

THE Ecologist

VOLUME 32 NO 2 £3.50

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MARCH 2002

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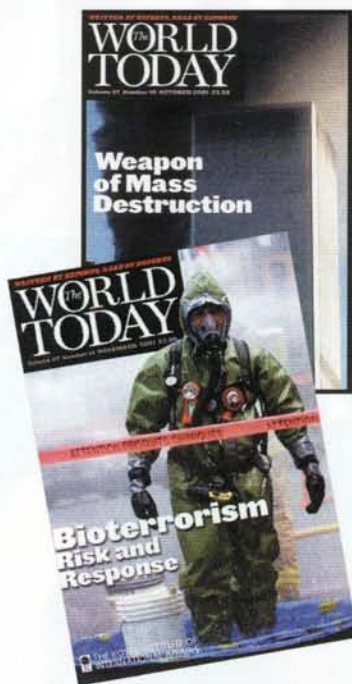
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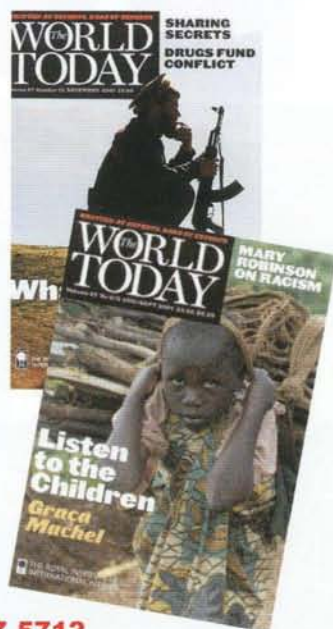


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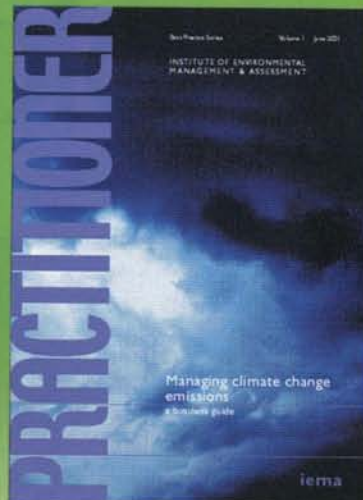
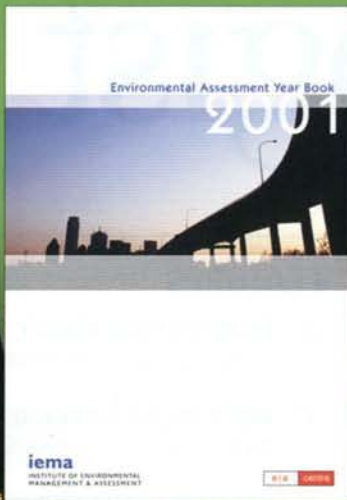
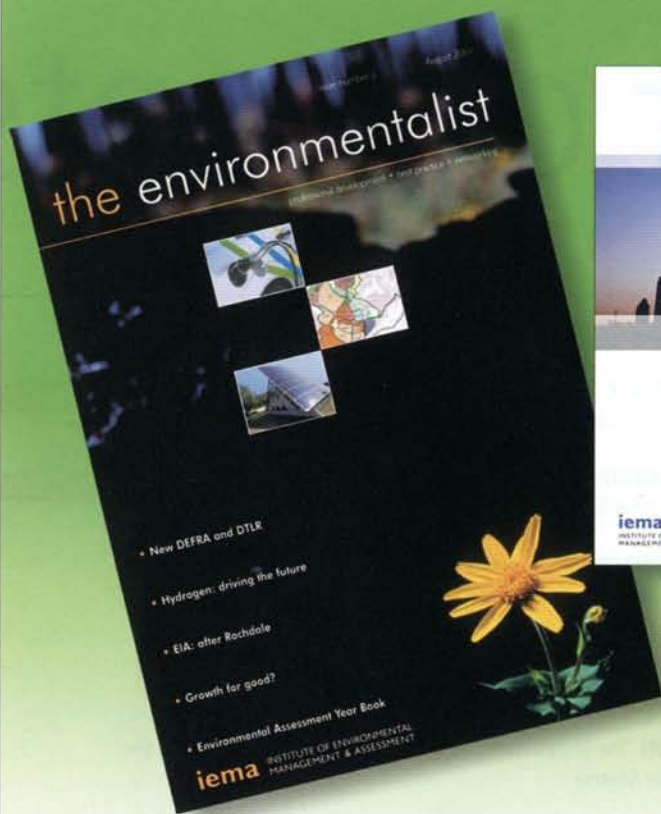
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No smoke without fire

