimes producing intractable animals.

Another serious issue is that of male elephants, who can become so obnoxious and unmanageable that their own families throw them out at adolescence. At the moment male elephants (like Jungle Boy) are at the Nature Park, although Lek's big success story Keng Mai was killed. He was a living example of how a male elephant brought up without the psychosis-inducing Phaa-Jaan could become sociable around humans. Even given all this, it would perhaps have to be admitted that the current system of confining elephants in Musth because they pose a danger to others would have to continue for the foreseeable future. This is a problem that would not go away even if PETA's dream of 'letting the elephants go' was made real. And where would they go? Into towns? Onto roads? Onto farmland? All places where they will surely die.

the risk of being injured by traffic.

Max, Lek's oldest elephant and perhaps the tallest in Thailand, was brought in with a broken leg having been hit by a truck. Soon after we left Boon Rod, another elephant, had to be rescued after becoming confused and frightened when chased by police and an angry crowd in Chiang Mai. Her mahout had resorted to hacking at her with a heavy hook in order to get her to run from the police and this had increased her state of panic. Lek was called in to calm her down. Happily, she has now been accepted into the Nature Park's herd by the elder females.

This is not a toy

A hundred years ago elephants numbered about 100,000 in Thailand. They helped build the place. Today's estimates vary from an optimistic 5,000 to a pessimistic 2,500. The outlawing of logging in 1989 has made it imperative that they are supported in some other way. So, how is it best for humans and elephants to interact in Thailand?

Footage showed elephants being forced into tiny wooden cages, held there for days, beaten with sticks, hacked at with goads and burned with hot irons

One option is to simply leave them alone to roam freely or perhaps in very extended parks, but there is a problem here – Thailand is not Africa. There simply is not the room for herds of elephants to roam at will without endangering

themselves. What's more male elephants, especially during the Musth period, are violent and unpredictable, making them a danger to property, people and themselves.

An extended parks idea might work and, indeed, is something that Lek is moving toward, but such schemes require money and backing. Unfortunately, to date, the default positions for elephants to occupy have been either begging on the streets or in unregulated elephant shows.

There have been a lot of accusations thrown around about the activities in these shows, just as there have about circuses in other countries and I do not propose to muddy the waters further by weighing into this debate. I have never actually seen an elephant show so I am not going to express an opinion, beyond saying that the reason I haven't seen one is that I have no desire to see animals treated as clumsy humans for amusement purposes. As to whether they are well or badly treated, I have no direct experience. I would guess from anecdotal evidence that some are well treated, some are badly treated. What is far more

contentious is the issue of what is done to prepare elephants for such shows.

It is not contested that the traditional method of preparation is the 'phaa jaan' (which means 'the crush' and is based on negative reinforcement with some black magic thrown in for good measure). This is a time when the link between elephant and mother is broken and a new relationship with the mahout is set up. It is what is done to achieve this that has caused friction.

Learned helplessness

In 2002 a journalist called Jennifer Hile made a video for the *Wild Nature* series on the National Geographic channel in which she showed footage of elephants being forced into tiny wooden cages, held there for days, beaten with sticks, hacked at with goads and burned with hot irons. In some cases, especially with the males, elephants have to be destroyed because they react too strongly to this treatment.

Psychologists know this as a state of 'learned helplessness', wherein an animal eventually gives up attempting to escape as its previous attempts have simply resulted in painful failure. The effects are those of clinical depression.

When People for the Ethical Treatment of Animals (PETA) saw the video, with what can only be described as a nodding acquaintance with local conditions or long-term effects, they called for a total boycott of Thailand, of both products and holidays, until a set of laws is enacted. They are calling for a total ban on any commercial use of elephants, which, presumably, includes any place where people might pay to interact with them, without any distinction made as to how this is done.

PETA's elephant expert, Nicole Meyer, suggested to me (via email) that people might 'contribute to selected elephant parks' with money, but this is not a position that is officially endorsed on PETA's website. Nowhere does it say which these 'selected elephant parks' might be. Although individuals within PETA (such as Ms Meyer) *might* advocate support of parks like Lek's, nowhere is this stated as official policy and there is no way for an interested outsider to come to hear of such places through PETA. PETA's website is easily accessible and, indeed, I urge you to visit it since it contains a lot of footage of the things mentioned in this article.

One is tempted to remind Americans at this point that bursting into other people's countries demanding regime changes 'or else' has had a less than perfect track record of success in the past. Where sensitivity, diplomacy and local knowledge were needed, a sledgehammer approach has been

substituted.

Lek was prominent in the Hile video since she has unparalleled access to the hill tribes and is widely regarded as an elephant expert and, more importantly, one who has the will and ability to change the way elephants are treated in her beloved country. She has been campaigning long and hard to overcome years of 'phaa jaan' tradition and is a living example of why such methods are unnecessary.

And yet the likelihood is that the sanctions advocated by PETA will finish off Lek's park and the many others that are trying to work for the benefit of the elephants.

That there are a wicked minority who will not stop at harming those who stand in their way of making money has been shown by the fact that following the Wild Nature (ITALS) film, Lek received death threats and had to go into hiding.

Just a warning

One of her elephants, Keng Mai, because he was an example of how Lek's methods of bringing up elephants (especially male ones) without the Phaa-Jaan could work, was poisoned 'as a warning'. He died.

No one is saying that PETA caused this, of course not. Also no one (least of all me) wants to claim that PETA's statement about the mistreatment of elephants is alarmist. If anything, it is an *understatement* – they are probably overestimating the numbers of elephants left alive in Thailand for a start.

But Lek is now seen as an embarrassment, someone who has brought shame onto the country and while westerners might find this hard to accept, in a country where face-saving is vital, whistle-blowers are not viewed as heroes but as the villains of the piece.

The problem is that by backing the government into a corner from which it could not, while saving face, escape, PETA has not helped those people who are actually making a change at ground level. People like Lek.

Leaving aside the political question as to what PETA could possibly have thought it was likely to achieve by backing a sovereign nation into a corner, there is a practical question as to what it proposes to replace the status quo with exactly. Firstly, PETA has forced people to take sides.

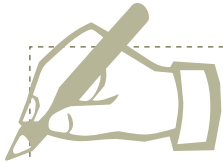
Friends of the Asian Elephant, a government-funded organisation that was bringing about (fairly rapid) change, has now adopted the position that PETA orchestrated the video footage of the Phaa-Jaan. You don't have to think too hard to work out why they felt compelled to say this. They no longer work with Lek and therefore she needs funding



The likelihood is the sanctions advocated by PETA will finish off Lek's park and the many others trying to work for the elephants



LEK'S ELEPHANTS



IF YOU'D LIKE TO LET PETA KNOW YOUR FEELINGS, PLEASE WRITE /EMAIL THE FOLLOWING LETTER...

Dear PETA,

While appreciating your efforts on behalf of elephants and their plight in Thailand, I feel it is worth pointing out that you may be throwing out the baby elephant with the cruelty bathwater.

A boycott of the whole of Thailand is unrealistic and backs people into corners. It is a sovereign nation and should be treated with respect.

People within it are working hard and honestly for change and they need your support.

I urge you to withdraw your general boycott and concentrate your energies on publicising the work of those who work effectively and humanely with elephants such as Lek of the Elephant Nature Park, while 'outing' those shows and practices that harm and demean elephants.

Tourists are grown-ups who can make mature choices and use their tourist dollars to great effect.

Once people who run elephant-related activities realise that their economic wellbeing coincides with humane treatment, then sustainable change is more likely to occur.

Thank you for your time and efforts.

more than ever if she is to continue her work.

Secondly, it has to be asked what PETA thinks is a likely long-term stable situation vis-a-vis elephants and humans in Thailand. If it believes that elephants and humans can co-exist side by side without some form of intervention, then it is seriously deluded. Elephants that have not been acclimatised to humans and traffic represent a danger to themselves and us. Farmers are not going to respond positively to the sort of depredations that elephants represent to their crops.

For controlled elephant parks to exist that are not the sort of travesties in which animals are paraded in front of guffawing goons to the benefit of neither, it needs to be shown that alternatives are viable and, of course, profitable. Lek's park demonstrates this.

But time is running out. We simply do not have time to wait while people keep their consciences pure. Lek's park offers a way for humans and elephants to interact in a way that preserves the animals' dignity, our dignity and everyone's safety. It is economically viable, ecologically sustainable and fits with the local conditions. Given half a chance, it is a way that could spread and be used as a model.

No one can doubt Lek's commitment and, if she is to continue, she needs visitors, volunteers, and contributions. Sanctions will kill her elephants. PETA's 'all or nothing' option is not the best way to win hearts and minds. It is also not the best way to save elephants in Thailand.

■ Robert King is a grammar school teacher.

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ELEPHANT NATURE PARK
www.elephantnaturepark.org



IS THIS YOUR RUBBISH?

These images are a selection sent in by *Ecologist* readers demonstrating the damage our rubbish does to wildlife and the environment.

Many thanks to all those who contributed. Please keep sending your images to sarah@theecologist.org



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STARRY STARRY NIGHTS

In our society obsessed with 24-hour working and all night drinking we are denying the importance of the night, its darkness and the peace and balance that it brings. BY JEREMY SMITH



With the chalky cliffs of the Dorset coast stretching for miles in both directions, Bob Mizon sits down on the thick grass of the Purbeck hills, takes out his newspaper and begins to read. A perfect way to spend a relaxing afternoon. Except this isn't the afternoon, it's 2 o'clock in the morning, and thanks to the lights of the Poole Ferry terminal some 10 miles away, Bob can still read the nine point newsprint on his *Sunday Times*.

Bob hasn't come up to sit atop one of the UK's few World Heritage sites and read his paper at night because he's odd. Nor should one question the fact that he spends his days travelling the schools and colleges of southern Britain with a 20-foot inflatable grey planetarium in the back of his car. For Bob is the UK coordinator of the Campaign for Dark Skies, part of an international network that campaigns on behalf of the night sky.

'Half our environment is above the horizon,' explains Bob. 'Half our environment is not protected by the force of law. The night sky, by its very nature a site of special scientific interest and an area of outstanding natural beauty, has, over the last 50 years, been quietly and gradually taken away from those dwelling in towns and urban fringe areas throughout the developed world.' One of his colleagues in the Dark Skies coalition goes one further, bemoaning the loss of 'The largest national park in the world.'

The heavens, say Bob and his ilk, are in need of saving.

According to research by the British Astronomical Association and the Campaign for the Protection of Rural

England, 85 per cent of people in this country now live in areas where artificial lighting blots out the night sky. Areas suffering the most severe light pollution have risen by 17 per cent, with a quarter of England's landmass now producing more light than seven years ago. Increasing light pollution means that most UK residents are now unable to see our own galaxy, the Milky Way.

Professional astronomers are finding that telescopes built to observe the further reaches of the night sky a few decades ago are no longer up to the task. The 2.5m telescope on Mount Wilson near Los Angeles is as good as useless for deep-sky observations. Even the giant observatory perched 4,300m atop Hawaii's volcanic Mauna Kea is beginning to be affected.

So what? Yes, it's a shame not to be able to see the stars at night, but aren't there more important things to be worrying about, like the very real pollution of our land and our water before we start getting too concerned over what is nothing more than an aesthetic loss? On the contrary, light pollution has very serious, very real, consequences. It's just that, like the stars it blots out, they are somewhat harder to see.

Messing around with nature

At the risk of stating the obvious, life on a spinning planet is split into two halves, day and night. The many animals and plants of the natural world rely upon this rhythm for everything from hunting to sleeping, navigating their long migrations to choosing when and where to give birth. When we mess around with the

More birds die in the US each year from collisions caused by lighting than from the *Exxon Valdez*

natural order of the skies, we mess around with their ability to survive.

When new high-powered street lights were

installed in a rural Leicester village earlier this year, a local councillor complained to the paper that: 'It looks like lighting from a retail park. It is incredibly bright and not at all what you would expect from a country lane. On the first evening after they were installed, birds were still singing, even though it was very dark, because the street lamps had convinced them it was still light.'

At the other end of the night, dawn choruses are starting earlier and earlier, as birds, confused by bright artificial lights, herald yet another a false dawn. With their sleep patterns disrupted, they are less alert in the day, and so less able to catch their prey. Of greater concern, however, is the number of birds that die each year from collisions caused by artificial lighting. Confused by the reflection in the windows of tall buildings, they fly into the glass, mistaking the reflected lights for distant stars. More birds die each year in this way in the US than died from the very 'real' pollution of the *Exxon Valdez* disaster. (Notably, that disaster is often blamed on the captain of the vessel being overtired as a result of trying to sail a vast tanker around the clock, rather than taking proper rests.)

A report on the BBC website last year explained how important light is to birds: 'US scientists believe they have made an important breakthrough in the mystery of how migrating birds manage to navigate thousands of kilometres and arrive at exactly the same spot each year... The

researchers concluded that each night the thrushes must have 'recalibrated' their inbuilt compass from the position of the setting sun.'

Another animal well known for its seasonal navigation is the sea turtle. Female turtles, having conceived on one side of the Atlantic, swim across the ocean, arriving *en masse* at one of only a few beaches on the Caribbean coastline over a period of a few nights to lay their eggs. Then, several months later, again over a period of a few nights, all the baby turtles hatch and the beach becomes a mass of frenzied scuttling as they all try to reach the sea.

Unfortunately, sea turtles aren't the only scuttling animals attracted to the beautiful Caribbean coastline. High rise tourist developments, with brightly lit beach fronts and long esplanades, now line the backs of many of the turtles' natural birth-grounds. If the lights are not extinguished (and thankfully increasingly during this time of year they are), the mother turtles refuse to come to shore to lay their eggs. For the few who do, there is a high chance that the baby turtles that do emerge from the eggs will scurry the wrong way, drawn away from the sea by the artificial lights.

Even with efforts to dim the lights, many turtles continue to struggle, because while the lights on the beach may have been dimmed, the night sky is still blotted out by the sky glow from developments further inland. In 1998, despite stringent beach-front lighting measures, 19,970 turtle hatchlings were reported as disorientated to the Florida Department of Environmental Protection. Confused by the lights, they waste what little energy they have by going the wrong way and become easy prey for gulls and other predators. If they do reach the sea, they are too exhausted to swim.

Many other animals suffer in a similar way. Owls, mice and bats all have their nocturnal habitats compromised. The survival of the glowworm and the firefly is considered most at risk from bright artificial lights, which make it harder to see their prospective mates' glow. Dung beetles are also particularly affected. According to a 2003 BBC news article: 'Many birds use the sun, moon or stars as a marker in the sky. But the African



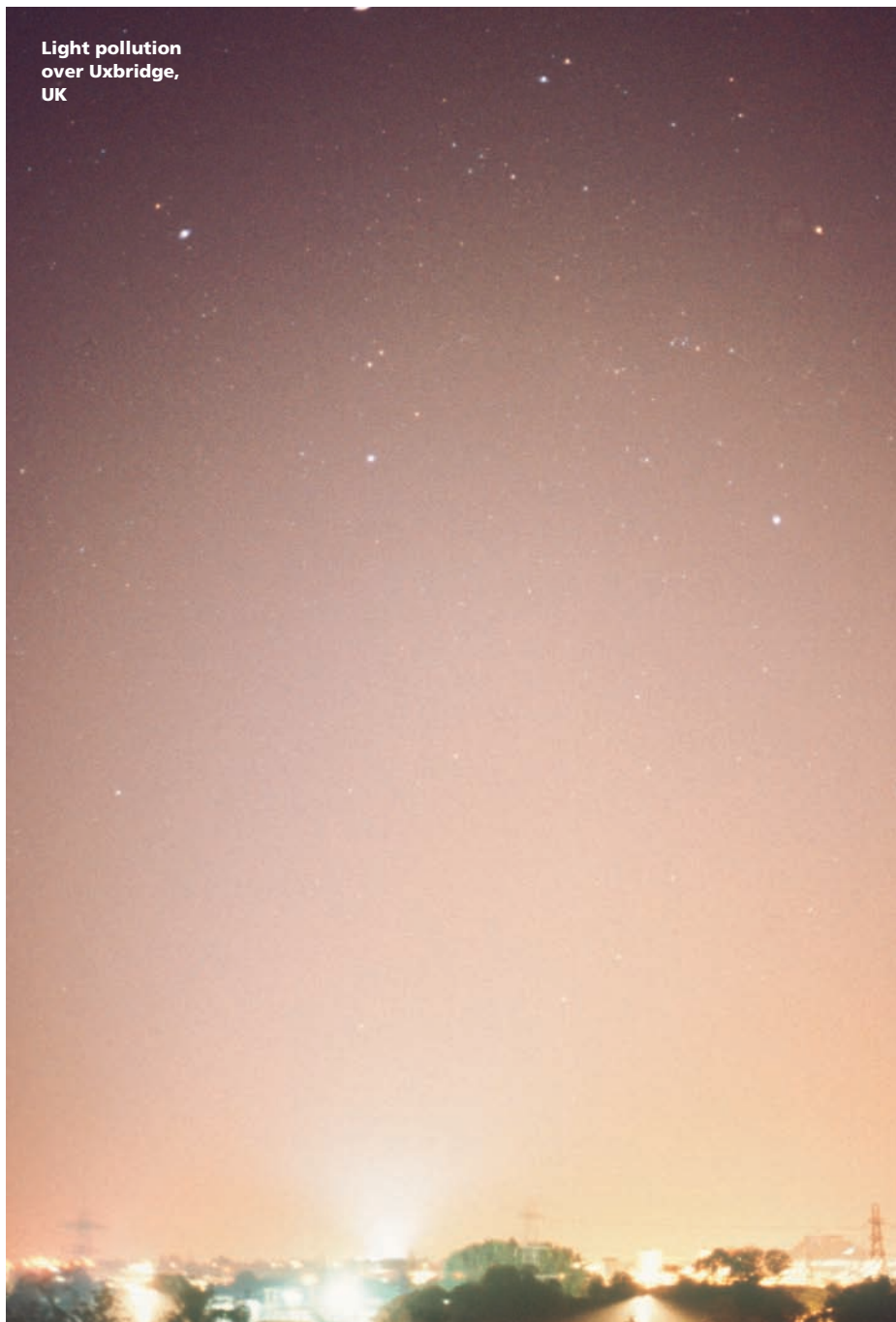
dung beetle seems to have even more remarkable skills. It uses the pattern created when moonlight strikes tiny particles in the atmosphere (polarisation) to orient itself and travel in a straight line. When nights are cloudy, its progress across the ground is more random and it tends to go around in circles.'