On 19 February 2002 – exactly one year to the day since the first case of Foot & Mouth disease was officially confirmed at an Essex abattoir – *The Ecologist* was in the High Court challenging the Government's decision not to hold a full public inquiry into the disease and its handling. We're backing a group that includes farmers, a vet, a country hotelier and a mole-catcher – all of whose livelihoods have been devastated by Foot & Mouth and its consequences. Many other groups and individuals contacted *The Ecologist* during and after the outbreak, asking us to use what influence we had to help them. Backing this case is one obvious response.

We share their view that the Government's Foot & Mouth policy was barbaric and possibly illegal. It was certainly flawed.

How for instance can government justify squandering roughly 20 times the value of exports in a good year to eradicate a disease that does no harm to humans and that most animals recover from? And given that we export and import nearly identical quantities of meat, does maintaining our export status really justify the damage done to Britain's small producers? What was the Government's real agenda? Was there, as several people told us, a deeper conspiracy to 'cull' the number of family farms?

These and many other questions can only be answered satisfactorily by a full public inquiry – independent, open to public and media scrutiny, and where ministers and civil servants can be summoned to give evidence. The very best we can expect from the Government's three semi-private inquiries will be a friendly assessment of the manner in which government handled its chosen policy. There will be no examination of the policy itself.

The fact that two of the worst affected counties, Devon and Northumberland have set up their own inquiries, to which DEFRA was invited, but declined, shows that the Government's attempt to stage-manage scrutiny of its handling of Foot & Mouth has backfired.

The good news is that the Government is rattled by our action and has appointed its leading legal adviser, the Attorney General Lord Goldsmith QC, to fight the case.

Meanwhile, prompted, in part, by the massive flood of letters and calls we received during the Foot & Mouth crisis, *The Ecologist* has joined up with Robin Maynard, formerly of Friends of the

Earth, The Soil Association and BBC Radio 4's *Farming* to work on a longer-term and broader farming strategy. Most recently, he's been responding to the report just published by the Government's Future of Farming Commission. Here are his immediate reactions:

Very few people – apart from the NFU – would argue that the system of public money paid out to farmers as production subsidies could or should go on unchanged. Environmentalists have argued for years that these subsidies drove intensification, encouraged increased use of agrochemicals and ever bigger machinery, and disproportionately favoured the biggest farms to the cost of smaller, 'family farms'.

So shouldn't we all be cheering that the Commission, which included a leading light from the organic movement, has recommended that taxpayers' money should be shifted from production support to paying for environmental management?

There are certainly some good proposals – for example, that local food marketing should become mainstream, and to end livestock systems reliant on antibiotics and other drugs to mask poor animal welfare. But overall I have an uneasy feeling that the report may be no more than 'green chaff' designed to distract environmentalists and others eager for any positive shift in agricultural policy from the Government's true 'vision' for our farming and food production: fewer, bigger farms competing in international markets to produce food commodities at the cheapest cost to the benefit of the food processors and retailers – ie 'agribusiness as usual'. The report lacks both local and global vision. There is little

consideration of the wider values an indigenous farming industry comprising diverse enterprises brings to our countryside, its communities and culture. National food security is barely mentioned and the sustainability of flying in food from around the world to compete with UK produce – effectively 'food swaps' on top of 'food miles' – isn't questioned. Nor are the impacts on the environment and food security of developing countries turning over their farmland to export crops to feed UK consumers and livestock considered.

*The Government is clearly still in the grip of the old economic model that sees agriculture as an inevitably declining industry, with technological advances enabling fewer farmers to produce the same, if not more, food more cheaply. Surplus farmers and farm labour, so the argument goes, should be shed and put to better use making more consumer goods to stoke the great 'growth economy'. Whether those on the Commission knew this to be the Government's true underlying 'vision' we'll never know, as their terms of reference excluded them considering crucial factors affecting UK farming and advancing this particular economic model. The Commission's recommendations had to be 'consistent with the Government's aims for CAP reform, enlargement of the EU and increased trade liberalisation,' (see Julian Rose's article in *The Ecologist* Vol 32/1 page 61 on the proposed streamlining of Polish agriculture to the detriment of the country's self-sufficient peasant farmers).*

Had the Commission not been barred from looking at such issues, they might have identified the real causes of farming decline: namely, the concentration and consolidation of global agri-food businesses and the consequent creation of a far from free market, where farm-gate prices are forced down to close to or below the cost of production.