Fish suffer too. Trout have been shown to have their behaviour disrupted by floodlights. Halibut spawning times change as a result of artificial lights. Even deep sea organisms don't escape. With their eyes unaccustomed to receiving any light at all, when their inky black world is

invaded by submersibles with ultra bright headlights, the photoreceptors on their eyes can be seriously damaged.

Even plants are affected. From the green algae that live on the surface of ponds to giant and ancient trees, all have been shown to have their natural systems disturbed by exposure to excessive amounts of artificial light. They drop their leaves at the wrong time of year, or attempt to photosynthesise or flower at night.

As Ben Harper wrote in the journal *Conservation in Practice* last year: 'Many of the effects of artificial light may resonate



up and down food chains, dragging whole ecosystems into imbalance. And by modifying the playing field on which nocturnal organisms develop, interact, and reproduce, artificial light may sculpt not only their individual lives but also the biological evolution of their species.'

A SAD story

While mankind is the cause of the disruption, we are also a victim, as much a part of nature as the animals whose lives we disturb. Like most of the animal

kingdom, we generally sleep when it's dark and it's well known that exposure to excessive light can mess with our sleep patterns. Amnesty lists exposing prisoners to unbroken bright lights as a form of torture. And while Scandinavians may be famous for their high suicide rates, it is more the long summer nights than the short winter days that do it. A recent study found that: 'A significant excess of total suicides was found during spring/summer (May-July) and a significant trough during winter/spring (December-

March) months.'

What separates us from the rest of the animal kingdom is that much of the damage we do to ourselves is by the lights inside our homes rather than just those outside. Children who sleep with the light on have been shown to be more likely to suffer from shortsightedness later in life. Dr Chris Idzikowski, director of the Sleep Assessment and Advisory Service, goes further, saying that leaving lights on at night 'could lead to a disruption of sleeping patterns, hyperactivity, and may have a negative impact on a child's health.'

Increasingly research is suggesting that exposure to excessive artificial light at night can increase our chances of cancer. Exposure to nocturnal light has been shown to disrupt the body's production of melatonin, a hormone secreted primarily in the brain at night. One of melatonin's many effects is a reduction in the body's nocturnal production of oestrogen, leading researchers to speculate that chronically decreasing nocturnal melatonin production might increase an individual's risk of developing oestrogen-related malignancies, such as breast cancer. Following a conference on this issue in 2003, Dr George Brainard of Thomas Jefferson University in Philadelphia commented: 'Our work is showing that light at night may be a risk for breast cancer. That is a very serious problem for industrialised countries.'

In her book *Under the weather – how weather and climate affect our health*, *The Ecologist's* health editor Pat Thomas reports on studies into the problems with artificial lighting, and how certain researchers believe having 'full spectrum' lights inside might help. 'A 1973 study in Florida performed on young children found that that hyperactive children calm down and academic levels go up when full spectrum lights are installed,' writes Thomas. 'In a similar study in Canada in the 1980s researchers noted marked behavioural improvement among children under full-spectrum lighting as well as decreased stress levels, identified by drops in systolic blood pressures averaging 20 points per child. When the full-spectrum lighting was changed back to the original cool-white fluorescent tubes, the children's stress levels shot back

up and they became disorderly again.’ Commenting on further experiments, Thomas notes: ‘Human studies suggest that exposure to the full spectrum of UV light lowers blood pressure, improves electrocardiogram readings, reduces cholesterol, aids weight loss and the healing of psoriasis and increases the levels of male and female sex hormones.’

The irony, as Thomas goes on to point out, is that while we are damaging ourselves by exposure to excessive amounts of poor artificial light when indoors, on the rare occasions we do emerge from our burrows, we have so convinced ourselves of the risks of cancer from the sun that we do ourselves more damage by getting not enough natural (full spectrum) sunlight. Write Thomas: ‘While official

agencies continue to feed the public misinformation with regard to the relative risks of sunlight, other studies into the dangers of fluorescent lighting remain unpublicised. One study published in the British medical journal *The Lancet*, reported that a group of Australians who worked all day under fluorescent lights had higher incidents of skin cancer than people who frequently sunbathed or worked outside.’

This disconnect is further emphasised by the disorder known as Seasonal Affective Disorder, or SAD, which is considered to affect between two and 10 per cent of people in northern Europe, and more the further north you go. It’s basically a seasonal depression whereby certain people get particularly low in winter. The current favoured ‘cure’, hardly surprisingly, is for sufferers to spend extended periods of time each day exposed to extremely bright artificial lights.

But, as with all forms of depression, this approach attempts to cure the depression rather than living with and learning from it. So what if we slow down as winter comes, and are less excited by going out and seeing people? Is it bad if for a period of the year our high powered jobs thrill us less, or if we become more contemplative and wonder at our place in

the grand scheme of things? Rather than denying this process, might there not be some merit in embracing it, in seeing it as the natural cycle of seasonal changes, a kind of mental storing up of reserves in readiness for the following spring?

The medical profession tacitly acknowledge this, for SAD is also known as the ‘Hibernation Response’. Indeed, while Americans living in Alaska continue to follow a 9-to-5 work schedule even in winter when there’s no sun – and suffer

a high incidence of SAD as a result, Inuits living more traditional lives in rural villages at similar latitudes are unaffected. Come the winter months they simply sleep more and do less. Writing in the 1960s, at the time when we all were being wowed with the promise of a leisure-filled future as

technology removed the drudge from our lives (of course we now work longer than ever before), the philosopher Sebastian de Grazia commented: ‘Perhaps you can judge the inner health of a land by the capacity of its people to do nothing – to lie abed musing, to amble about aimlessly, to sit having coffee – because whoever can do nothing, letting his thoughts go where they may, must be all at a peace with himself.’

This is anathema in our world now.

We have become obsessed by brightening up whatever dark corner remains, a strange combination of evangelism and paranoia. All over the UK, people have fallen for the latest fad – home security lighting, which bathes our gardens in a bright white light at the slightest movement. So bright are they that the average home security light is half as strong as the UK’s brightest lighthouse. Yet the evidence that they actually work at deterring burglars is far from clear. For one, they go off so often that rarely do people go to check if there is anyone there, trusting that the light will scare off any ne’er-do-well. Meanwhile they provide a handy lighting source for burglars searching for their tools in the dark (far less suspicious than a torch in the hedge). And because we think only of the light, we forget that the

brighter the light, the darker the shadow. Once a burglar can see where the light falls, he knows he is next to invisible in the shadows that surround it. The government agrees, its home security and crime reduction website stating that ‘harsh, glaring floodlights are not a deterrent to criminals’ and that most break-ins take place in daylight anyhow, when it is least likely there will be anyone in. As Dark Skies Bob Mizon comments: ‘It’s like a medieval superstition. Back then we hung garlic on our doorposts to ward off the threat of vampires. Now we hang lights from our roofs. They make us feel safer, but that’s all.’

Not that we are likely to start switching off the lights any time soon. In 2001, Blair’s New Labour published a report, *Open All Hours*, which laid out how our public services were to adapt to meet our new 24-hour lifestyles. From all night Tescos (where New Labour launched its first manifesto), to garages and soon public houses, the new ‘vision’ of Britain is to be a place where we can do what we want, whenever we want. No longer is it the Milky Way that flickers at night, but a thousand TV screens. We have replaced night stars with celebrity ‘stars’ in a world where people care more that they share the same star sign with Robbie Williams. than that thanks to light pollution many

The plan was to launch a billboard into space that would appear as big and as bright as the Moon

THE CAMPAIGN FOR DARK SKIES

The Campaign for Dark Skies (CfDS) was set up by concerned members of the British Astronomical Association in 1989, to counter the ever-growing tide of skyglow which has tainted the night sky over Britain since the 1950s. Usually the result of poorly aimed streetlights and floodlights emitting light above the horizontal into the sky, skyglow is nowadays increasingly a result of vastly over-powered, poorly mounted household security lights and literally “over-the-top” sports lighting. Since its inception the CfDS has grown into a network of over 120 volunteer local officers, and several hundred committed supporters, who work to persuade their local councils and organisations of the benefits of well directed lighting.

LIGHT POLLUTION

of us can now only see five of the 12 Zodiac constellations, while the other seven are all missing stars.

Where is it heading? In 1996, Space Marketing Inc, a company in Roswell, Georgia, announced its intention to launch a one kilometre wide billboard into space. The billboard was to be attached as a sponsorship mechanism to a so-called Environmental Space Platform for space experiments. It would have appeared as large and as bright as the Moon. While the proposal stalled, it is very much a sign of things to come as the world and its resources are sold off to the highest bidder.

Very rarely do we step back and ask ourselves: what have we lost? Michael Crichton, author of *Jurassic Park*, puts it well. 'The natural world, our traditional source of direct insights, is rapidly disappearing,' wrote Crichton in his journal, *Travels*. 'Modern city-dwellers cannot even see the stars at night. This humbling reminder of man's place in the scheme of things, which human beings once saw every 24 hours, is denied them. It's no wonder that people lose their bearings, that they lose track of who they really are, and what their lives are really about.'

The rhythm of life

The more we study life and the natural world, the more we learn that we are governed by it. Nowhere is this more true than in the circadian rhythms that define the ebb and flow of our life's processes. (Circa = about. Die = day). All living organisms, from bacteria to mankind, sleep and wake according to this regular 24-hour circadian rhythm. And not just sleep – immune function, hormone levels, digestion and urine production – they all display some sort of daily rhythm.

However, as well as ticking to an internal clock, we live in environment that is ever changing. The days get longer and shorter throughout the year, as the sun rises at a slightly different time each day. The main way we balance our internal clock with what is going on outside is through light. Mess with the light cues we receive and you imbalance our internal workings.

This may seem like common sense, but being the inquisitive humans

that we are, we've done all manner of weird experiments just to prove to ourselves what nature lets us know every time we wake up. The internal clock is located in a tiny area of the body called the superchiasmatic nuclei. So some scientists took a group of ground squirrels, normally active by day and asleep at night, and surgically removed their superchiasmatic nuclei. The now rudderless squirrels showed no regard for day or night and were often active and awake during the night. Unwittingly proving the importance of circadian rhythms, a wild cat broke into the compound one night and slaughtered most of the disorientated squirrels. Those in the control group with their nuclei still intact slept soundly through the whole affair.

A similar, though thankfully less invasive, experiment with humans shows how unnatural our daily life patterns are. The typical person working in a modern, industrialised society spends an unbroken 16 or more hours of each day awake and active, something only possible because of artificial lighting. Yet although we generally sleep in one eight or so hour burst, this is not what we are biologically programmed to do – most other species sleep twice or more during any given 24-hour period.

At the US National Institute of Mental Health in Maryland, researcher Thomas Wehr set up an experiment where a group of volunteers lived under conditions where it was dark for 14 hours a day and they were free to sleep as they wished, with no commitments in their waking hours. At the very beginning of the experiment, the subjects slept for long stretches of time, sometimes more than half the day, as they caught up on sleep lost during their normal day-to-day lives. Soon their patterns began to settle, and they were soon sleeping on average for eight and a quarter hours a day. As well as making them feel more awake when they were awake, their sleeping pattern also changed.

Within a matter of days, and without any prompting from the researchers, they began to sleep in two distinct periods. Once it was dark they would have a period of quiet rest lasting a couple of hours or so at the end of which they

would drop off, and then sleep for four hours, after which they would then naturally awaken, generally after a period of dreaming. They would then lie around in the dark resting for a further two hours, before dropping off again. When they finally awoke into the early morning they would lie and rest for a further two or so hours before getting up. This was not just because they were being lazy. When they did get up they were far more alert. The long periods of quiet repose allowed them time to contemplate, to reflect upon their dreams in the unhurried comfort of the dark. The darkness was not, as our dictionaries tellingly define it, just 'an absence of light', but a state in its own right with a purpose and benefits unavailable when it was light.

The fact that a group of typical American adults so quickly reverted to their natural biological sleep patterns is cause for hope. For where light pollution really does differ from other forms of pollution is in the ease with which we can make amends. There are no oil spills to clear up, no nuclear waste to wait millions of years to decompose, no pesticide residues in our system. At the flick of a switch, the pollution is gone. Across the world, cities such as Flagstaff in Arizona, regions such as Lombardy in Italy, and even whole countries such as the Czech Republic are beginning to implement measures to turn down the lights.

We're quite likely to get a chance to see what this future might look like this winter. According to an article in the *Evening Standard* this September, 'British industry is facing blackouts' this winter. If that happens, don't light a candle and sit inside quivering with fear as you wait for the looters to come breaking down your door. Just go outside and look up.

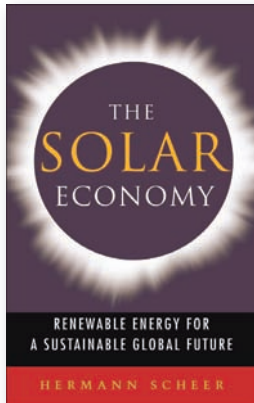
■ Jeremy Smith is *The Ecologist's* deputy editor

■ For more information go to www.darks-kies.org, where contact details for local officers are given along with fact sheets outlining the various problems and what you can do to help.

The website of the international Dark Sky Association, of which CfDS is a part, can be found at www.darksky.org. It has the most exhaustive sources of information on the topic on the internet.

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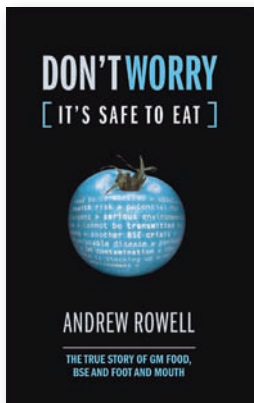
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By Andrew Rowell

An investigation of science, politics and our food production system, this book exposes the bogus science, political interference and flawed policies that threaten our food supply.

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Climate Change Begins At Home - life on the two way street of global warming

Dave Reay
Macmillan 2005

Charity is not the only thing that begins at home. Understanding is to, especially as to how political and social issues affect you. No issue seems bigger and yet often more distant – talk of 10 centimetre sea rises and two degree temperature rises over 100 years seems abstract, if not irrelevant. So too, debates over whether offshore wind is better than tidal power would seem best left to the experts. But when this issue is brought home, and people see how their own lives are affected and what they can do to make a difference, perhaps we will begin to sit up and take notice. That Reay has also written this book in such a light, wry, humorous and readable manner can only serve to help. For everything from understanding the effects of your food-buying choices to heating your home and driving your car, this is a great place to start.

Reviewed by Rufus Weston

A Life Stripped Bare: tiptoeing through the ethical minefield

Leo Hickman
Eden Project Books/The Guardian, 2005, £10.99

Can an ordinary man with an ordinary life transform this life into an ethical one? This was the challenge *The Guardian* set Leo Hickman, one of its journalists. Living in a London suburb with his wife and a young daughter, Hickman set out on his year-long journey towards a 'good life'. *A Life Stripped Bare* tells the story of the invasion of his home by ethical auditors and the long road to sustainability, plastered with washable nappies, 'green' holidays and cleaning the house with baking soda. Refreshing and funny, this book overflows with ideas for a more sustainable everyday life.

Reviewed by Seb Boscher

Into the Quick of Life: The Rwandan genocide survivors speak

Jean Hatzfield
Serpent's Tail, 2005, £12

In 1994, Hutu militia killed about 50,000 Tutsis out of a population of 59,000 in Rwanda. French journalist Jean Hatzfield interviewed 14 of the survivors, ranging from schoolboy to shopkeeper, in the particularly hard-hit region of Bugesara. The result is a report of experiences too horrific to be emotionally understood by outsiders. Nonetheless, Hatzfield has made a very successful attempt that leaves the reader deeply disturbed and moved. The terrors of this genocide must be known in order to prevent a repetition of the international community's failure to intervene.

This book should be on every schools' reading lists.

Reviewed by Sarah McCarthy

Deep Jungle

Fred Pearce
Eden Project Books, 2005, £18.99

The book follows a timeline from the arrival of westerners and their quest for El Dorado, the mysterious gold city, to today's destruction. It is a document of man's fascination with this abundant ecosystem and his desire to control and commercialise it. Stunning pictures of tropical wildlife, as well as human exploitation, complement the text and give a colourful insight into the beauty of earth's greenhouse and a powerful image of human destruction that all too often seems far away in everyday life.

Reviewed by Elaine Chang

Born to Buy

Juliet B. Schor
Scribner, 2004, £17.99

Researcher Juliet B Schor has compiled a frightening record of the marketing industry's influence on children. Although it is a well-known fact that children are keen on brands, Schor shocks by revealing that the average 10-year-old can recite 300 to 400 brands. The book is based on US data, and one can't help thinking 'surely in Europe it's not that bad?', but one also can't avoid a sneak suspicion that, in fact, it is. In fact, the content could scare any parent into locking their child up in a white-walled room to prevent it being exploited by evil companies. Overall, however, the message carried is an important one: parents have to spend time with their



children discussing the fact that the glossy image they see on the telly might not correspond to the real thing.

Reviewed by Seb Boscher

The Whole Hog: exploring the extraordinary potential of pigs

Lyall Watson

Profile Books, 2005, £8.99

Lyall Watson's loving description (new in paperback) of pigs and their properties could probably convert the most die-hard carnivore into a vegetarian

– or at least a non-pork eater. Sections devoted to particular species from around the world alternate with sections about 'the pig' itself: its social behaviour, its sense of smell, its eating habits, and so on. By the end of the book, it almost feels as though you know Watson's personal acquaintances intimately – Hoover from Africa, Babi from Indonesia, or Salsa from Mexico. And, just as in George Orwell's *Animal Farm*, they seem almost human.

Reviewed by Elaine Chang



BOOK OF THE MONTH

About time - Speed, society people and the environment

Greenleaf Publishing 2005, £xxx

One thing that unites all the disparate issues fought over by environmentalists, activists and those campaigning for a fairer world, though it is something we rarely discuss – is time. Industrial agriculture aims to make the production of food faster. Giant supermarkets make shopping faster. Packaged meals make cooking faster. Transport is about getting places quicker. The pursuit is of doing what was done before, but in less time. The promise was that if the job was done quicker, there would be room for leisure. The opposite is true; the job gets done quicker, leaving more room... for more jobs. Or fewer people are needed to do it, so more people are out of work. Not leisure – unemployment. To unemployment, add stress, cancer, obesity – these are the consequences of a world living ever faster. It takes a tree a hundred years to grow, but only seconds to fall to the ground. When we convert our forests into flat-pack furniture, we are abusing time as much as nature. The essays in *About Time* gather together some of the best thinkers on this subject to approach this issue from every conceivable angle. Philosopher Mary Warnock tackles the ethics of time. The Work Foundation's Will Hutton writes on time and money. David Boyle shows how concepts such as timebanks are beginning to re-evaluate the importance of the hours spent working, so that people working in traditionally low paid, but essential services can trade their time with others, thus enabling each to afford services they previously could not, showing that it is their time that is truly valuable. The Astronomer Royal takes the long view, reminding us that in a universe that ticks to planetary time we are but a blip. Jay Griffiths, author of the wonderful *Pip Pip - a sideways look at time*, calls for time to be made free and fluid once again and not constrained to the controlling mechanism of GMT.

We are all slaves of time. We wake the same hour every day. We work the same hours to enable us to take the same days off to watch the minutes tick away before we return to do it all again. *About Time* reminds us that it really is about 'time' we unchained our wrists and set ourselves free.

Reviewed by Sebastian Bosher

DVD OF THE MONTH

The future of food

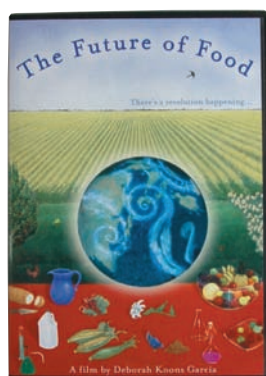
by Deborah Koons Garcia

Lily Films 2004

www.thefutureoffood.com

Travelling from the fields of Saskatchewan to the markets of Mexico, Deborah Koons Garcia tells the story of how agricultural production has changed over the last few decades, focussing primarily on the issue of genetically modified foods. What Garcia's film makes clear is that GM is about much more than whether the science is safe. It is as much a legal and political issue as a scientific one. In the past, farmers grew crops on their land and each year would save seeds to regrow crops next year. Good farmers would select seeds from crops that were doing well in order to promote the development of stronger strains of a particular food crop. Now four companies own almost all the world's seeds. Often they also own the pesticides sprayed upon the crops too. Using GM, they are redeveloping the seeds so that they are the only things in a field that can survive being sprayed with the pesticide you have to buy to grow the corn or the wheat. Meanwhile, they own the genes that the scientists in the laboratories are doing research on, they limit research that is not favourable, and their executives go back and forth between the doors of the companies and politics. Garcia's film tells this much-told story clearly, though without any great new insights.

Reviewed by Douglas Bebb





5 NOVEMBER

The 400th anniversary of the Gunpowder Plot, remembering Guy Fawkes – ‘the only man ever to enter Parliament with honest intentions!’

10 NOVEMBER

Tenth anniversary of the execution of the human rights activist Ken Saro-Wiwa. The Nigerian government’s decision to execute Ken and eight of his colleagues for campaigning against the devastating environmental impacts of oil corporations – especially Shell and Chevron – shocked the world and triggered a global re-evaluation of the impacts of corporate activity. Find out more about the life-long struggles of Ken Saro-Wiwa.

www.remembersarowiwa.com

11 NOVEMBER

GLOBAL SIT-OUT

The 11/11 Global Sit-Out is one day about accountability, spearheaded by the average citizen. There is no leadership behind this. There is no group or organisation behind this message. If you are frustrated by the state of the world today and your apparent powerlessness, then just stay at home, spend time with your family, friends, and loved ones, don’t drive anywhere, don’t buy anything, just enjoy the silence and the peace of mind. Pause and reflect. You can rejoin the rat race tomorrow.

25-27 NOVEMBER

BEYOND TV INTERNATIONAL FESTIVAL, SWANSEA

Screening the latest documentaries, short films and animations from the world’s best producers overlooked by mainstream broadcasters. Also features the inaugural MISTYS – The Media Activist Awards Ceremony.

www.undercurrents.org/beyondtv

27 NOVEMBER

BUY NOTHING DAY

Can you manage for just one day this year not to buy anything? Sounds stupidly easy, yet is liable to make you realise how locked in you are when you try.

23 NOVEMBER – 4 DECEMBER

NATIONAL TREE WEEK

Tree Council festival to mark the start of the tree-planting season, and a nationwide celebration of trees and woods. Across the country there will be lots of opportunities to plant trees, or to take part in events, walks, talks, songs, storytelling and tree dressing. To mark the 30th anniversary of National Tree Week, The Tree Council is inviting everyone to help make trees matter by planting and celebrating trees. To find out what’s on in your area go to:

<http://www.trecouncil.org.uk/ntw/NTWEventList2005.htm>

WEBSITES OF THE MONTH

To mark Buy Nothing Day, this month’s websites are all concerned with living more simply.

SEEDS OF SIMPLICITY

A forum promoting voluntary simplicity as an authentic social justice and environmental movement.

www.seedsofsimplicity.org

SIMPLE LIVING NETWORK

Provides tools and examples for those wanting to live a more conscious, simple, healthy and restorative lifestyle. Website features on-line newsletter, a database of Voluntary Simplicity study groups and circles, chat rooms and almost 3,000 resource pages dedicated to sustainable living.

www.simpleliving.org

THE SIMPLICITY RESOURCE GUIDE

Provides a wide spectrum of resources related to voluntary simplicity – a way of life that addresses the widespread yearning in North America and other western countries for a slower pace of life with more time for joyful relationships, fulfilling work, and living one’s dreams.

www.gallagherpress.com/pierce

ILLICHVILLE

An artist’s project to visualise a sustainable, car-free city in the heartland of America.

www.avidorstudios.com/l-home.html

PHOTOGRAPH COURTESY OF THE TREE COUNCIL

Your 32-page guide to ethical living

green pages

NOVEMBER IN SEASON...

Leeky welsh rarebit... Rabbit with cider leeks and cream... leeky haddock pie .. and a glass of Bullshot

ETHICAL CHRISTMAS GIFT GUIDE

Plant a rare tree... hang up a bee box... start your own wormery... and loads more inspired gifts for a toxic-, landfill-, and 'tat'-free Christmas

ONE MAN AND HIS PLOUGH

Monty Waldin drinks to Gerard Gauby and his fabulous horse

AAACHHOOOO!

Beat the bugs with these natural folk remedies



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Wine,
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70 November in season

As the nights grow slowly colder, and the ubiquitous sniffles and sneezes start, don't reach for branded, sickly cough medicines - indulge yourself with thick chicken soups, cinnamon and ginger tea... and if your throat's on fire, Honey and lemon or a salt water gargle.

72 November recipes

Gone are the sun loving crops, but here come the reassuring winter staples - cabbages, kale and above all leeks... which Hugh and Gill have woven throughout this month's recipes - leeky welsh rarebit; leeks vinaigrette; rabbit with cider, leeks and cream; leeky haddock pie - and finished off with a glass of bullshot.

76 Ethical Christmas guide

We apologise for mentioning Christmas in November, and we apologise for the ubiquitous Christmas gift guide.... BUT we desperately want to help you avoid last minute panic buying of 'landfill gifts' and 'toxic tat'. We fully endorse all the gifts and delicious food we've picked and hope that you find what you are looking for amongst these heroic small, independent, ethical producers.

82 Vineyard profile - Domaine Gauby

Over the past 20 years, Gerard Gauby has perfected the art of producing fine wines with old fashioned, chemical-free methods... foremost amongst which is his horse-drawn plough. It may take 10 times longer than a tractor but it doesn't damage the vines, compact the soil or pollute the air. No wonder his wines are exquisite.

90 ESSENTIAL DIRECTORY

Over 200 UK-based ethical businesses and organisations striving to supply the market with essential products and services that aren't costing us the earth. So, if you really do want to make a difference, don't shop in supermarkets / chain stores... shop here.

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NOVEMBER IN SEASON

Another month, another chance to discover the UK's finest fresh produce

Eat Now



VEGETABLES:

- Asian Greens
- Broccoli – headed
- Cabbage
- Cauliflower
- Celeriac
- Celery
- Garlic
- Jerusalem Artichoke
- Kale
- Leeks
- Lettuce
- Mushrooms
- Parsnips
- Potatoes
- Pumpkins
- Radishes
- Shallots
- Spinach
- Spring onions
- Swede
- Swiss chard
- Turnips
- Winter squash

FRUIT:

- Apples
- Currants

NOVEMBER FOOD FOR FREE

Chickweed: Usually regarded as a bane in gardens, this plant can be cooked with spring onions or used in winter and early spring salads. It is often freshest in late autumn or early in the year. The chickweed has oval, bright green leaves and small white star-shaped flowers with five deeply divided petals.

Rosehip: The fruit of the wild rose, the hip, is the only wild fruit that supports a nationwide industry: the production of rosehip syrup. It can be used as a flavouring for milk puddings and ice cream, or diluted as a drink. Be sure to remove all the prickly seeds, which can be a dangerous internal irritant. Rosehips have been found to be 20 times richer in vitamin C than oranges.

Rowan: A widespread tree, common especially in the north and west of the UK, it grows up to 20 metres tall and has a fairly smooth grey bark. Its fruit grows in large clusters of orange berries, which can be distilled or used to brew ale. However, they are best made into jelly, which goes particularly well with game or lamb.

Hazelnut: A small tree, or more often a multi-stemmed shrub, it grows abundantly throughout the British Isles. During Celtic times, the hazelnut was an emblem of concentrated wisdom. The nuts can be used chopped or grated in salad, muesli and bread or ground up in a blender, mixed with milk and chilled, to make an imitation of a Spanish drink called horchata.

Some Picking Rules

- Never strip a plant completely.
- Never take the flowers and seeds of annual plants: they rely on them for survival.
- Don't pull up whole plants.
- Avoid areas that may have been sprayed with insecticides or weed killer, as well as the verges of heavily used roads.

Source: *Food For Free* by Richard Mabey (Collins)



WILDFLOWERS TO LOOK OUT FOR IN NOVEMBER:

Winter Heliotrope: Its hairy stems grow up to 25cm tall and have vanilla-scented, lilac flowers which are bell-shaped with an outer ray of florets. Found on wasteland, hedge banks, roadsides and by rivers.

Field Madder: The plant has tiny pinkish-mauve flowers, which give small amounts of red dye. Its leaves are oval to spear-shapes with hairs around the edges, and it has a square, hairy stem. It is an annual of wasteland and cultivated land.

Hairy Bittercress: Common in gardens, on wasteland and between rocks it has tiny white, sweetly scented flowers grouped together in stalked clusters on a straight hairy stem. It has a sweet, mild peppery flavour and can be substituted for cress.

Oxford Ragwort: Having escaped from the Oxford botanical gardens in the late 1700s, it's been spreading readily ever since. It has slightly grooved flowering stems and grows up to 60cm tall. Its flowers are yellow with a disc and outer florets gathered in loose-branched clusters. Found on wasteland, walls, and alongside railways.

Red Campion: A popular garden plant with pink flowers featuring five deeply divided petals, gathered in loose branched clusters. Its leaves are hairy and pointed. Found in woodlands, hedgerows and hedge banks as well as in coastal areas.

Source: *Wild Flowers: an easy guide by habitat and colour* by Tracy Dickinson (Green Earth Books)



FOLK REMEDIES AGAINST THE COMMON COLD

Old wives' tales or not, they'll help your sneezes more than a trip to the chemist

Aaaachou! Oh no – it's that time of the year again: you trot into the office one morning and half your colleagues have called in sick. Your child comes back to school with its head glowing like a light bulb and a runny nose. And, before you know it, you've caught it too: the common cold.

At this point most people would head off to the nearest pharmacy to stock up on Lemsip, paracetamol and cough mixture. But think again: paracetamol reduces the fever and stops your body burning off the virus, and cough medicines simply suppress a cough and don't help the body to fight the virus. So if you'd like to ease the symptoms, whilst your body tackles the bug, try and few of these folk remedies.

CHICKEN SOUP: This little mixture combines several beneficial properties. First, there's the broth, which provides rehydration. The body loses lots of water through coughing, a running nose or feverish sweating which has to be replenished by drinking a lot or – eating soup. It's also hot, which helps loosen the mucus of a cough, and its steam helps against congestion. Chicken soup also often contains garlic, which has antibiotic and antiviral activities. Garlic is also an expectorant, which will help you to cough up phlegm. To make the most of its properties, use fresh cloves and squeeze them through a garlic crusher. For vegetarians, vegetable stock will do the trick as well.

INHALING STEAM: This works wonders on a clogged up nose, and it's as easy as pie. Just fill a pot with hot water and add a

couple of drops of eucalyptus oil. Then use a big towel to trap the steam, crawl under it and breathe deeply. Being stuck under a towel with your head over a steaming bowl might look a little silly, but it helps. Instead of the eucalyptus oil, chamomile can also be used. You should be able to get dried chamomile flowers in a health food shop – they're also great for tisane when your tummy is upset.

HONEY AND LEMON: A great soother of sore throats. Honey has a soothing thickness and makes swallowing easier. It can also literally act as a 'honey trap' for bacteria, making it more difficult for them to move around. Lemon stimulates the production of saliva, which makes swallowing less painful and, of course, contains lots of valuable vitamin C. If you want the full 'honey trap' and vitamin C effect, just mix lemon

juice with honey and lick it off the spoon. Or, if you prefer the soothing effect of a hot drink, make your own homemade Lemsip – guaranteed to be cheaper than the artificial stuff from the pharmacy! Squeeze a lemon and just add honey and hot water. The only drawback is that you'll lose some vitamin C because of the heat.

CINNAMON AND GINGER TEA: Cinnamon bark contains a chemical called cinnamaldehyde that kills off bacteria. It is also a fever reducer and has anti-inflammatory properties. The spicy ginger helps wash out mucus and is good against fever and chills. For a cinnamon and ginger chai-type of tea, cut up about two inches of fresh ginger, add one piece of dried cinnamon bark and a pinch of cardamom. Boil for 10 minutes and leave for another 10 minutes. The result might

be quite spicy, so add milk and honey as you prefer.

GARGLING WITH SALT WATER: Salt has disinfecting properties, so helps against the infection. A more short-lived effect is that if your solution is strong enough, the salt water will attract some of the water that has caused the swelling of the mucosa in your throat. For this to happen, the solution has to be saltier than your own bodily fluids, so use two teaspoons to one pint of water. You can also use this to rinse your nose, which might not be the most pleasant feeling, but it does help congestion.

SEASONAL RECIPES FOR NOVEMBER

As thoughts of Bonfire Night and long autumnal walks return, **Hugh Fearnley-Whittingstall** and **Gill Meller** invent new twists on some hearty seasonal favourites.

For me, November is a meat month. This is not so much because vegetables are in decline – the sun-loving summer crops may be over, but many fine things such as leeks, cabbages and kale are at their sweetest and best right now. It's partly because my boat usually comes out of the water at the beginning of the month for a rest-up and a bit of winter maintenance. It's a poignant moment – a reluctant acknowledgement that the long carefree days of summer are gone for

another half a year.

However, what really makes this month meaty are pork and game. We always kill our remaining pair of pigs in November and set about creating our winter supply of hams, bacon, salami, and other charcuterie. It's a hugely satisfying seasonal ritual that marks the transition from the fish and veg-heavy late summer months to the carnivorous and comfort-seeking habits of the winter kitchen.

As for game, I find a big part of the pleasure comes from a powerful and unbreakable link between the killing and the eating of what I kill. Shooting a bird, whether you do it with a blowpipe, an arrow or a shotgun, is a test of skill. Succeeding in such an endeavour, whether you're an Amazonian Indian, a peer of the realm, or a Dorset smallholder, can give a great feeling of satisfaction. And part of that is because what you have taken has value – as food.



FRENCH ONION TART

(serves six)

This is an absolute classic, which I have been cooking for years. It seems to come into its own around autumn, although it's good at any time of the year. It makes a great standby dish, as the ingredients often seem to be knocking about in the kitchen, but I'd happily serve it to honoured guests, too.