In the past, taxpayers' money intended as production support to farmers has ended up effectively subsidising the processors and the retailers. Ironically, with the Commission failing to point out the inequities of the world market, their admirable intention to reward farmers for genuine environmental management may simply be subverted all over again to hold down farm-gate prices so maximising profit to agribusiness and the supermarkets.

We'll keep you posted.

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Bombers and Burqas

So women are to blame for 11 September (*Comment*, Vol 31/10)! I never realised feminists were behind the Taliban, but now your excellent commentator has pointed it out, it seems so obvious! I was about to subscribe to your magazine, too – before I realised such things are clearly unfeminine – so it's back to the kitchen.

Kate Evans, London

The sickest joke ever

Thank you for printing *Bombers and Burqas*, (Vol 31/10). I have become totally disillusioned by the dominant version of feminism that teaches young girls and women that the only way to achieve respect and fulfilment is to ape men and adopt stereotypical male characteristics.

I despair that we now live in a society where women are led to despise their biology, to see their very femininity as a 'career disadvantage' and in which motherhood is seen as demeaning and to be avoided at all costs, or at most adopted as a part-time job. Feminism, in essence, has become nothing less than the philosophical whore of consumerism. The superior virtues to which womanhood could once justifiably lay claim have been abandoned in the pursuit of material aspiration and conspicuous consumption. Isn't this the sickest joke ever?

Jay Draper, Malvern, UK

Hang on...

Lester Brown's *Eco-economy (Save the planet and prosper*, Vol 32/1) is merely a greener version of our existing set up. People will still be doing repetitive, tedious, hi-tech jobs making fuel cells or eco-cars to pay for other specialists to grow their food and make their clothes and build their houses. Their taxes will be used to pay for a road network, rail network and health service which all consume raw materials and energy in their manufacture and maintenance. The iron ore for every second china-man to have an eco cars has to be mined somewhere. Light rail has to be paid for by wealth creation. How do we create wealth without destroying ecosystems? Lester Brown does not explain.

Brown's language betrays an arrogant imperialism that seeks to impose our

solutions on the whole world. People have and can live easily without electricity; we are the hi-tech junkies with our wealth built on foreign soils. Now we expect to turn farms into factory fodder making solar cells and wind turbines so the world can be wired up to dependency and mechanisation.

Eco-economy is sad fantasy, a green status quo, and as such should be exposed.
John Rogerson, Lockerbie, UK

Hang on, again

With regards to *Save the planet and prosper*, (Vol 31/10): A NAFTA commission recently made public its environmental assessment of the three signatory nations. All of the 'garden variety' consequences of corporatized economic growth were highlighted: unsafe water, polluted air, loss of biodiversity, deforestation, etc. So too the big ticket items: global warming, water shortages, and resource depletion.

What is most troubling about this 'profound' environmental update is the source. When conservative big business crazies sound alarm bells over eco-issues, we're in bad shape. The report urged ending perverse subsidies to natural resource-based industries, using a more realistic accounting method to include 'reality' in our GDP, and other initiatives that 'eco-geeks' have long advocated.

Herman Daly, former senior economist at the World Bank, made a cogent equation regarding the value of our amazing planet. He said however much we value our lives, we should impute that value onto that which sustains our lives. Clearly then, he noted, the value of the total eco-system is beyond measure.

James Rivet, Barrie, Canada.

Re-thinking priorities

I was struck by the undercurrent of passion and perhaps despair in David Goodwin's letter (*Defined Priorities*, Vol 31/9). We are indeed in the midst of extinction, this time caused by our species, and many other species have already succumbed. But his fear that the Earth may itself be destroyed is unfounded – it is not in danger as it will follow the repeated pattern of recovery.

The only questions are how deep and extensive will the extinction period be and

will we survive to be included in the new order.

George Cummins, Annan, Scotland

Market distortions

I am disappointed that you have fallen into the classic economic trap of accepting that production costs of Western agriculture are lower due to 'economies of scale' (*China Crosses Fingers and Embraces WTO*, Vol 31/10).

Economies of scale may or may not apply, but I am sure an honest accounting will reveal it is cheap oil and distorted transport policies that allow food to be grown in mechanised monocultures and trucked across the globe for cheaper than it can be grown by peasant farmers.