My version is based on Elizabeth David's recipe in French Provincial Cooking, and the only liberty I have taken is to add a little grated Gruyère.

Ingredients: For the pastry: 100 grams of butter; 200 grams of plain flour; salt; cold water. For the filling: One kilo of onions; 50 grams of butter; one tablespoon of olive oil or sunflower oil; grated nutmeg; three egg yolks; 200 millilitres of double cream; 100 grams Gruyère cheese; black pepper.

How to make: Make some savoury shortcrust pastry, line a 20–23 centimetre loose-bottomed tart tin with it, then line with greaseproof paper, add baking beans and bake blind for about 10 minutes.

If you need help with that the easiest pastry recipe I know is also Elizabeth David's: rub 100 grams of butter into 200 grams of plain flour and a pinch of salt. Add

just enough cold water to bring the mixture together and press it straight into a tart tin, using your hands and fingertips, without even rolling or chilling. Line with greaseproof paper, fill with clay baking beans (or actual dried beans) and cook for about 15 minutes at 180°C/Gas Mark 6. Then remove the paper and beans and return the pastry case to the oven for five to 10 minutes to dry out the sweaty surface. The resulting pastry is superbly short, crumbly and delicious. Peel and very finely slice the onions. Heat the butter and one tablespoon olive or sunflower oil in a large pan and add the onions. Cook very gently, tossing or stirring regularly, without allowing the onions to catch on the pan or turn brown. After about half an hour they should be golden, translucent and completely tender. Remove from the heat and season with a good pinch of salt, a little grated nutmeg and a few twists of black pepper.

With a fork, beat together three egg yolks and 200 millilitres of double cream. Finely grate about 100g Gruyère cheese. In the pan, if you like, or in a mixing bowl, combine the onions with the cheese and the egg and cream mixture. Spread evenly into the pre-baked pastry case and put into a fairly hot oven (190°C/Gas Mark 5) for about half an hour, until the filling is lightly puffed and golden. Serve piping hot from the oven.

LEEKY WELSH RAREBIT

(serves four to six)

A good Welsh rarebit is so much more than just cheese on toast. It's quick-fix comfort food of the highest order, and a great dish with which to confront a cold snap. It's an easy recipe to improvise once you get the knack, but worth having fixed quantities to get you started. The addition of leeks is optional but very delicious, and makes more of a meal of it. And it also helps to make sense of the Welsh sobriquet.

Ingredients: Two leeks; 50 grams of butter; 50 grams of plain flour; 300 millilitres of hot beer (bitter or

pale ale, but not lager); 150 grams of mature Cheddar; English mustard; Worcestershire sauce; black pepper; six thick slices of bread; two leeks (optional).

How to make: If you fancy the leeky option, wash and finely slice a couple of leeks and sweat them in a little butter and oil for about 10 minutes, until tender but not coloured.

For the cheese mixture, melt 50g butter in a small saucepan over a low heat, then stir in 50g plain flour to make a thick roux. Cook for a couple of minutes, stirring to prevent the roux burning. Stir in 300ml hot beer (bitter or pale ale, not lager) by degrees, until you have a very thick, smooth sauce. Add 150g mature Cheddar, grated, and stir until melted. You should now have a thick paste. Season well with a blob of English mustard, a good splash of Worcestershire sauce and a few twists of black pepper. Now stir the leeks into the mixture if you're using them. Lightly toast six thick slices of bread, then pile up the cheesy mixture on each slice. Flash under a hot grill for a few minutes, until browned and bubbling.

LEEKS VINAIGRETTE

(serves four as a starter)

An old-fashioned and absurdly simple recipe that I include simply because, although we eat leeks by the ton, the dish that shows them at their youthful sweet and tender best rarely gets made.

Ingredients: 12 to 16 young leeks; English mustard; half a teaspoon of sugar, one tablespoon of cider vinegar or white wine vinegar; three tablespoons of olive oil; salt and black pepper.

How to make: Trim and wash the leeks. Leave them whole, slicing part way down the green tops to help you rinse out any grit. Steam or blanch them for six to eight minutes, until tender, then drain thoroughly and lay them in a warmed dish in which they fit quite snugly in a single layer. In a jam jar with a lid, shake together one good teaspoon of English mustard, half a teaspoon of sugar,

one tablespoon of cider or white wine vinegar, three tablespoons of olive oil and some salt and black pepper until thick and emulsified. Pour this dressing all over the leeks while they are still warm and leave them to cool in it, turning them occasionally so that they are well coated. Serve with soft brown bread.

BULLSHOT

This wintry version of the Bloody Mary is a great way to tackle a hangover. You will need a litre of good, strong beef stock. Taste it, and if it isn't good and beefy, boil to reduce until the flavour is right.

Ingredients: One litre of strong beef stock, 200 millilitres of vodka; one tablespoon of tomato ketchup; 50 millilitres of dry sherry; Worcestershire sauce; Tabasco; lemon juice; black pepper.

How to make: Stir the vodka into the hot beef stock, add the tomato ketchup and dry sherry, then season with Worcestershire sauce, Tabasco, lemon juice and black pepper, tasting as you go. Serve straight away.

GILL'S RABBIT WITH CIDER, LEEKS AND CREAM

(serves six to eight)

Ingredients: two large skinned, jointed rabbits; 200 grams of diced bacon; two leeks; four cloves of garlic; 500 millilitres of good local cider; 500 millilitres of double cream.

How to make: In a large, heavy based casserole sautee the diced bacon until the fat renders. Lightly season the rabbit joints and add them to pan. Cook until the rabbit takes on a golden colour on all sides. Remove the rabbit and the bacon from the pan and set aside.

To the same pan, add two leeks (washed, split in half, and sliced), four cloves of garlic (sliced), and soften over a medium heat for five minutes. Then add the cider, double cream, the rabbit joints and the bacon. Bring to a very gentle simmer, and cook for one to one and a half hours, until the rabbit is tender and coming away from the bone.

CRAZY JACK
ORGANIC

THE FIRST FAIR-TRADE HIMALAYAN ORGANIC BASMATI

Choosing this quality rice directly aids the farmer and his community. Farmers receive an independently determined fair price for the product and a social premium that is invested in locally nominated community projects. Buying organic also helps to:

- ★ Reduce the use of petroleum-based fertilisers,
- ★ Reduce the use of pesticides, and
- ★ Encourage biodiversity



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www.crazyjack.co.uk

The dish is now ready to serve, although you do have the option to remove the rabbit, turn up the heat, and reduce the sauce. This will result in a slightly thicker, more intense sauce, that can be spooned over the rabbit, but this process is by no means necessary.

Serve with creamy mashed potato.

GILL'S LEEKY, SMOKY POLLACK OR HADDOCK PIE

(serves four)

This dish is the perfect autumn/winter comfort food. You can add as many leeks as you like. They make the dish.

Ingredients: a 500 to 800 gram side of home-smoked pollack or natural-smoked haddock; two to four leeks, split, washed and sliced; four free range eggs; 125 grams butter; 75 grams of flour; 250 millilitres of milk; 150 millilitres of double cream; salt and pepper; four largish potatoes, peeled; a small bunch of parsley plus the stalks; bay leaves

How to make: Place the fish in a suitably sized pan with the milk, a couple of torn bay leaves and the parsley stalks. Bring to the simmer; just as it starts to simmer remove the fish. It will be cooked.

In a separate pan melt the butter. Add the leeks and allow them to soften in the butter. Add the flour to the leeks and butter and mix well. Cook this roux gently for one minute. Strain the milk onto the leeky roux and stir until smooth. Add the cream and cook for another five minutes. Boil and mash the potatoes. Boil, shell and quarter the eggs. Separate the fish from the skin, leaving it in fairly large chunks if you can.

Combine the fish and eggs with the leeky sauce. Season with salt, pepper and chopped parsley.

Spoon the filling into a pie dish and

top with the mashed potato. Lastly, use a fork to rake the top. Bake in a medium oven for 30 minutes until golden and crispy on the top.

GILL'S LEEK AND POTATO SOUP

Ingredients: The whites of four leeks sliced – about 500 grams in total (save the green tops for a stock); 300 grams white sliced potatoes; two cloves of garlic; 50 grams butter; one and a half litres of vegetable, chicken or fish stock; 250 millilitres of cream; salt; freshly ground black pepper; a small bunch of chives.

How to make: Leeks can often be gritty, so they need washing well. Do this by splitting each leek from tip to tail and run each half under the cold tap making sure to rinse them well up around the tops. You can remove the outer layer if necessary. Slice the leeks. Peel and slice the potatoes to about five millimetres thick, peel and slice the garlic cloves.

Put a soup pan on a medium heat, add the butter and allow it to foam. Add the prepared vegetables to the pan. Cook until soft (about 10 to 15 minutes), but not coloured. Add the stock (a good fish stock works particularly well here) to the soup base. Bring to the boil and simmer for 10 minutes until potato is cooked.

Puree soup well until smooth and creamy. I find that jug blenders are the best tool for this job. Return the soup to the pan and add the cream, salt, pepper and chopped chives. Bring the soup gently back to the simmer.

Serve with buttered bread and slabs of cheese, or iced, like a classic vichyssoise with half a dozen oysters on the side.

■ For details about what's going on at River Cottage HQ, plus information on River Cottage Products and Food, log onto www.rivercottage.net. If you want to be kept up to date with new events and courses, why not sign up to our River Cottage newsletter? Click here <http://www.rivercottage.net/maillinglist.jsp> to sign up.

PIZZA OF THE MONTH

Starting this month, Hugh and Gill recommend a monthly seasonal pizza recipe.



Pizza has become a bit of a staple here at River Cottage with the advent of our new home-made clay oven, and I'm always being nagged by the team to rustle up a quick pizza or two for their lunch. Luckily with all lovely vegetables in the River Cottage garden, I've got endless choices to keep them quiet.

Pizza is a fantastic way of giving kids a healthy meal without them actually realising it (which is half the battle), and what better way of getting them interested in cooking than dividing a pizza up into sections so that they can add their own favourite toppings?

Try not to add too many ingredients to your pizza – simplicity is best – and you'll never get bored of trying out different combinations. In this series I'm going to give you some great 'home-grown' recipes so that you can use your own garden produce.

We've recently built our own traditional wood-fired oven and we've been having a baking frenzy – artisan breads, including sourdough, rye and baguettes, pizza of course, and other goodies, all of which you can come and learn how to make on our new 'Build and Bake' course. It is a day course, starting at 9am with a short walk to find and dig local clay, followed by everyone getting their feet dirty mixing the muck. By lunchtime the oven will be built and the afternoon will be spent making dough, shaping loaves and baking bread. You will receive an information pack on how wood-fired ovens work; how to build one and how to bake bread in it. We will also include all the recipes from the day, refreshments and an informal lunch. The day will end at around 6pm, with loaves for everyone to take home.

Find out more

For further information on the 'Build and Bake' course, please go to www.rivercottage.net and select River Cottage Events.

PIZZA BASE

(makes enough dough to serve six)

Ingredients: 500 grams of flour; 300 millilitres of water at body temperature; 10 grams of fresh yeast or 5 grams of dried yeast; 10 grams of salt; two tablespoons of olive oil.

How to make: Find the right bowl to make your dough in. It needs to be big enough to incorporate all the ingredients (once found, it will always be useful).

Combine the yeast with the warm water in the bowl, let the yeast dissolve. To this add 50 grams of plain flour. Set the bowl aside in a warm place. After 20 to 30 minutes the yeast should have formed a sponge. Add the flour, salt and olive oil to the bowl.

You can now place the mixture in the bowl of a food processor fitted with a dough hook. Alternatively roll up your sleeves and knead it by hand for 10 to 15 minutes on a lightly floured work surface.

Lightly grease the bowl with olive oil and return the dough to it. Cover with a damp tea towel and allow the dough to rise for two hours. Knock the dough back and allow it to rise for a further 30 minutes.

Divide the dough into two, three or four individual balls depending on how many pizzas you wish to make. Roll each ball out on a floured work surface to a thickness of three or four millimetres. Transfer to a baking tray and top as desired.



THIS MONTH'S SEASONAL PIZZA TOPPING

ROAST BEETROOT, ANCHOVIES AND THYME

I really rate beetroot. Its fantastic colour and taste make it one of our most unique root vegetables. It has a rich, earthy depth of flavour and is silky smooth to eat. Boiling beetroot is good, but I think roasting it is better. You can roast them skin on or skin off, whole or cut into wedges. Garlic, thyme and olive oil are a must. This combination works well as a warm salad, with some boiled eggs or sirloin steak, but also makes a fitting winter pizza topping.

Ingredients: Five or six medium sized beetroot; olive oil; three or four cloves of garlic; thyme leaves; anchovies; mozzarella; salt; pepper

How to make: Take the beetroot, and peel and cut them into wedges. Throw them into a roasting tin with a few tablespoons of olive oil. Slice the cloves of garlic and add them to the pan along with a generous scattering of thyme leaves.

Season well with salt and pepper. Roast in a hot oven until soft and crispy round the edges (30 to 40 minutes).

Scatter the roast beetroot over your pizza base, tear over some decent mozzarella and six or so anchovies, or salted pilchard fillets.

Season with salt, pepper and a few more thyme leaves.

Lastly spoon over any roasting juices left over from cooking beetroot. Cook on the bottom shelf of a hot, hot oven until the cheese is melted and the base is crisp and browned.

YOUR *ethical* CHRISTMAS GIFT GUIDE



LUXURY ORGANIC CHRISTMAS PUDDING WITH BRANDY

With secret recipes passed down from mother to daughter, curious rituals involving antiquated coins being inserted into the mix, and a serving ritual steeped as much in brandy as legend, the noble Christmas pudding is as much a focus of the day as the turkey. Suitable for vegetarians and hand made to a family recipe in Gloucestershire these luxury Christmas puddings have won numerous awards. A 900g pudding costs £9.25, a 450g pudding £6.25 and a small 225g one just £3.85.

The Natural Grocery Store
 142 Bath Rd, Cheltenham, GL53 7NG
 TEL 01242 243737



ORGANIC AND ADDITIVE FREE TURKEY

Organic £11.55 per kg
Additive Free £8.45 per kg

If Graig Farm was a holiday camp for turkeys – it would be fully booked all year round. The turkeys are reared in small groups, allowing them to establish a natural ‘pecking order’ and have constant daytime access to pasture. No need for drugs as the birds are fit and healthy... which is probably what makes them so delicious to eat.

For those on a tight budget, we suggest you try the ‘additive free’ turkey. These have been reared identically to the ‘fully organic’ birds but the grain they are fed is not organically grown, and is therefore cheaper. Whatever you choose you’ll know your Christmas dinner lived a happy life.

www.graigfarm.co.uk
 Tel 01597 851655

OILS

Mellow Yellow Rapeseed Oil – Farringtons £3.99

Toplou Extra virgin Olive oil – £5.08 for 500ml

If you are a vegetarian, or just fancy something a little lighter (over Christmas lunch?) then roast the potatoes and parsnips in Mellow Yellow’s rapeseed or Toplou’s olive oil.

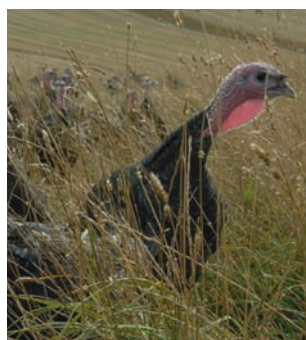
www.ecofair.co.uk Tel 01604 621531



FREE RANGE ORGANIC TURKEY

£ 11.50 per kg

When you sit down to your traditional turkey on Christmas Day you can rest assured that if it came from Sheepdrove Organic Farm, it lived a long, happy and healthy life – in the great outdoors.



Sheepdrove’s organic, free-range, slow-growing Norfolk Bronze turkeys are beautifully moist and deeply flavoured, with finely grained, densely textured meat.

www.sheepdrove.com
 tel 01488 71659



STOLLEN AND CHESTNUTS

Room for some cake after dinner? Somehow there's always space for one more course. These delicious organic stollen are available from Organico for £8 for 750g. And if you've still room, munch on some organic chestnuts (open fire not included) for £2.75 for 200g. The site also features a wide range of biscuits, sauces, condiments and other mouthwatering treats, from some of the finest organic producers around.

www.organico.co.uk
Tel 0118 923 8760

VINTAGE ROOTS

Whether its rich red wines, delicate whites, traditional English bitters or an organic Bloody Mary, Vintage Roots deliver a huge range of wines right to your door.

www.vintageroots.co.uk
tel 0800 980 4992



CHOCOLATE

various prices

From their factory in rural West Sussex, The Chocolate Alchemist produce some of the finest handmade organic Belgian chocolate confections around. Founded in 2003, the company has since won numerous awards. Its chocolates combine the rich, indulgent taste that so much mass produced chocolate has lost these days with a forward thinking, environmentally conscious approach that puts them way ahead of most of their competitors. As well as a range of chocolate bars the company's spectacular drinking chocolate mix – made from flakes of the finest dark or milk chocolate - is as good as it gets.

www.thechocolatealchemist.co.uk
Tel 01798 860995

HAMPERS - ORGANIC / FAIR TRADE / LOCAL PRODUCE



GOODNESS DIRECT

Choose whether you want an organic, special dietary needs or chocaholic hamper, and then select the products you want from your chosen range.

www.goodnessdirect.co.uk
Tel 0871 871 6611



SWADDLES

Different sized Xmas hampers depending on the number of people you have coming for lunch. One designed for 4-6 people costs £149.00 and has everything in it you'll need.

www.swaddles.co.uk
0845 4561768



ZONKER

Packed in a willow box, the Zonker luxury hamper costs £120 and contains all manner of delicious delicacies from wines to chutneys and jams.

www.zonker.co.uk
0131 558 1136

GREEN PAGES CHRISTMAS GIFTS



BADGERS SOOTHING BALMS

£10.00

This decorative box contains a travel sized tin of Sore Muscle Rub, Healing Balm, and Sleep Balm. All the balms are made of entirely natural ingredients to keep your skin as healthy as possible.

www.beautynaturals.com Tel 0800 980 6662



ERNA THE HEN

£14.99

Give your child a friend for life! Lana's superb range of adorable soft toys made with 100% natural materials are available from online store Hejhog. Erna the hen (pictured) is 25cm tall and made of 100 per cent organic cotton and natural filling. The company also stocks organic clothes, bed linen and soaps, to help keep your child safe and comfortable day and night.

www.hejhog.co.uk
Tel 0845 606 6487



TREE IN A BOX

£ various prices

Give a gift for life with a purchase from Ashridge Trees, a long established business specialising in elegantly-packaged trees from 30 species suitable for any garden, patio or conservatory. Each tree comes with a greeting card, tag and planting information. For every tree purchased, 50p is donated to the Tree Council. A 2.4-2.75m sweet chestnut costs £24.68 and a similar sized weeping willow is £20.

www.ashridgetrees.co.uk
Tel 01963 359444



RED BASEBALL TOP

£22.00

All Terramar's clothing is made with 100 per cent organic cotton and produced under fair trade conditions. They sell caps, t shirts and hoodies for both men and women, in a variety of colours and designs.

www.terramar.co.uk
Tel 079293 71684

PLANT A MANGROVE TREE

£14.99 for 2 seedlings

One of the reasons the Tsunami that struck last Boxing Day did so much damage was because so many of the regions mangrove forests that provided a natural barrier to incoming waves had been cut down – mainly to make way for industrial shrimp farms. Not only are mangroves a very effective barrier to waves, they also make good quality charcoal, and provide timber for house and boat construction and for fishing net supports. They also provide nurseries for fish, havens for wildlife and are a useful source of traditional medicines. Buy 2 mangrove seedlings for £15 from the International Tree Foundation to plant in the Tamil Nadu region of southern India and they will provide a card/ certificate stating what has been purchased, for whom and what it hopes will be achieved.

www.internationaltreefoundation.org
Tel 0870 7744269



CAN O WORMS WITH VALUE PACK

£89.00

Recommended as the ideal start-up system this wormery includes the Can-O-Worms housing and a generous supply of composting worms to help make your composting go smoothly. In fact it's all you need to start successful composting. The worms are despatched in special packaging to ensure they reach you fit and ready to go.

www.wigglywiggles.co.uk
Tel 0800 216 990

GARDENING BOOK & SEEDS

£ 7.00

Out of print for almost 40 years, *Gardening without digging* is a seminal work on Organic gardening. Together with two packets of seeds, this is guaranteed to turn any friend or family member into a champion vegetable grower. And yes – as the book suggests – this really is gardening without digging. A valuable lesson in how using compost with undug soil is the best way of growing vegetables there is – after all that's how nature's been doing it for ever.



Pinetum Products Tel 01452 750 402

BUMBLE BEE NESTER

£15.99

The Bumble Bee Nester is constructed from thick durable timber (Cedar/Larch). It is important that nesting bees are kept dry. There is a hinged roof which can be opened to reveal an internal viewing window. The box comes supplied with dry nesting material. The nester should be sited low down in a hedge or wall in a sheltered south facing position.

www.ecotopia.co.uk
Tel 014537 52345



GREEN PAGES CHRISTMAS GIFTS



BASKET FUNICULAR

£13.90

Consists of two stations around which the support cable runs.

The baskets are fastened to this cable and are moved by winching at either of the stations. This is just one of a wonderful range of wooden toys available from Myriad Toys. No plastics, no computer screens, just imaginatively conceived and beautifully crafted traditional toys.

The wood used in the company's products comes from European forest plantations, is indigenous, and the by-products are either recycled or used for heating. The colours used are water-based and the finish is of natural oil blends or shellac.

www.myriadtoysonline
01725 517085

BACKPACKERS ESSENTIAL TRAVEL BAG

£24.95

A beautiful hemp zip bag containing many of the essentials for backpackers: a click pack of Arnica 30c; 50ml bottle of organic echinacea tincture; 10ml bottle of lavender essential oils; 15g arnica & ginger balm; 15g mint foot cream; 15g propolis cream; and 15g shea body butter.

www.earthbound.co.uk
Tel 01597 851157



SILK SHIRT

£21.95

In 1985 a Fairtrade Workers' Co-operative was set up to create employment in the South Indian village of KV Kuppam and to strengthen the village's long link with Bishopston in Bristol, where the company has one of its five shops.

As well as organic handwoven cotton, their clothes are also made of noil silk, denim and lighter

weight cotton – all produced by a team of 168 cutters, tailors, hand finishers and craft workers. All profits are used to benefit the people of KV Kuppam.

www.bishopstontrading.co.uk
Tel 0117 924 5598

'PREMIER' FAIRTRADE FOOTBALL

£17.90

Fairly Traded balls have four main characteristics to distinguish them from other footballs:

- The stitchers receive a wage which is calculated in such a way that two earners can provide a family with all basic necessities without having to send children to work, too.
- All stitchers and other workers of the supplying company receive medical care
- The Fair Trade premium also covers a micro credit scheme, to help reduce the exclusive dependency of stitchers on the production of balls.
- One part of the Fair Trade premium is also used to improve the working conditions, in particular lighting and ventilation.

sidhji.airugi@BURG.ARGUAIRG

www.fairdealtrading.com
Tel 0870 7665196





DANCING ELEPHANT EARRINGS

£15.00

If you love elephants then these are an absolute must have. These gorgeous dancing elephant earring are handcrafted in Kenya and are made from silver. They come in two pieces so that the head and legs move independently. All products come direct from the producers and you will be directly helping support local crafts people get out of poverty and allow them to support their families. 15% of all sales are re-invested into development projects within the local producers communities.

www.gofair.co.uk
Tel 01200 417 112



FREEPLAY SUMMIT WINDUP RADIO

The Freeplay Summit is the ideal radio to take away travelling with you, whether for just a weekend or several months. By day its solar panel charges the battery and if it runs down at night it can be recharged using the wind up mechanism. As well as doing away with the need for batteries (with all the associated problems regarding their disposal) this FM/MW/LW/SW radio is an excellent way of introducing children to benefits of renewable power, while also opening their ears to a world of entertainment away from the playstation or television. Most good independent hi-fi shops should sell these radios (If you are based in London try Audio Gold).

www.audiogold.co.uk
Also www.naturalcollection.com

LUXURY WILD BIRD HAMPER

£29.95

A wonderful assortment of treats to encourage birds into your garden this winter. The box contains a giant refillable log feeder filled with fat and seed mix, a seed feeder, a refillable natural pine cone feeder filled with vegetarian fat and seed mix, metal spiral (which can also be used as a bird feeder afterwards) with wool for nest building, a snug roosting nest pocket and a garden bird guide.

Tel 0870 331 3333
www.naturalcollection.com





DOMAINE GAUBY

In just 20 years, Gérard Gauby has perfected the art of producing fine wines with old fashioned, chemical-free methods.

BY **MONTY WALDIN**

You can find plenty of French winegrowers whose conversion to organics or biodynamics resulted from injuries or illnesses they claim to have sustained from using synthetic chemical vineyard sprays: for example, the paralysis of an optic nerve by an anti-mildew spray, bronchial disorders from mixing chemical fertilisers and skin irritations from contact with glyphosate weedkillers.

Gérard Gauby, the star winegrower in France's Roussillon region, on the border with the Pyrenees mountains, said his conversion came not from what chemical sprays were doing to him so much as what they were doing to local wildlife.

'I remember using a soil fumigant in 1990 to clean up the soil in a vineyard

we were about to replant, to remove any potentially noxious soil fungi or soil bacteria that might attach itself to the vine roots,' he tells me. 'The next day I returned to this vineyard and saw hundreds of dead birds lying there. I could no longer justify putting such things in the soil and then selling the wine to the public. It made no sense.'

Gauby, a short, stocky, almost swarthy man in his mid-forties, had a fine pedigree as far as Roussillon is concerned, where rugby rather than wine is the most passionately followed local activity. Gauby's grandfather played for the French national rugby team, and Gérard sees him as an inspiration not merely for his exploits on the rugby field.

'I remember grandad used to work

the vines by horse,' Gérard says. 'We only started making our own wines in 1985 [previously the Gauby family's grapes went to the local cooperative], but after the move to more organic methods from 1990 we also tried to get back to more traditional ways of farming. So we now have horses ploughing our oldest vineyards. We have a full-time employee, a former livestock farmer called Robert, and his job is just to look after the animals and to use them to plough weeds out. You could remove weeds with a chemical weedkiller, but this destroys the soil. You could also do it with a tractor-mounted plough, which involves making just one pass along each vine row. With the horse and a harrow you have to go up and down the same vine row five times. It takes around four hours to plough one hectare [2.47 acres], 10 times longer than with the tractor. But the advantage of the horse is that you are less likely to knock over vines, killing them, but more importantly the soil does not compact as a horse weighs less than a tractor.

'When the soil becomes compact the vine can no longer feed itself as its roots cannot breathe. If they can't eat, they get weak and invite attacks from diseases and insects. Organic methods are all about prevention rather than cure, so if we can remove the risk of the vines picking up diseases, we remove the need to have to spray insecticides or fungicides. Plus, the other advantage of using horses to keep the soil friable rather than compact is less soil erosion. In our Mediterranean climate, when the topsoil is too compact it is much more likely to erode with the intense sun or the strong mistral wind or when we get sharp bursts of rain.'

Gérard continues, 'Also, if the soil is compact the vine roots cannot breathe so they must rise up to near the topsoil surface. We want our vine roots to go down as deep as possible, however,' says Gérard, 'so that they are really in contact with the very complex subsoils we have here in our village.'

The village is called Calce, and it lies on a geological faultline caused when the Pyrenees collided with the Corbières mountains a few hundred million years ago. This was like two flat hands pushing towards each other and going palm to palm in the soil, making a highly fragmented and varied soil structure, especially in Calce.

'The pressure of these two mountain ranges bumping into each other means Calce has lots of different soil types, like marne-rich limestone, iron rich clay, schist, all mixed up, even within just a few feet of each other. These give very different tastes and textures to the grapes if the vine roots are feeding healthily deep down in the subsoil. Limestone makes the wine fresh in texture with a crisp core of acidity for white wines and really fine-grained fruit for reds. Iron-rich clay gives deeper colours and a wild, leathery quality to reds, while schist gives complex reds of great width and power. Sometimes the soils are so complex here even we don't know what to expect from the grapes, but the important thing is to allow the vine to express itself. Having a deep root system

is the only way of achieving this.'

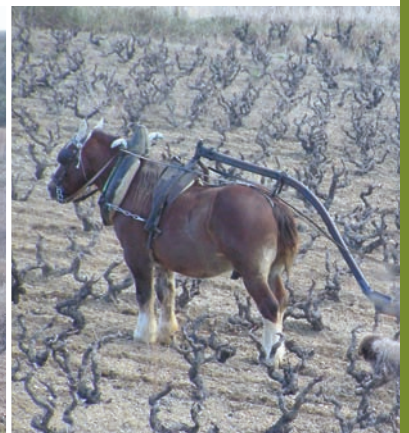
Herbal teas are used frequently, made from plants like chamomile, borage, nettle and dandelion. Their dried foliage and flowers are soaked in water, which is then gently warmed for a few hours (overnight, usually) and the resultant infusion is sprayed on the vines and the vineyard soil. 'They bring

vital trace elements like zinc, magnesium and boron, like a vitamin supplement almost. They are especially useful on vineyards that we have bought or rented and that were farmed using weedkillers,' says Gerard. 'The herb teas are one way of nursing them back to health, giving them food they may not have had for many years because the vine's tongue, its roots, was

being poisoned by weedkillers and so it could find the goodness in the soil.'

Vineyard acquisition is something of a Gauby speciality. 'We have 45 hectares of vines and another 45 hectares of fallow land. We want to have as much biodiversity as possible, not just a vine monoculture. So, for example, we may be offered three small vine plots to buy, one healthy and two with a virus problem. We would immediately rip the vines from the two plots with the incurable virus as they will always be susceptible to diseases and we don't want to have to keep spraying them. We would just let this land return to wild scrub, and nurse the remaining vine plot until it was good enough for

The next day I saw hundreds of dead birds lying in the vineyard. I could no longer justify putting such chemicals in the soil



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our best wine labels, changing its diet from quick-release chemical fertilisers and weedkillers to slow-release compost and herbal teas, and gentle ploughing with the horses. That's another advantage of having animals, they give the best manure for compost.'

Respect here for insects is paramount, for as well as leaving as much natural habitat as there are farmed vineyards, insects like ladybirds which are on the grape bunches at picking are collected and put back in the vineyard. 'They are great predators of harmful insects like vine leafhoppers,' says Gérard.

Winemaking is fairly straightforward, with minimal use of new oak barrels. 'We prefer using barrels that are two or three years old. We want the wines to taste of grapes, not of oak planks,' says Gerard. Gravity and lunar cycles are used as much as possible when racking and bottling wines. 'We reduce our need for electricity,' says Gerard, 'and by racking wine off the yeast deposits at a new, as opposed to a full, moon it means the wines are less cloudy and we can bottle wines with minimal filtration.'

Rain and waste water from the winery is collected in a purpose-built underground tank and used for mixing vineyard herb teas. It is also used for watering the olive, oak and cork trees the Gaubys now plant as wildlife habitat breaks along the edge of their vineyards, for insects and especially for birds who, just 15 years ago, would have had no good reason to come to Domaine Gauby.



DOMAINE GAUBY

Gérard & Ghislaine Gauby: La Muntada, 66600 Calce

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RECOMMENDED WINES

WHITE WINES

Three dry white wines are made under the Côtes du Roussillon Blanc AC or as Vin de Pays des Côtes Catalanes.

Domaine Gauby 'Les Calcinaires Blanc'

Sprightly dry white blend of grapey Muscat and earthier Maccabeu which avoids the oiliness of old style Mediterranean whites, opting for gentle minerality instead.

Domaine Gauby 'Vieilles Vignes Blanc'

Dry white with an insistent, buttery texture made from old vine Maccabeu, creamy Grenache Blanc, grapefruity Grenache Gris.

Domaine Gauby '[La] Coume Gineste'

Dry white from mainly Grenache Blanc, with a generous pinch of Grenache Gris. The mouthwatering, salty aftertaste signifies vines in deep contact with the subsoil.

RED WINES

Three red wines are made under the Côtes du Roussillon Rouge AC (Appellation Contrôlée), and all come from a blend of Grenache Noir (soft black fruit), Carignan (earthy, leather texture), Syrah (perfumed raspberry fruit) and Mourvèdre (powerful-bodied black fruit).



Domaine Gauby 'Les Calcinaires Rouge'

Crisp, light to medium bodied, mouthwatering red from younger vines or parcels of older vines that the Gaubys have just taken on, but which viticulturally are not up to the par of the Vieilles Vignes of Muntada cuvées.

Domaine Gauby 'Vieilles Vignes Rouge'

This comes from a range of the Gauby's best vineyards. Fermenting some of the red grapes as whole, rather than crushed, berries gives this powerful red intense but not overpowering fruit.

Domaine Gauby 'La Muntada'

From a selection of the best terroirs, overwhelmingly from marne-based ('marnes-calcaires' and 'marnes-schistes') which the Gaubys value most highly of all. Made from 55-60 per cent Carignan Noir & Grenache Noir & Mourvedre + 40-45 per cent Syrah. Aged in wooden ovals and barrels, with never more than 30 per cent new wood. Dense, mouthcoating yet uplifting fruit.