Jamie Kneen, Ottawa, Canada

Save the wild salmon

Do Bears Fish in the Woods, (Vol 31/10) was very enlightening. We must do everything in our power to save the salmon. We need more monitoring of our riverbeds and strong preservation efforts for our whole environment. If we lose our salmon, we will lose a major part of our wildlife. It will be a domino effect. The salmon first, then the bear, and then anything else that is connected to the salmon that we can find in our natural wilderness.

Christopher John Mitchell, Sr, CA, US

The case against 'scientific' whaling

Re: *Suckered at Sakhalin* (Vol 32/1), see <http://www.theage.com.au/news/national/2002/01/30/FFXF7XGK0XC.html>

Greg Revell, Australia

Go Mad

I admire your desperate attempt to patch up an irredeemable lifestyle in your book *Go MAD* and will definitely recommend it to all urban friends. But for me it was a horrific piece of education. Having left Western urban society completely three decades ago for 'primitive' country living, and never having 'belonged' before that, I was shocked at the mere notion of fridges, washing machines, and – horror of horrors – 'washing up' machines. I know you have to aim your campaign where people are actually living – but for goodness sake let's not forget that it STINKS!

Jenny James, Atlantis Ecological Community, Mountains of Colombia

Two 'birds' with one stone

Stephen Byrnes cannot back up his claim that vegans are cruel to themselves (*Letters*, Vol 31/10). For all his bluster, he cannot name a single nutrient that cannot (easily)



The guerillas in the midst

be obtained without animal products because no such nutrient exists.

The idea that vegans require supplements relies on the erroneous assumption that yeast extract is not a real food.

Yet in the words of John Perrott of Community Foods, 'I would not think that cooking the spent yeast from brewing is any more natural or less natural than cutting up a cow and cooking it'.

Katharine A Gilchrist, Canterbury, Kent

Who's rambling?

When an application was made to take out 1m tons of limestone a year from the Peak District, the then Minister, Richard Caborn, refused to call for a public enquiry. Needless to say this gross travesty of 'National Park (NP) purposes' has to all intents created a 'super quarry' in the Peak District.

While paying lip service to safeguarding our finest landscapes, Nick Rayford, the Planning and Construction minister, then took Tarmac abroad to sell to as many buyers as possible. The White Peak now resembles a lunar landscape.

For many powerful interests NPs are a tiresome obstacle to their plans, whether it be Multi-Rocket launching pads and all the grossly intrusive infrastructure to service them at Otterburn in the Northumberland NP; plans for a massive nuclear storage facility in Snowdonia; proposals for a huge freight terminal at Dibden Bay in the New Forest (our newest NP!) and a motorway style bypass for Mottram/Tintwistle in the Peak District, despite a government promise after the Oakhampton bypass scandal, that 'no more motorways would be built in National Parks'.

The above is only a foretaste of what we can expect when the Green Paper for Fast Track projects of 'national significance' comes into effect (beyond 'fast' no doubt).

Terry Perkins, General Secretary, Ramblers' Association, Manchester, UK

What on Earth?

Moyra Bremner talks of 'destabilising tectonic plates, causing California to slide into the sea' (*Reviews*, Vol 31/10). You do not have to be a professional scientist to know that is complete nonsense.

What is worse, it sounds like the reviewer is trying to be cute by making a sick joke on a serious subject, which will make the readers not only mad at this reviewer, but also disbelieve the other articles in the magazine. Please do your job as an editor!

Edwin Ernest Salpeter, Ithaca, NY, USA

One of Indonesia's most wanted men is waving a loaded revolver in my face and explaining how many people he has killed. 'Three thousand,' he says, 'six hundred and six.' I would like him to put the gun away, but there doesn't seem to be a tactful way of saying it.

Goliar Tabuni is an Operational Commander of the Free Papua Movement – the Organisasi Papua Merdeka, or OPM. He and his few thousand colleagues have, over the last 40 years, waged a guerilla war to free their country from Indonesian occupation; a war waged with knives, axes, spears, bows and arrows – and guns like Goliar's. The OPM must be the world's most badly-armed guerilla force. It may also be the world's most determined.