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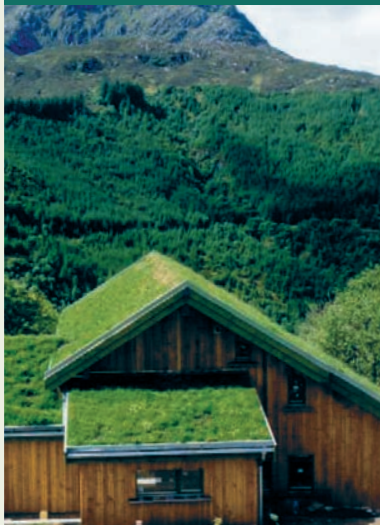
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Origin.....	01326 340 320

The Tea and Coffee Plant.....	020 7655 4574
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SPIRITS

Juniper Green Organic Gin.....	01483 894 650
The Organic Spirits Company.....	01483 894 650

ORGANIC SPIRITS

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

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

TEA

Clipper Teas.....	01308 863 344
Eleven O' Clock Tea.....	01635 278 648
E-Teas.....	0800 849 4039
Hampstead Tea and The Coffee Co.....	020 8731 9833
Hehlis Holistics.....	020 8660 7954
Nothing But Tea.....	0123 485 3855
The Tea and Coffee Plant.....	020 7655 4574

WINE

Pennard Organic Wines & Cider.....	0174 986 0393
Sedlescombe Organic Vineyard.....	0800 980 2884
The Organic Wine Company.....	01494 446 557
Vinceremos.....	08001 0073086
Vintage Roots.....	0800 980 4992

FOOD

The following all supply delicious organic food. If we've missed someone you think is an organic food hero, please email us their details at editorial@theecologist.org

DAIRY

BUTTER & CREAM

Yeo Valley.....	01278 652 243
Rachel's Organic Dairy.....	01970 625805

CHEESE MAIL ORDER

Bath Soft Cheese.....	01225 331 601
Birdwood Farmhouse Cheesemakers.....	01452 750248
Caws Cenarth Cheese.....	0123 971 0432
Daylesford Organic.....	01608 731 700
Godminster Vintage Cheese.....	0174 981 3733
H.S. Bourne.....	01948 770214
Llanboidy Cheesemakers.....	01994 448303
Llanglofan Farmhouse Cheese.....	01348 891241
Loch Arthur Creamery.....	01387 760296
Staffordshire Organic Cheese.....	01782 680366

CHEESE PRODUCERS

Alhamwood Cheeses.....	01749 880 221
Caerfai Cheeses.....	01437 720 548

ICE CREAM MAIL ORDER

September Organic Dairy.....	01544 312 910
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MILK PRODUCER

Classic Organic – flavoured milk.....	01691 650450
Daylesford Organic.....	01608 731 700
Manor Farm Organic Milk Ltd.....	01300 341 415
Rachel's Organic Dairy.....	01970 625805
Yeo Valley.....	01278 652 243

YOGHURT

Rachel's Organic Dairy.....	01970 625805
Yeo Valley.....	01278 652 243

FISH

ORGANICO
0118 951 05118
www.organico.co.uk

FLOUR

Dove's farm.....	01488 684880
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FOOD BUYING COOPERATIVE

True Foods Community Co-op.....	0845 3308272
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**FRUIT & VEGETABLES
(BOX SCHEMES)**



'I can't sign up to a box scheme because I'm never in to receive it.' Have you considered...

- 1 ...arranging a late delivery?
- 2 ...getting it delivered to a neighbour?
- 3 ...having it delivered to your local newsagent/ chip shop, etc?
- 4 ...arranging for the provider to hide it somewhere?

BEDFORDSHIRE

Bedford
David Catlin.....01525 861 452

BERKSHIRE

Reading
Ellis Organics0118 9722826
Organico0118 951 0518
Tolhurst Organic Produce.....0118 9843 428

BUCKINGHAMSHIRE

Wendover
Fieldfare Organic and Natural ...0845 601 3240
Buckingham
Right 2 Know01280 822 050

CAMBRIDGESHIRE

Cambridge
Waterland Organics01223 812 912
Royston
Guilden Gate Smallholding01763 243 960
Wisbech
Organic Connections International01945 773 374

CHESHIRE

Chester
Organicfair01244 400 158
Lymm
Cheshire Organics01925 758 575
Malpas
Oakcroft Organic Gardens01948 860 213
Northwich
Stockley Farm Organics01565 777 492
Sale
The O Zone0161 291 8862
Warrington
Northern Harvest0845 602 3309

CORNWALL

Saltash

A & N Health Foods.....01752 844 926
St Agnes
Tree Of Life Organics.....01872 552 661
St Austell
Cotna Organics.....01726 844 827
St Martins-by-Looe
Keveral Farmers.....01503 250 135
Truro
Hendra Farm Organics01872 572 301

CUMBRIA

Brampton
Eva Botanicals.....01697 741 906
Lady Jane's Tea Room07941 731 255
Grange over Sands
Howbarrow Organic Farm01539 536330

DERBYSHIRE

Ashbourne
Meynell Langley Organic Food...01332 824 815
New House Organic Farm01335 342 429
Adams, Nick.....01335 360 996
Chesterfield
The Organic Stores.....01244 881 209
Derby
Organic Pumpkin01332 370 254
Glossop
The Green Box company.....01457 856 843
Matlock
Beano's Wholefoods.....01629 57130
New Mills
The Organic Shop01663 747 550

DEVON

Barnstaple
Lugg Smallholding01598 710 558
Beaworthy
Earthstar, Little East Lake Farm...01409 221 417
Holsworthy Organics.....01409 221 417
Bideford
Marshford Organic Produce01271 322 855

Bovey Tracey
Yarner01364 661 503
Buckfastleigh
Riverford Organic Vegetables0845 600 2311
Crediton
Linscombe Farm01363 84291
Exeter
Shillingford Organics01392 832 729
RodandBens01392 833 833
Elder, D01392 860 856
Great Cummins Farm01647 61278
Ilfracombe
West Hill Farm01271 815 477
Kingsbridge
Alan's Apple.....01548 852 308
Newton Abbot
Dartmoor Direct Co-Operative...01364 631 528
Woodland Organics01803 813 760
Nature's Round07810 127 376
Pyworthy
Ceridwen Herbs01409 254 450
Tavistock
Tamar Organics01822 834 887
Tiverton
Ms Kate Palmer01884 861 269

DORSET

Bournemouth
Bourne Organic.....01202 778 516
Blandford Forum
Gold Hill Organic Farm.....01258 861 413
Bridport
Bothen Hill Produce01308 424 271
Dorchester
Longmeadow Organic Vegetables....01300 341 779
Ferndown
Sturts Farm Community01202 870 572
Pulham
Cannings Court Organic Farm...01258 818 035
Wimborne
Long Crichelel Organic
Walled Garden.....01258 830 295

DURHAM

Darlington
Acorn Dairy.....01325 466 999

ESSEX

Brentwood
Legg, RG.....01277 211 883
Halstead
Organic Choice01787 478 471
Ongar
Ashlyns Organic Farm01277 890 788
Fair Organics.....01277 890188

GLOUCESTERSHIRE

Cheltenham
Slipstream Organics01242 227 273
Dursley
Better For Organics01453 545 090
Lydney
La Bodega01594 844 841
Newnham on Severn
Campmill Village Trust.....01594 516 344
Tetbury
Bowldown Farms Ltd01666 890 224
Thornbury
Thornbury Organic Co-op.....01454 415 345
Wotton Under Edge
Whitfield Farm Organics.....0845 283 0232

GREATER MANCHESTER

Chorlton-cum-Hardy
Chorlton Wholefoods.....0161 881 6399
Mossley
Mossley Organic And Fine Foods01457 837 743
Stockport
Limited Resources0161 477 2040
Whalley Range
Glebelands Market Garden Ltd..0161 718 5328

HAMPSHIRE AND ISLE OF WIGHT

Andover
Naturally Health Foods.....01264 332 375
Clanfield
Naturally Organic.....023 9236 0196
Heckfield
Park Farm Organics.....0118 932 6650
Lymington
Warborne Organic Farm.....01590 688 488
Southampton
Sunnyfields Organic023 80871408
Whitchurch
Laverstoke Park Produce01256 890 900

Harroway Organic Gardens.....01256 895 346

HEREFORDSHIRE

Bodenham
Butford Organics.....01568 797195
Hereford
Biosphere Organics01432 820 082
Green Acres Organic Growers01568 797 045
Abundance Produce.....01981 540 181
Kingstone
Arkstone Mill Produce.....01981 251 135

HERTFORDSHIRE

Potters Bar
Everybody Organic Ltd.....01707 651 243
Watford
Farm2door01923 490 526

KENT

Ash
Ivy House Farm01304 812 437
Belvedere
Regent Health.....01322 446 244
Canterbury
Brockman, AG & Co.....01227 732 001
Ripple Farm Organics01227 730 898
Cobham
Luddlesdown Organic Farms Ltd.01474 813 376
Gravesend
Dabbs Place Organic Farm01474 815 393
Horsmonden
Simply Wild Food Company08456 586 141
Ightham
Church View Farm.....01732 886 680
Tunbridge Wells
Organic Health Shop, the.....01892 538 155
Wingham
Wingham Country Market01227 720 567

LANCASHIRE

Nelson
The Wholefood Depot Ltd01282 606 500
Lancaster
Growing With Grace01524 251 723
Ormskirk
Gielty, A&D01695 421 712
Preston
Growing with Nature01253 790 046
Flintoff, Libby01995 679 728

LEICESTERSHIRE

Barkby Thorpe
Picks Organic Farm Shop0116 2693 548
Countesthorpe
Bambury Organic Farm0116 247 8907
Loughborough
Manor Farm.....01509 646 413
Lutterworth
Naturally Good Food01455 556 878
Sapcote
Watts, DA01455 272 840
Thurmaston
Corner Plot Vegetables.....0116 2697 920

LINCOLNSHIRE

Barrow on Humber
Wheelbarrow Foods.....01469 530 721
Boston
Woodlands Farm.....01205 722 491
Grantham
Goodacre, JM & A.....01476 860 228
Spalding
Sadd, BM.....01945 440 388
Spilsby
Eden Farms01790 763 582

LONDON

EC2
The Organic Delivery Company ..020 7739 8181
E5
UK5 Organics.....020 8806 0721
N4
Just Organic.....020 7704 2566
N7
Bumblebee.....020 7607 1936
SE10
Greenwich Organics.....020 8488 6764
SE2
Abel & Cole.....020 7737 3648
SE6
Capricorn Organics020 8306 2786
SE8
UK5Organics.....020 7237 7277
SW3
Here.....020 7351 4321

DIRECTORY GREEN PAGES

SW8
Food Ferry Company, the020 7498 0827
W12
The Fresh Food Co.....020 8749 8778

MERSEYSIDE

Thurstaston
Church Farm Organics.....0151 648 7838
Liverpool
Organic Direct.....0151 7076 949
Windmill Wholefood Co-op.....0151 7341 919

MIDLANDS, WEST

Birmingham
Organic Roots.....01564 822 294
Coventry
Down to Earth.....02476 677 500
Solihull
Hopwood Organic Farm.....0121 711 1187

NORFOLK

Attleborough
Arthur's Organic Deliveries.....01953 887 582
King's Lynn
Abbey Farm Organics.....01485 609 094
Norwich
Stable Organics.....01263 577 468
Barker Organics.....01263 768 966
Paradise Organics.....01508 494 260
The Greenhouse.....01603 631 007
The Green Grocers.....01603 250 000
Salle Moor Hall Farm.....01603 879 046
Eostre.....01953 789 000

NORTHAMPTONSHIRE

Daventry
Goodness Direct.....08718 716 611
Kettering
Arcadia Organics.....01536 525 298
Milton Keynes
Organic Trail.....01908 568 952
Northampton
Leafcycles.....01604 628 956

NORTHERN IRELAND

County Down
Burrenwood Produce.....02843 771 844

NORTHUMBERLAND

Alnwick
Rock Midstead Organic Farm.....01665 579 225
Bedlington
North East Organic Growers.....01670 821 070
Berwick Upon Tweed
The Green Shop.....01289 305566
Corbridge
Cropped Up.....07947 856 641

NOTTINGHAMSHIRE

Bingham
Farmshop Home Delivery.....0800 169 7009

Cossall
Trinity Farm.....0115 944 2545
Nottingham.....
Roots Natural Foods.....0115 960 9014

OXFORDSHIRE

North Aston
North Aston Organics.....01869 347 702
Chipping Norton
Chipping Norton Organics.....01608 642 973
Sarsden Organics.....01608 659 670

SHROPSHIRE

Craven Arms
Organic By Order.....01588 660 747
Dawley
Food For Thought.....01952 630 145
Oswestry
Doggart, A.....01691 652 166
Shrewsbury
Boxfresh Organics Direct.....01952 770 006

SOMERSET

Bath
Norwood Farm.....01373 834 856
Truuly Scumtious Organic
Baby Food Ltd.....01761 239 300
Bridgwater
IYB Partnership.....01278 733 080
Bristol
Barleywood Walled Garden.....01179 351 725
Leigh Court Farm.....01275 375 756
Langport
Park Lane.....01458 252 901
Lower Claverham
Arcadia Organics.....01934 838 634
Milverton
Spring Grove Market Garden.....07956 429 531
South Petherton
Flaxdrayton Farm.....01460 241 427
Somerset Organic Link.....01460 241 427
Taunton
Prockters Farm Shop.....01823 413 427

STAFFORDSHIRE

Stafford
Bella Herbs.....01785 663 868
Grove Farm Organics.....01785 780 252
Stoke-On-Trent
The Real Food Company.....01270 873 322

SUFFOLK

Beccles
Jim Cooper Vegetables.....07866 960 706
Bury St Edmunds
Longwood Farm.....01638 717 120
Eye
Daganya Farm.....01379 668 060
Ipswich
Hillside Nurseries.....01473 652 682
Newmarket
DJ Produce Ltd.....01638 552 709

Saxmundham
Swallow Organics.....01728 668 201

SURREY

Cranleigh
Sunshine Organics.....01483 268 014
Redhill
Greener Greens.....01737 766 792
Worplesdon
Horti. Halcyon.....01483 232 095

SUSSEX

Barnham
Willow Nursery.....01243 552 852
Brighton
Real Food Direct.....01273 621 222
Chichester
Wayside Organics.....01243 779 716
The Whole Food Shop.....01243 790 901
Hartfield
Beans and Things.....01273 477 774
Harvest Supplies.....01342 823 392
Lewes
Barcombe Nurseries.....01273 400 011
Landsdown Health Foods.....01273 474 681
Mayfield
Heron's Folly Garden.....01435 873 608
Midhurst
Down to Earth.....01730 815 133
Plumpton
Ashurst Organics.....01273 891 219

WARWICKSHIRE

Atherstone
Mythe Farm Organic Produce.....01827 712 367
Leamington Spa
Gaia.....01926 338 805
Long Itchington
Reality Bites Organic
Market Gardens.....07780 688 271
Rugby
The Wholefood Shop.....01788 567 757
Wild & Free.....01788 570 400
Warwick
Warwick Health Foods.....01926 494 311

WILTSHIRE

Charlton
Green Cuisine.....01666 824 584
Chippenham
The Organic Experience.....01249 720 274
Tallywacker Farm.....01249 750 035
Swindon
Barker, DI & AM.....01793 770 219
Coleshill Organics.....01793 861 070
Warminster
Pertwood Partners.....01747 820499
Yatesbury
Yatesbury Organics.....01672 539 191

WORCESTERSHIRE

Pershore
Oxton Organics.....01386 860 477

YORKSHIRE, EAST

Driffield
Green Growers.....01377 255 362
Hull
Arthur Street Trading Co.....01482 576 374
Slater Organics.....01964 527 519
North Cave
HNP Direct.com.....01430 425 531

YORKSHIRE, NORTH

Cowthorpe
Goosemoorganics.....01423 358 887
Kirkbymoorside
Farnedale Free Range Ltd.....01751 430 323
Northallerton
Low Leases Organic Farm.....01609 748 177
Robinson, DS.....01609 772 032
Richmond
Hazelbrow Organic Farm.....01748 886 224
Farm-A-Round.....020 7627 8066
Bluebell Organics.....07759 832 234
Tadcaster
The Organic Pantry.....01937 531 693
Whitby
First Season.....01947 601608
Pasture Cottage Organics.....01947 840 075
York
Yo Aspin Organics.....01439 771 848

YORKSHIRE, SOUTH

Sheffield
Beanies.....0114 2681 662
Down To Earth.....0114 2685 220

YORKSHIRE, WEST

Hebden Bridge
Valley Garden Organics.....01422 846 651
Huddersfield
Half Moon Healthfoods.....01484 456 392
Natural Choice.....01484 513 162
Leeds
Love Organic!.....01132 663 030
Pontefract
Brickyard Organics.....01977 617 327
Shipley
Bradford Wholefoods.....01422 202 648
Wetherby
Goosemoor Organic Produce.....01423 358 887

SCOTLAND

Aberdeen
Lembas.....01569 731746
Ardrrossan
Wildly Organic.....01294 472075
Armadae Pier
Rubha Phoil Forest Garden.....01471 844700
Birkhill
Bee Organic.....01382 581186
Cupar
Bellfield Organic Nursery.....01337 860764
Dumbarton
Epo Growers.....01389 875337
Edinburgh
Grow Wild.....0131 443 7661
Damhead Organic Foods.....0131 448 2091
Glasgow
Roots & Fruits Wholefoods
& Organics.....0141 3393097
Glendale
Glendale Salads.....01470 511349
Inverness
Tio Ltd.....01667 462189
Macleod Organics.....01668 462555
Inverurie
Croft Organics.....01467 981717
Kirriemuir
Angus Organics Ltd.....01575 540294
Kyle of Lochalsh
Raasay Walled Garden.....01378 660345
Newmacher
Ward, Colin, J.....01651 862041
Pencaitland
East Coast Organic Boxes.....01875 340227
Perth
Bellfield Organic Nursery.....01738 850589
Stonehaven
Fraser, J & M.....01569 730195
Tarbolton
Stair Organic Growers.....01292 541369
Tarskavaig
Achnaich.....01471 855315
Turriff
Greeness Organics.....01888 544877

WALES

Anglesey
Foreman, Helen.....01407 742 293
Bangor
Dimensions Health Store.....01248 351 562
Brecon
Beacons Vegi Boxes.....01874 636 785
The Ciliau.....01874 711 224
Builth Wells
The Ciliau.....07887 656 887
Caerphilly
Source, the.....029 2088 3236
Cardiff
Pulse Wholefoods.....02920 225 873
Spice of Life.....02920 487 146
Green Cuisine.....02920 498 721
Clunderwen
Ffynnon Farm.....01437 532 570
Deeside
Organic Stores.....01244 881 209
Haverford West
Sarra, Mr & T.....01437 762 323
Monmouth
Irma Fingal-Rock.....01600 712 372
Carrob Growers.....01600 714 529
Pwllheli
Ty'n Lon Uchaf.....01766 810 915
Llangybi Organics.....01766 819 109
Swansea
Jade Gate Organic Produce.....01792 232 643



MEAT

WHERE DO YOU GET YOUR MEAT?