If you've never heard of West Papua, or didn't know it wasn't already free, it's probably no surprise. The western half of the island of New Guinea – the world's third largest island, and still one of the most forested, species-rich and 'undeveloped' – has been under Indonesian control since 1969, when a rigged referendum concluded that the Papuans – previously part of the Dutch empire – wanted to become part of Indonesia. They wanted no such thing, and still don't; and people like Goliar, with his vast beard, tatty clothes, bare tribesman's feet and ageing weapon, are only the most obvious example of it.

The reason they don't is simple. For 40 years, with the world turning away, the Indonesians have conducted a vast campaign of ethnic cleansing against the indigenous Papuans, designed to rob them of their country and their identity. The Papuans, who still live traditionally in tribes in tiny villages, hunting with bows and arrows or harvesting sweet potatoes, are less than nothing to the Indonesian government, which, under the dictator Suharto, bombed, tortured, murdered and raped hundreds of thousands of them, leaving those who remained servants in their own land. Suharto has gone, but the killings in Papua go on, and there is no sign of an end to them.

Why does Indonesia bother? In a word, money. For West Papua – or 'Irian Jaya', as the Indonesians renamed it – is rich in resources.

The future for UK agriculture

I was surprised that two people who clearly want UK agriculture to prosper should be so bereft of clear ideas (*Debate*, Vol 31/10).

I have just been reading *The Ecologist Report 'The Politics of Industrial Agriculture'* by Tracey Clunies-Ross & Nicholas Hildyard (1992) and one really

Oil, gas, timber, gold, copper and more – all ripe for extraction. For over 40 years the Indonesian government, in collusion with some of the world's biggest multinationals, has been working to get their hands on Papua's resources and take them straight out of the country, whether the Papuans like it or not.

One example. Near where Goliar and his army are hiding in the rainforests lies the Freeport copper and gold mine – the biggest of its kind in the world. Freeport moved into Papua in the '60s, shifted the tribal people off their lands with the help of the army and proceeded to slice the top off the Amungme tribe's sacred mountain and cart away the contents. For this, Freeport gets US\$1 million profit every day, and the Indonesian government gets a fifth of its tax base paid. The Papuans get cultural destruction, environmental vandalism and 120,000 tons of mine waste poured into the Aikwa river every day.

Freeport is only one of the corporations profiting from the repression of the Papuans. Shell has operations in the country and BP is in the process of setting one up. This is why people like Goliar want both the corporations and the Indonesians out of their country. He and his fellow Papuans are at the very tip of the global economy's sword; the point where the resources that we all use every day are taken, by force, if necessary, from the people they belong to.

It's not just armed guerillas who say so. Every Papuan I talked to, in remote hill villages, coastal towns, universities, hidden locations; all want freedom from both colonial and corporate rule. When they do, they say, they will govern differently; they want a tribal democracy, where every community controls what happens to its land. Very bad news for Freeport and Indonesia. Very good news for the people they have been walking over for years.

Watch this space.

Paul Kingsnorth is travelling to research a book about the new global resistance movement, to be published by Simon and Schuster in spring 2003.

has to look no further. I suspect that neither Rothwell nor Hart would dissent from a single word of what was suggested in the report. It encapsulates a future for UK agriculture that is logical, sensible and optimistic.

Surely this is what they should be recommending to Lord Haskins.
Stephen Eades, Chippenham, UK

Country sides

We have received more letters (mostly negative) over our Countryside Alliance advert and last month's response to one reader's criticism than for any other issue in a long time. Here we print as many as space allows.

You ask (*Letters*, Vol 32/1) why the campaign against hunting is fought so much harder by the animal rights movement than campaigns against the routine torture of animals in laboratories, factory farms etc. How depressingly wrong you are! Animal rightists oppose all animal exploitation, but we can't control the coverage we get or which animal issues catch the eye of media commissioning editors. The line in your diatribe that particularly grated was when you asked: 'Where was the anti-cruelty campaign during the butchery of millions of farm animals during the Foot and Mouth crisis?'

For a start, we weren't eating the corpses of 'humanely slaughtered' animals but we did have to put up with the hypocritical bleatings of media pundits who do – and who used us as scapegoats for the 'grief' they felt at the sight of so many animals being killed; something that happens daily on a vast scale behind closed doors. What we were doing was working our bloody socks off writing letters to newspapers and magazines like yours, trying to get on radio 'phone-in' programmes, standing outside NFU offices with banners depicting the appalling everyday cruelty to farm animals. Where was *The Ecologist* and the rest of the media – tucking into lamb chops? You are so keen to jump on the bandwagon and blame the animal rights people for all society's ills. The aspect I find really odd is the silence about the people who started the whole FMD fiasco – the greedy dealers and farmers who reared animals in squalor and hauled them up and down the country chasing an extra few pounds. Their reward was to have the blame heaped elsewhere and receive hundreds of millions of pounds 'compensation'! All in all, I would have thought they were the villains of the countryside, wouldn't you?