Might there be a different way of buying meat that works well for you, that could guarantee better quality and give you a cleaner conscience? Could you buy locally, buying direct from the people who actually farm the animals that

produce the meat? Or could you use a butcher who can tell you where all his or her meat comes from, and get special things for you when you want them?

BOX DELIVERY

BERKSHIRE

Lambourn
Sheepdrove Organic Farm01488 71659

CAMBRIDGESHIRE

Ely
Naturally Yours.....01353 778 723

CORNWALL

Cusgarne
Cusgarne Organics.....01872 865 922

Penzance
Vivian Olds Ltd.....01736 788 520

Truro
Carleys of Cornwall.....01872 277 686

Mewton PG01872 540 343

Nuncarrow Organic Farm.....01872 540 343

Tywardreath
Stoneybridge Organics01726 813 858

CUMBRIA

Carlisle
Whiteholme Farm01697 748 058

Grange-Over-Sands
Howbarrow Organic Farm01539 536 330

DERBYSHIRE

Ashbourne
Nix Organix.....01335 360 996

DEVON

Exeter
The Organic Farmers Market.....01392 875 678

Holsworthy
Providence Farm Meats.....01409 254 421

Kingswear
Fountain Violet Farm01803 752 363

Okehampton
Fishleigh Estate.....01837 810 124

Umberleigh
Higher Hacknell Meat.....01769 560 909

DORSET

Beaminster
Childhay Manor Organics01308 868 709

GLOUCESTERSHIRE

Berkeley
Adeys Farm Meats01453 511 218

LONDON

Ealing
Thorogoods of Ealing.....020 8567 0339

Notting Hill
Lidgate.....020 7727 8243

MIDLANDS, WEST

Birmingham
Rossiter, S & A.....0121 4581 598

NORFOLK

Norwich
Harveys Puremeat.....01603 621 930

NORTHUMBERLAND

Hexham
Northumbrian Quality Meats01434 270 184

OXFORDSHIRE

Wantage
Real Farm Foods Ltd.01235 762 461

SOMERSET

Exmoor
Brown Cow Organics.....01749 890 298

Shepton Mallet
Hindon Organic Farm.....01643 705 244

Bath
Radford Mill Farm01761 479 572

Taunton
Stoneage Organics.....01823 432 488

SUFFOLK

Woodbridge
Red Poll Meats.....01728 748 444

SURREY

Shere
Drydown Farm07941 277 545

Wintney
Organically Speaking01483 531 319

Bramley
Wintershall Partnership01483 892167

SUSSEX, WEST

Billingshurst
Steepwood Farm.....01403 785 434

WARWICKSHIRE

Rugby
Browning, GNF & GA.....01926 632 246

WILTSHIRE

Swindon
Purton House.....01793 770 219

YORKSHIRE, EAST

Driffield
Barmston Organics01262 468 128

SCOTLAND

Perth
Hugh Grierson.....01738 730201

WALES

Clyro
Clyro Hill Farm01497 820520

MAIL ORDER

Daylesford Organic.....01608 731 700

Graig Farm Organics.....0159 785 1655

Higher Hacknell Farm.....0176 956 0909

Meatshop.....0122 857 7329

Natural Good Food01455 556878

Save the Bacon0160 469 6859

Sheepdrove Organic Farm0148 871 659

Swaddles0845 456 1768

The May Highland Beef.....0157 042 3080

The Organic Beef Company0148 866 8429

The Real Meat Company.....0198 584 0562

Traditional Norfolk Poultry0195 349 8434

Well Hung Meat0845 230 3131

FASHION

GENERAL

And Albert01482 863 068
Bishopston Trading Company.....01453 766 355
Chandni Chowk.....01179 300 059
Cloths Works01225 309 218
Daily Bread Co-Operative01604 621 531
Epona01914 151 201
Ethical Wares01570 471 155
Ford Barton01398 351 139
Ganesha London.....020 7928 3444
Garthenor01570 493 347
Gossypium01273 488 721
Green Fibres0845 330 3440
SEE ADVERT ON PAGE 85
Grounded020 7503 0279
Hemp Union01482 225 328
Hug.....0845 130 1525
Isle of Mull Weavers.....01681 700 265
Marlo Clothing.....01736 753 254
Myriad Organics.....01584 872 665
Natural Collection.....0870 331 3333
Natural Dye Company.....01258 840 549
One World Shop01312 294 541
Organic Attire Co020 7924 3345
Patagonia0033 450 88 44 44
People Tree020 7739 0660

Schmidt Natural Clothing.....0845 345 0498
Shared Earth01904 632 896
Siesta01227 464 614
Spirit of Nature0870 725 9885
Spurriergate Centre.....01904 629 393
Texture.....020 7241 0990
Terramar Organics.....07929 371684
Treehouse TLC.....01970 625 116
Traidcraft.....01914 911 001
World of Difference.....01788 579 191

SHOES

Birkenstock020 7240 2783
Ethical Wares01570 471 155
Fairdeal Trading0870 766 5796
Green Shoes01803 864 997
Vegetarian Shoes01273 691 913

T-SHIRTS

Equop0117 953 9991
FunkyGandhi.com07979 993 533
Howies.....01239 614 122
Terramar Organics.....07929 371684
THTC020 8630 9001
Tonic T-shirts07838 250 749

FUNERALS

COFFINS

Eco Coffins.....01303 850 856
Greenfield Coffins01440 788 886

FUNERALS

Alternative Funerals0800 197 0401
Arka.....01273 746 011

Celtic Casket.....01283 521 104
The Funeral Company Ltd01908 225 222
Green Endings020 7424 0345
The Natural Death Centre0871 288 2098
S. Stibbards & Sons01702 558 717
Sawd Partnership.....01795 472 262
Somerset Willow Co.....01278 424 003
Willow Weave.....01953 887 107

GARDENS



ALL PURPOSE

British Eco.....0191 209 4161
Natural Collection.....0870 331 3333
Organic Gardening
Pinetum01452 750 402
The Catalogue0845 130 1304
Tamar Organics.....01822 834 887
The Green Shop.....01452 770 629

COMPOSTING

Blackwall01132 018 000
Dorset Hills Organics.....02392 691 913
Enviromulch01215 254 326
Fertile Fibre01584 781 575
Globe Organic Services Ltd0800 018 4120
Humus Wyse01803 834 687
KPS Composting Services.....01444 831 010
Original Organics Ltd01884 841 515
Pinetum01452 750 402
The Bin Company.....0845 6023 630
The Composting Association.....0870 160 3270
The Recycle Works01254 820 088
The Worm Hotel01606 592 145
Wiggly Wigglers01981 500 391
Wonder Worms01422 831 112

FENCING

Evalast Fencing Systems Ltd.....01772 687 779

FERTILISERS

Glenside Organics Ltd01786 816 655
Greenvale Farms Ltd01677 422 953
Growthanic Ltd01380 871 050

Pinetum01452 750 402

GARDEN FURNITURE

Duchy Originals.....020 8831 6800
English Hurdle.....01823 698 418
Pendlewood.....01617 894 441
Re-Form Furniture01209 711 581
Wayfarer Products.....01924 492 300

NURSERIES AND GARDENS

Butterworths' Organic
Fruit Nursery01290 551 088
Ryton Organic Gardens02476 303 517
Walcot Organic Nursery01386 553 697

PEST CONTROL

Agralan01285 860 015
Defenders Ltd01233 813 121
Scarletts Plant Care.....01206 240 466

POTS AND SUPPORTS

Panda Stix.....01623 648 200
Stakepots.....01246 261 798

SEEDS

Association Kokopelli Organic
Seeds01227 731 815

WATER TREATMENT

Green Ways01962 761 600
Pinetum01452 750 402
Raindrain Lt01924 468 564

HEALTH & BEAUTY



You can absorb up to two kilos of chemicals through toiletries and cosmetics each year. So throw away all your toxic beauty products and choose these ones that are kind to your body as well as the environment

COSMETICS & BEAUTY TREATMENTS

- Avea870 1999 219
- Aveda8000 747712
- Barefoot Botanicals0870 220 2273
- Beauty Without Cruelty01229 775185
- Beauty Naturals0800 980 6662
- Dr. Hauschka Natural Skin Care .01386 792 622
- Earthbound Organics01597 851157
- John Masters Organics01874 730 979
- Lavera01557 870 203
- Mybeingwell.com01326 377555
- Organica J01330 850257
- Primavera Aromatherapy01373 812640
- Suvarna Pure and Natural Cosmetics01695 728286

DEODORANT

- Anne Elise Natural Skincare01304 374 594
- Body Organics0870 870 8586
- Dr. Hauschka Natural Skin Care .01386 792 622
- PitRok Ltd0208 5631120
- Weleda0115 9448200

MENSTRUAL PRODUCTS

- Natracare01275 371 764
- Menses0117 9851646
- The Mooncup01273 673845

SOAPS

- Caurnie Soaperie0141 776 1218
- Heihog0845 606 6487
- Simply Soaps01603 720 869
- The Soap Kitchen01805 622944

- Woodspirits0208 2934949

SUN PROTECTION

- Aubrey Organics1-800-282-7394
- Dr. Hauschka Natural Skin Care .01386 792 622
- Ecolani1-800-625-5240
- Neal's Yard020 7498 1686
- Yaoh0117 9239053

TOILETRIES

- Akamuti0845 4589242
- Ascent01497 847788
- Beauty Naturals0800 980 6662
- Body Organics0870 870 8586
- Bio-D Company Ltd01482 229950
- Caurnie Soaperie0141 776 1218
- Cioccolatina01189473178
- Comfort and Joy01367 850278
- Creightons Naturally Plc01903 745611
- Dolma0115 9634237
- Dr. Hauschka Natural Skin Care .01386 792 622
- Essentially Yours01372 465 414
- Earthbound Organics01597 851157
- Faith in Nature0161 7642555
- Farrow and Humphreys Ltd01780 482400
- Greenfibres0845 330 3440
- Green People01444 4011444
- Hemp Garden01288 355572
- Honesty Cosmetics01629 814 888
- John Masters Organics01874 730 979
- Lavera01557 870 203
- Mariposa Alternative Bodycare01273 242925
- Mother Earth01229 885266
- Mybeingwell.com01326 377555
- Naturisimo.com020 75847815
- Neal's Yard020 7498 1686
- Nirvana Natural01494 880885
- Organic Blue020 84248844
- Organic Botanics01273 773182
- The Organic Health Shop01892 538155
- Potions and Possibilities01394 386161
- Primavera Aromatherapy01373 812640
- Pure Nuff Stuff01736 366008
- Pure Potions01273 555 123
- Right 2 Know01280 822 050
- Simply Nature01580 201687
- SoOrganic.com0800 1692579
- Spiezia Organics Ltd0870 8508851
- There Must be a Better Way0118 9479352
- The Organic Pharmacy020 73512232
- Think Natural0845 6011948
- Twinkle Twinkle0118 934 2120

TOOTHPASTE

- Green People01444 4011444
- Kingfisher Toothpaste01603 630484

HOLIDAYS

The following holidays have all been recommended to us by friends and family. We hope you enjoy them as much as they did, and if you know of any other places that Ecologist readers might enjoy please email editorial@theecologist.org

THE ECOLOGE

A simpler way to relax! A wonderful break from the real world. Freedom for children. Magic moments. Great Hospitality. Somewhere precious.

Www.internationalbusinessschool.net/eco-lodge.
gclarke@internationalbusinessschool.net Tel;01205 870062/870396

WITH THE MOUNTAINS OF MOURNE

Above and organic vegetable fields below: two self catering wings of a newly built farmhouse, sleeping four each, both apartments boast huge conservatories....and spiral staircases. Glimpse the sea. Nr Newcastle, Co Down.

02843 770241
www.burrenwood.com



HOME

From ingenious, easy-to-fit water-saving devices, to reclaimed building materials: everything you'll need to renovate and clean your home without harming the environment is in these listings

ENERGY

- ELECTRICITY: suppliers**
- Ecotricity08000 326 100
- Good Energy0845 456 1640
- Green Energy0845 456 9550
- Generation**
- Dulas Ltd01654 705 000
- Green Dragon Energy01654 761 731
- Rainbow Solar Trading01983 533 129
- Sustainable Energy Installations.01256 392 704
- Wind and Sun Ltd01568 760 671
- EFFICIENCY: Energy saving**
- Eco-Exmoor Ltd01598 763 595
- Energy and Environment0161 881 1383
- ESI01481 722 299
- Lumin801233 666 000
- The Organic Energy Company0845 458 4076
- Light bulbs**
- Lampholder 200001536 520 101
- Lumin801233 666 000
- Insulation**
- Construction Resources020 7450 2211
- Ecomerchant01795 530 130

- Products Ltd01484 854 898
- Green Building Store01484 854 898
- The Green Shop01452 770 629
- Green systems01763 260 719
- Greener Living02392 664700
- Heraklith UK Ltd01628 784 330
- Klober Ltd01934 853 224
- Polarwall Ltd01392 841 777
- Second Nature01768 486 285
- Thermafleece01768 486 285

HEATING

- Ground Source**
- Dando Geothermal01903 731 312
- Earthwise Scotland Ltd01330 833 915
- Eco Heat Pumps01142 962 227
- Geoscience Ltd01326 211 070
- Geothermal Heating International02476 673 131
- Green Systems01763 260719
- Groenholland UK Ltd07905 508 726
- Ground Source Solutions Ltd01246 822 808
- Ice Energy01865 882 202
- Kensa Engineering Ltd01326 377 627

THE ECOLOGIST REGULARLY SHAMES THOSE COMPANIES WHO USE DANGEROUS CHEMICALS IN THEIR "SKINCARE" PRODUCTS, and our readers want to know what the alternatives are. To advertise your product call Zayda on 020 7351 3578



Source4U01926 498 444
 Toby's Reclamation01392 833 499
 Viking Reclamations01302 835 449

Self-build homes

Association for Environment
 Conscious Building01559 370 908
 Association of Self Builders07041 544 126
 Ecological Design Association01453 765 575
 Insideout Buildings01524 737 999

Tiles

Natural Tile01285 642 300
 Siesta Cork Tile Co020 8683 4055

Timber

Altham Hardwood Centre01282 771 618
 Ecomerchant01795 530 130
 SEE AD ON PAGE 86
 Rawnsley Woodland Products01208 813 490
 Reclaimed Pine Online01202 789 868
 Reclaimed Timber Specialists020 8558 2811
 Victorian Wood Works020 8534 1000

Windows and doors

Ecomerchant01795 530 130
 SEE AD ON PAGE 86
 Environmental Construction
 Products Ltd01484 854 898
 Merewood Joinery01614 800 363
 Preston Door & Pine Stripping01772 725 943

BEDDING AND LINENS

Green Fibres0845 330 3440
 Schmidt Natural Clothing0845 3450 498
 Texture020 7241 0990
 Willey Winkle01432 268 018

CLEANING

21st Century Health0800 0260 220
 Aqua Ball0800 026 0220
 Bio-D Company Ltd01482 229 950
 Down to Earth01793 732 000
 Ecotopia01453 752 345
 Ecover0845 130 2230
 Green Fibres01803 868001
 Greenlands01892 871 285
 Insight Eco Store01273 245 958
 The Healthy House01453 752 216
 Natural Eco Trading Ltd01892 616 871
 Vertue020 8806 7294
 Wonderwash Laundry Ball01611 832 7788

FURNITURE & FURNISHINGS

New

Arbor Vetum01386 840 438
 Golden Lamb Rugs01600 740 252
 Grand Illusions01747 854 092
 Insight Eco Store01273 245 958
 Lombok020 7736 0001
 Rawnsley Woodland Products01208 813 490
 Senior & Carmichael01737 844 316
 thingbuilder07779 623 964
 Treske Ltd01845 522 770

Recycled & Salvage

African Trackwoods01488 686 850
 Architectural Salvage Centre020 8459 2947
 Art-eco07792 702 735
 D & A Binders020 7609 6300
 Living Concepts020 8378 1009
 Reclaimed Pine Online01202 789 868
 Reel Furniture01603 629 396
 thingbuilder07779 623 964

Solar Thermal

Future Heating Ltd020 8351 9360
 Green Shop Solar01452 770 629
 Green Systems01763 260719
 HiTech Energy Ltd0845 601 3540
 The Organic Energy Company0845 458 4076
 Power Tech Solar08707 300 111
 Radiant Energy01522 525 300
 The Solar Design Company01511 606 0207
 Solarsense UK Ltd01275 394 139
 Solar Twin0845 130 0137
 Sun Harvester01786 822 827
 West Wales Solar Heating01994 419 439

Wood Fuel & Stoves

3G energi01573 229 198
 Able Fuels Ltd01484 515 578
 Beacon Stoves01559 371 058
 Bio Energy Devices01446 781 415
 Bioenergy Technology Ltd01825 890 140
 Chillii Penguin Stoves02920 865 536
 Construction Resources020 7450 2211
 ebc wood fuels01953 455 854
 Green Systems01763 260719
 Rural Energy Ltd01664 454 989
 Wood Energy Ltd01398 351 349

Conservation Engineering Ltd01359 269 360
 Conservation Resources020 7450 2211
 Eco Logic01217 663 016
 Flow Control Water
 Conservation Ltd08707 558 811
 Flowco Mariflo Ltd020 8330 2487
 Green Building Store01484 854 898
 SEE ADVERT ON PAGE 85
 Hippo the Water Saver01989 766 667