Pat Griffin, Linton, Cambridge, UK

Animal Aid campaigns against factory farming, vivisection, hunting and all other forms of animal abuse, and a common response to almost all our campaigns is that we should be campaigning against something else that is even worse. Animal abusers can always manage to make themselves feel better by identifying someone else who they consider to be even more immoral than they are. Frankly I do not consider it to be a very convincing

defence. The important question is not 'which campaign is being fought harder?' but 'is hunting cruel, unnecessary and immoral?' We believe that the answer to this question is 'Yes' and that hunting should therefore be banned.

Richard Mountford, Development Manager, Animal Aid

You say *The Ecologist* is 'neither pro- nor anti-hunting'. To some it might appear you are copping out of a perfectly valid moral debate for a whole list of entirely spurious and irrelevant excuses, none of which stand up to forensic examination.

Some might expect you, for the sake at least of consistency, to maintain you are neither pro- nor anti-GM crops on the grounds that the whole issue has been polluted by politics; that you are neither pro- nor anti-badger baiting on the grounds this is a purely 'local issue' and should not be contaminated by further state interference in the countryside. Do I really have to point out that cruelty, whatever form it takes, is never just a local issue; otherwise there could never by national legislation against it. You castigate 'The anti-hunting brigade' (interesting use of noun) for not pursuing animal experimenters in the laboratories, and factory farmers in the intensive-rearing units. You scold the animal welfare organisations for not shouting louder about the consistent abuse of animal slaughter regulations during the foot and mouth crisis. Perhaps you should add to your list the Aids organisations for not being so rigorous in the pursuit of eradicating malaria, and the groups who campaign against female genital mutilation for not taking up the cause of the ritual amputating of the hands of thieves in fundamentalist regimes. Your strictures are meaningless and your logic shaky to the point of being disingenuous. Your rebuttal of Fulton's criticism sound as if they were influenced by the egregious Robin Page himself. If that were true, it would, of course, put under unwelcome scrutiny, your magisterial assertion that you are neither pro- nor anti-hunting. That horse, as they say, won't run.

Irene Barker, Stowmarket, Suffolk

The fact is the anti-hunting issue is not fought any harder than other issues, it is just that the media is more willing to engage in this aspect of cruelty and air the subject, thus giving the impression it is the top priority to animal rights campaigners. As to the FMD crisis. It is a total myth that we in the animal rights movement have been, as the media so often claim, 'silent' on FMD. Gods knows we tried to voice our

concerns but we can't force the media to print our letters, read our press releases and demos, allow us on radio phone-ins and TV programmes or watch our undercover videos of farmed animal abuse. This has allowed columnists and editors to repeat the lie over our supposed lack of action on FMD – the proverbial Catch 22! Mind you, I wonder what *The Ecologist* would have done to get us publicity? Stand naked in a field with placards screaming abuse at MAFF officials? Sure this might have got us noticed but frankly I can't see how it would have stopped the 'cull' to 'save' the animals. In fact it would have given the animal rights hating pundits another chance to vilify us for 'deliberately' wanting to spread the FMD virus. Anyway, what would we animal rights campaigners have been 'saving' these animals from? While the media and public gnashed their teeth and wept as they watched in horror the FMD crisis unfold on TV, where did they think their lamb cutlet and beef sarney was coming from? I'll tell you: from the untelevised, and hidden holocaust of 900m animals sent annually, in the UK, to be strung up their legs and have their throats cut by desensitised men on piece rate in the slaughterhouse. This is the message we want to get across; eating animals is a brutal, ugly and often disease-ridden business, stop being party to it, instead go veggie, better still vegan. The message was too truthful and honest and no one wished to hear; we were not silent but silenced for our pains.

Sara Starkey, Kent, UK

To give credence to The Countryside Alliance (made up not of true countryside lovers but by the cruel sports mob and a coercing of those in their employ, sometimes under threat) is like accepting an ad from Coca Cola, Nike or McD...

Mary Ashton, Surrey, UK

You say you have no policy on hunting with dogs, maybe you should get one – you seem to have an opinion on everything else! (Or do they pay you to not look too deep?) Do you have an opinion on badger baiting, bear dancing, cock fighting – are these things OK with you? Time will tell and I wait for the next inappropriate ad, BNFL perhaps or ExxonMobil?

Lucy Beaghen, Exeter, Devon

When the animal is an Algarve Tiger or even the cruel conditions of factory farming *The Ecologist* takes a view. Why not for the fox being killed in the name of sport? Is this not an ecological issue?



Cap in hand?

The recent publication of the report on the future of farming and food left me pondering over an unusually enjoyable question: what went right? Because, although the report is no magic cure for our ailing countryside, it is at least a start. For the first time, formal recognition has been given to two crucial environmental objectives. One is that the countryside and consumers need to be reconnected. The other is that environmental protection is now the only reason to subsidise farmers. In other words, the dreaded Common Agricultural Policy (CAP) must be reformed.

It's remarkable such a consensus was reached. In the UK there's a history of bickering between environmentalists, farmers, food producers and consumers. Yet this commission, with representatives from each sector and chaired by a farmer, Sir Donald Curry, reached rapid consensus. More remarkably, the government, in the form of the minister Margaret Beckett and her relatively new department (DEFRA) appears to want the recommendations speedily implemented.

This represents a seismic shift. Three years ago at the time of the last round of CAP negotiations I wrote about the urgent need for reform. At the time, the subject was considered arcane, even in upmarket broadsheets. There were individuals and organisations already actively campaigning for reform. Graham Harvey's book, *The Killing of the Countryside*, had painted a horrific picture of the damage subsidies for intensive farming were doing to the environment. The organic movement was vociferous in exposing poor food quality. Crucially the RSPB had identified modern farming practice as the biggest threat to wildlife in the UK and had made agricultural reform a major priority.

But when it came to public opinion and political negotiations these voices were barely audible. In the summer of '99, the then agriculture minister Nick Brown came limply back from negotiations crowing about a few minor changes: a bit more money for fantastically complicated rural development schemes. The truth was the damaging subsidies to dairy and arable farmers remained intact and no one in central government seemed to understand or care. Now, the government's attitude has changed and Beckett has fiercely supported the commission's proposals. She's robustly defended the idea that subsidies should only be for environmental enhancement not for food production. In the meantime, she agrees the UK should use a 'modulation' process to redirect food production subsidies into agri-environmental schemes.

External events are partly responsible for this shift. Farming has been in crisis for the last few years — incomes have plummeted, especially for smaller farms, which never really benefited from subsidies. Last year's litany of disasters exposed

environmental damage as a disaster not just for wildlife, but for the viability of farming itself. Farmers suffered but so did consumers brought face to face with some of the unacceptable practices of subsidy-driven intensive agriculture. Foot and Mouth exposed something else — the value of an environmentally healthy rural landscape. Too late, people realised rural tourism was just as valuable to the economy as the export market for livestock, which some farmers insisted meant vaccination was out of the question.

Clearly the status quo was not an option especially given that EU subsidies themselves face an uncertain future. Yet in spite of this imploding situation, environmental campaigning deserves praise for relentlessly steering the thinking in its own direction. This government, for all its 'sustainable' rhetoric, does not automatically pursue an environmental agenda, as the latest disastrous proposals to change planning legislation make clear. Following pressure from the business lobby, the government is proposing reforms that will make it easier for developers to build on the countryside — environmental protection is almost totally absent from these proposals. But in the case of farming reform, environmentalists have made sure no other solutions are thinkable. In a policy vacuum they offered the right policy at the right time.

The RSPB has to be specially commended here. Several years back it identified agricultural reform as critical and made it a priority it supported with substantial resources. It had a strong policy team who set about doing the 'joined up thinking' that this government boasts about but never does. It involved its membership and worked alongside other organisations. Of course it helps that the RSPB's membership is greater than all political parties combined and that it is a major landowner with close connections with farms and farming. But the performance was still impressive; high quality briefings, well thought out policy, well-planned conferences and active membership involvement.

I don't want to paint too rosy a picture. The proposals in the Curry Commission are just that — proposals. The more traditional farmers, as represented by the NFU, are up in arms. They want to keep their subsidies. Agri-environmental schemes will only happen if the Treasury makes money available and, currently, there are a lot of bears squabbling over that honey pot. Nor will 'reconnecting consumers and producers' prove easy while supermarkets continue to exert their stranglehold. But it's a start and shows what can be done. There are many battles ahead to make this government's rhetoric a reality and much can be learnt from why it worked this time.