Filters

Aqua Vitae01404 841 841
 Aquasaver Ltd01288 354 425
 Capital Water Treatment020 8649 9503
 Earthly Goods01480 812 004
 Eden0800 917 0977
 Green-way services01202 874 413
 Pure H2O08080 820 820
 Simply Water00353 149 20414
 Tap Magic01473 252 043
 The Healthy House01453 752216

Rainwater harvesting

Construction Resources020 7450 2211
 Envireau Rainwater Management01296 633 000
 Free Rain01636 894905
 Rainharvesting Systems01452 772 000

PROFESSIONAL SERVICES

Architects

Chris Morton, Herefordshire01684 541 480
 Finch Macintosh Architects,
 Winchester01962 855 240
 Goddard Wybor practice,
 West Yorkshire01132 666 044
 Jon Allen, London020 8961 3279
 Neill Lewis, Worcestershire01684 563 356
 Nicholas Hare0207 607 4433
 Quattro Design, Bristol01179 299 672
 Quentin Alder, Bristol01179 683 111

Building consultants

Cob in Cornwall01326 231 773
 Concept Timber01225 792 949
 Mike Wye and Associates01409 281 644

Building contractors

Ecorenovations01611 442 0666

Carpenters

J.G.Horning, Devon01803 732 135
 Richard Arnold, Devon01884 350 51
 Tom Straker, Herefordshire01432 853 113

Energy consultant

Encraft08456 022 874

Roofing specialist

Rawnsley Woodland Projects01208 813 490

WATER

Conservation

Celtic Water Management01239 811 465

HOME RENOVATIONS

Flooring

Ashcroft Reclaimed
 Timber Flooring01243 554 769
 Construction Resources020 7450 2211
 Drummonds Architectural
 Antiques01428 609 444
 Forbo-Nairn Ltd01592 643 777
 Rawnsley Woodland Products01208 813 490
 Reclaimed020 8558 2811
 Treesave Reclamation Ltd01787 227 272
 Treework Flooring01275 464 466
 Yorkshire Reclaimed Flooring01937 843 532

Paints & paint remover

Auro Organic Paints01452 772 020
 Construction Resources020 7450 2211
 Earth & Reed Ltd01449 722 255
 Earth Born Paints01928 734 171
 Ecopaints0845 345 7725
 Eco Solutions Ltd01934 844 484
 Green Building Store01484 854 898
 SEE ADVERT ON PAGE 22
 LILL01296 714 184
 Little Green Paint Company01611 230 0880
 Lizzy Induni Traditional Paints01929 423 776
 Nutshell Natural Paints0136 473 801
 The Green Shop01452 770 629

Recycled materials (incl. salvage)

Smile Plastics01743 850 267

OFFICE RESOURCES



ELECTRICITY

Ecotricity0800 0326 100
 Good Energy01249 766 090
 Green Energy08454 569 550

GRAPHIC DESIGN

Alternation01285 888 672
 Ecographic01273 201 361
 Sussed Design01273 275 302
 Zodshop01239 711 638

INK CARTRIDGES

Action Aid Recycling08453 100 200
 The Green Stationary Company01225 480 556
 Office Green020 8592 9998

JANITORIAL

Environment Saving Supplies024 7638 6544
 Greenlands Environmental Care01892 871 285
 Vertue020 8806 7294

PR

Substance PR0238 023 5050

PROMOTIONAL MATERIALS

Remarkable!020 8741 1234
 Save a Cup01494 510 167
 Yo-Yo Promotions01252 620 593

RECYCLED OFFICE SUPPLIES

Dartex Office Supplies01322 521 545
 The Green Stationary Company01225 480 556
 Paperback020 8980 2233
 Recycle It08707 743 762

STATIONERY

Ecotopia01453 752 345
 The Green Stationary Company01225 480 556
 Remarkable!020 8741 1234

TELEPHONE & INTERNET

Alternation01285 888 672
 Green ISP0845 058 0659
 GreenNet08450 554 011
 The Phone Co-op08454 589 000

WATER COOLERS

Aquaid01223 830 400
 Simply Water01514 755 589

PERSONALS

Want to meet people, or just a special person with a passion for global issues? Visit <http://www.ethicalcentral.com/personals/> today, and make a difference to your tomorrow!

PERSONAL FINANCE

Do you want your hard-earned cash to finance wars, vivisection, or child labour? Or do you want it to support environmentally sound products and businesses? If the latter, call the organisations listed below

BANKING

Co-Operative Bank.....08457 212 212
Ecology Building Society0845 674 5566
Triodos Bank0117 973 9339

FINANCIAL SERVICES

Ethical Investment Co-operative 0845 458 3127
Gaeia0161 434 4681
Naturesave01803 864 390
Rathbone Greenbank
Investments0117 930 3000

Social Venture Network.....07958 772 864

INSURANCE

Absolute Mortgages01865 865 342
C I S Insurance.....0161 829 4084
Ecology Building Society01535 650 777

MORTGAGES

Absolute Mortgages01865 865 342
CD Project.....0795 877 2864
Ethical Investment Co-operative 0845 458 3127

PERSONAL TRANSPORT



71 per cent of road trips by car are less than five miles long, and 46 per cent are less than two miles long. So why not leave the car keys on the kitchen table and make better use of your local transport network?

BICYCLE

ORGANISATIONS

London Cycling Campaign020 7928 7220
Sustrans0117 929 0888
UK National Cyclists Organisation 0870 873 006

BUS

Travel Line.....08706 082 608

CAR

Bio-diesel fuel
Ebony Solutions01606 301 222

Breakdown

Environmental
Transport Association0800 212 810

Electric cars

Electric Car Association01823 480 196

Electric scooters

Powabyke01225 443 737
Electric Scooters01206 233 180

Fuel-saving devices

Eco Tek01844 212 939
Power Plus01323 417 700

Recycling used motor oil

Oil Bank.....0800 663 366

Recycled tyres

Environmental Tyre Disposal.....020 8345 6115
Tyre Collection Services.....0121 544 1408
REG Tyre and
Automotive Recycling01895 444 714

Sharing

Lift Share0870 11 11 99
Car Clubs01132 349 299

TRAIN

TIMETABLE INFORMATION

National Rail Enquiries.....0845 748 49 50

PROPERTY

City Centre Haven, Exeter

3 story Victorian brick house in quiet street near university. 2 rec. rooms, 3/4 bedroom/study + top floor S/C flat brings useful income. Photovoltaic panels. Small organic walled garden, fruit trees, 3 water butts, compost area, 2 sheds
£340,000. 01392-664329 janeastan@blueyonder.co.uk

RECYCLING SERVICES



More than 60 per cent of your rubbish can be recycled. Most of it currently ends up in landfill sites or disappearing up incinerator chimneys. Don't bin it, recycle it

ALL PURPOSE

Forest Recycling Project Ltd.....020 8539 3856
Loop0800 542 1400
Paper Round.....020 7620 3131
RECOUP.....01733 390 021
Waste Watch.....0870 243 0136

ALUMINIUM

Alcan Aluminum Can Recycling...0800 262 465
Alufoil020 8583 5060
Aluminium Packaging
Recycling Organisation.....01216 334 656
Alupro01506 444 644
Cash for Cans0845 722 722

BATTERIES

Centre for Alternative
Technology.....01654 705 950

BICYCLES

Re-cycle0845 458 0854
Salvo.....020 8400 6222

CARPETS

Carpet Burns.....0133 259 4044

CARTONS

Cutouts.....01484 645 281
Tetrapak.....0870 442 6000

CDS

Beacon Press01825 768 611

CLOTHING

Quilter Guild01422 347 669
Oxfam01865 312 610
Red Cross020 7235 5454

CURTAINS

The Curtain Exchange020 7731 8316

COINS

Oxfam.....0870 333 2700
RNIB0845 766 9999

COMPUTERS

DonateaPC.....info@donateapc.org.uk
Recycle It0870 774 3762
Free Computers for Education...01932 874 066

ELECTRONIC AND HAZARDOUS WASTE

Strategic Waste
Management Services.....0113 243 8777

FURNITURE

Furniture Recycling Network01924 375 252
Homestore E. London.....020 8519 6264

INK AND TONER CARTRIDGES

Office Green020 8592 9998
UK Cartridge Recycling
Association01706 525 050

MOBILE PHONES

Fonebak.....01708 683 400

OIL

Actionsmart01656 648 899
Oil Recycling Association.....01279 814 035

PAINT

Community repaint020 8362 0752

PAPER

British Recovered Paper
Association01793 889 600

PLASTIC CUPS

Remarkable.....020 8741 1234

Save-a-cup.....01494 510 167

REFRIDGERATORS

Fridge Recycling.....01925 715 400

SPECS AND SUNGLASSES

Vision Aid Overseas.....01293 535 016

TELEPHONE DIRECTORIES

Yellgroup.....0800 555 444

TV MONITORS/ MERCURY LIGHT BULBS

Lamp recycling.....01752 662 050

Mercury Recycling.....0161 877 0977

Wiser.....01480 462 232

STORECUPBOARD



Too busy to make it to the shops? Then let them come to you. As well as the fruit and vegetable box schemes listed on page 91, there is a wealth of companies who deliver all your weekly needs right to your door.

NATIONWIDE

Barleywood Walled Garden.....0117 935 1725
 Community Foods.....020 8450 9411
 Duchy Originals.....020 8831 6800
 Eostre Organics Ltd.....0195 378 9639
 Equal Exchange.....0131 220 3484
 Essential Trading Cooperative.....0117 958 3550
 Everybody Organic.....0170 765 1243
 Goodness Direct.....0871 871 6611
 Graig Farm Organics.....0159 785 1655
 Infinity Foods Cooperative Food..0127 342 4060

Mother Hemp.....0126 242 1100
 Natural Good Foods.....01455 556878
 Oil in the Raw.....0157 935 1178
 Organico (see back cover ad)0118 951 0158
 Suma.....0845 458 2290
 The Organic Delivery Company...020 7739 8181
 Traidcraft.....0870 443 1018
 Westcountry Organics.....0164 724 724
 Wild Oats.....0117 973 1967



200,000 PEOPLE READ THE ECOLOGIST EVERY MONTH

This is a big audience ready to support small businesses which offer products which are fairly traded. To advertise call Zayda on 020 7351 3578

VOLUNTEERING



Increasingly, volunteers are holding the fabric of the world together. Whether it's social cement that's needed or physical labouring, many of today's communities couldn't survive without thousands of hours of donated time. Are you doing your bit?

RESOURCES

Action Without Borders.....001 212 843 3973
 Environmentjob.co.uk.....0161 2820 920
 Volunteering England.....0845 305 6979

UK

BTCV.....01302 572 244
 Environ.....0116 2220 222
 Ethical Consumer.....0161 226 2929
 Groundwork.....0121 236 8565
 Time Bank.....020 7401 5420

INTERNATIONAL

MAY ALSO OFFER UK PROJECTS

Africa and Asia Venture.....01380 729 009
 African Conservation Experience0870 2415 816
 Bio Sphere Expeditions.....01502 583 085
 Coral Cay.....0870 750 0668
 Cross-Cultural Solutions.....001 914 632 0022
 Earthwatch Institute.....01865 318 838
 Friends of the Earth.....020 7490 0881
 Outreach International.....01458 274 957
 Project Trust.....01879 230 444
 Quest Overseas.....020 8673 3313
 Student Partnership Worldwide...020 7222 0138
 Trekforce.....020 7828 2275
 VSO (Volunteering Advice Line)..020 8780 7500
 VWOOF.....01273 476 286

HELP RESTORE THE CALEDONIAN FOREST

on a Trees for Life volunteer work week in the beautiful Scottish Glens this spring and autumn.

More information from:

www.treesforlife.org.uk

Tel: 0845 458 3505

CAN YOU DESIGN A WEBSITE FOR A NETWORK OF COMMUNITY HERBAL PHARMACIES IN DEVELOPING COUNTRIES?

Interest in biodiversity, traditional knowledge and social enterprise; Spanish speaker all helpful. UK base Oxford.

Contact Ruth West

Tel 01865 245081

Email ruthwest@gn.apc.org

ORGANIC MARKET GARDEN

in Cheshire offers opportunity to learn. Free accommodation for part-time or full-time, plus some money. Vegetarian and non-smokers only. Free Yoga lessons.

Tel: 01948 860213 after 9.30pm

For professional help with your advertising phone our advertising manager on 0207 3513578

DEATH OF PLANET SPARKS DECLINE IN RETAIL SALES

Children we must move now from a 24-HOUR GUILT-BATH FOR THE WRETCHED LOGO-FISTED SINNER to an four generation assault on the Consumer Economy, the awful cruelty of sweatshop producing to fossil-fuelled shipping to ad-stunned buying.

Let me tell you a story. Wal Mart, fearing a fall in consumer confidence, slashed the Fergie Doll down to 20 bucks, more than \$10 under Toys R Us. I read this yesterday and it stopped my eye on the page. And, another sign from the depths of boiling Hell: two hurricanes dying in Key West suddenly dervished up to 175mph as tourists reluctantly fled the warm water. Are Katrina and Rita the dancing Devil-girls that will tie us up and Stop our Shopping?

And of course, there is always the following, as a way of tracking the progress of the SHOPOCALYPSE! Americans have their Annual Stupid Gift Toy, always a variation on Mickey Mouse or Alfred E Newman, featuring, beneath wildly crossed eyes, a smile, like George Bush's, that brazenly dares the inanity it mimics. So consumers are, as in every year, approaching this Christmas's miles of shelves lined with these ghoulish smile-for-miles plastic dolls. They see something no-one sees. THEY GET A JOKE DEEP IN THE MUZAK. Could this be utter depravity?

The armies of Annual Stupid Gift Toys are waiting, thousands of them are, in big boxes across the planet, and as the

beloved American consumers walk toward the comic imps, something has changed. Like last year, they are again pulled by their corporatized children, who asked for specific brand names at the moment that they said their first words, but - can it be? These parents, shaking off a dizzying day of ten hours of TV and SUV-jams, these blessed sinners are shaking their heads, pausing a moment. They are having second thoughts. EXECUTIVES ARE WATCHING THROUGH SURVEILLANCE CAMERAS, HOLDING THEIR BREATH. No - the walking dead are wincing with consciousness, their arms are jerking,

they are slapping their faces. The consumers turn to each other, "Honey, do you... do you hear something, something in the wind?"

MOMMY AND DADDY BUYER are standing there as the hungry neurotic doll-army waits, amazed, smiling like the President suddenly started licking the teleprompter. Yes, the

consumers have come to a full stop, as if stunned by a memory. They are having seconds thoughts. "Honey, did Katrina and Rita harmonize a whisper to us?" Did a message make its way through THE HUNDRED HOURS OF ALPHA STATE GROUND BRAIN SHIT I took in through my eyes since their 90 foot waves hit?

Yes children, we are having second thoughts. And these are the first second thoughts recorded by American consumers since HOOLA-HOOPS CAUSED SEX IN SMALL PRAIRIE TOWNS IN

These are US consumers' first second thoughts since Hoola Hoops caused sex in small prairie towns in 1964



1964. There is a slow double take in progress. Large gym-bred super-models and Caterpillar bulldozers imported from supermalls and intifadas are trying to push Mommy and Daddy's face back toward the product: this shopping season's hypnotizing scrabble face, the Fergie Doll, the Cabbage Patch doll, whatever it is this year -- is losing it's gravitational pull. The hurricanes whispered something very convincing, straight from the planet's conscience. Have you noticed this? Katrina and Rita were a tipping point after the screaming dying innocent children finally got through the pixilated walls of American techno-provincialism. AMERICANS HAVE SEEN ENOUGH DEAD CHILDREN SUDDENLY? Why now? And it's getting in the way of the Annual Stupid Gift Toy. Why is that? Is there hope here? Can we Stop Shopping? Will somebody help me?

We are the Earth too.

Environmentalists forget that. There has always been something very sad about erecting a season of happiness around Shopping. Because the Earth in us is sad, and that wind is whispering that we stop, as we reach for the product. The smiles of Mickey Mouse, George Bush, the Cabbage Patch and the Fergie Dolls - these statuettes put on the electrocuted face of our consumption, our modern nightmare. We have been embracing our Hell with the swip of our card, and we know it, and the Earth in us is sure of it. Our Hell.

Katrina and Rita have sung their deadly duet. They uncannily aimed at the oil refineries of the Gulf. We hear them because we were whispering the same thing. This year, of all years, we must Stop Shopping. Amen.

You know climate change is happening ...but what can you do to help?

The biggest difference you can make is to change where your electricity comes from.

But choose carefully.

At ecotricity, we spend more per customer on building new sources of renewable energy than every other green supplier put together.*

We're the only supplier that takes all the money you spend on electricity and invests it in building new sources of green energy. That's why we're the only supplier used and recommended by both WWF and the Soil Association.

How do you switch?

It's easy. We do all the hard work for you. You can switch your home straight away by calling 08000 326 100 or visiting our website at www.ecotricity.com

...and it won't cost a penny more!

We promise to match the price of conventional electricity in each region of the UK.

* In 2004, ecotricity spent over £900 per customer building new sources of green energy. Our nearest competitor spent less than £9.

For more information please see www.whichgreen.com

What is ecotricity?

See encarta.msn.com.

e-co-tric-i-ty

noun

ecofriendly electricity: electric energy produced by ecologically friendly means, for example, by solar power or wind power (informal)

[Late 20th century. A blend of ecological and electricity.]

ecotricity

ecotricity

Call us free on 08000 326 100

www.ecotricity.com

Save the planet this Christmas...

again...



and...

again...



and again...



and again...



and again...



and again.



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Organic continental specialities available from: Direct Mail & Festive Hampers - Graig Farm on 01597 851 655 and all good organic and fine food stores.