Ros Coward

Do not be mistaken into thinking that the countryside alliance speaks for country people or that it has an agenda other than the continuation of blood sports (see http://www.corporatewatch.org.uk/pages/Countryside_Alliance.html).

Mark Smith, West Wickham, UK

The Countryside Alliance only emerged militantly when New Labour proposed a hunting ban and a Right to Roam Bill. During long years of Tory rule which saw the closure of many rural sub-post offices, small schools and shops, and local bus services decimated and privatised etc we heard not a murmur from them.

However, when field sports were threatened and a Freedom to Roam Bill loomed, they marched on London, gathering support from others with diverse grievances; some of whom later regretted allying themselves with the hunting lobby.

Betty Cotton, Presteigne, Wales, UK

Like Catherine Fulton, I recently became a reader of your magazine, which at first, I found prejudiced and infuriating. Then I noticed a large advert for Friends Provident, inside the front page of the last issue. Is your magazine for capitalists? You should know this organisation is just a front for the capitalist system. I have, however, decided to keep my subscription, and though I too am sickened by hypocrisy, I found your policy on the Countryside Alliance and bloodsports enlightening and enjoyable.

John Nye, Tunbridge Wells, UK

I particularly enjoy the debates that run head-to-head in this magazine. I also appreciate the diverse views that are brought to the fore. The letter in Vol 32/1 threatening to not renew a subscription because an associate of the magazine has beliefs that are not in keeping with his/her own, would rather narrow the perspective of this valuable forum.

I am a meat eater and not particularly proud of it, but to me it is how I was brought up. I would say, however, that ecology is a matter of living with your surroundings in a way that in the long term always benefits the surroundings you live in, vegan, fruitarian or meat-eater. This is a human responsibility that should be written into every nation's constitution.

I have caught, slaughtered, skinned and cooked my own meat. Not on a regular basis but enough to know that anyone who eats meat should go through this process to understand what is involved emotionally and physically, for the eater and eatee.

Bob Darlington, Rawdon, UK

PHOTO NEWS



PA PICSELECT

A new Compassion in World Farming film, *Scandal: Subsidies Encourage Cruelty*, shows in explicit detail, the terrible suffering endured by EU cattle exported to the Middle East and North Africa for slaughter. The film shows the slaughter of German, Spanish and French cattle at a Lebanese abattoir. Before the slaughter, the animals are hung upside down by one leg from a rail and then dragged along to the slaughter point. At the slaughter point, the animal is not stunned into unconsciousness. Instead, its throat is cut while it is fully conscious and it is left to bleed to death, often taking the animal a long time to die in great pain and distress.

Air Traffic Controlled?

Last August rumours surfaced that UK transport secretary Stephen Byers wanted to 'streamline' planning procedures for projects of 'national significance', basically by reducing 'unnecessary delays' such as lengthy public enquiries. As environmentalists voiced their concern, the government sent assurances that the new procedures – 'will not prevent anyone, including environmental groups from objecting'. This was beside the point – the fear was not whether people could object at all, but whether they would be given adequate time to prepare their case.

By early December the official paper appeared, and one month later the 'freedom to fly' lobby, consisting of everyone with an interest in the expansion of the aviation business, called for heavy investment in airport

capacity. Just one week on from the lobby's call and three new runways – at Gatwick, Heathrow and Stansted – were already being considered by Whitehall ministers. There is even talk of an all new airport right in the Thames estuary.

Byers insists he is just 'considering' and that a paper to be published around Easter will set guidelines for the development of UK aviation. The current mood, however, especially with the possibility of having to relocate Heathrow's £1.3bn night flight business and 11,000 related jobs, suggests a governmental thumbs up. While EU Commission is set to take control over the disputed 'open skies' aviation agreements, UK government forecasts point to a doubling of air traffic in the next 20 years ■

Sterile Harvest

The world's two largest agrochemical and seed enterprises – Syngenta & DuPont – have won two new patents on Genetic Seed Sterilisation. According to the ETC group, the biotechnology industry continues to aggressively pursue the development of genetically modified seeds that are engineered for sterility. 'Terminator' has been widely condemned as an immoral technology that threatens global food security, especially for the 1.4 billion people who depend on farm-saved seed. If commercialised, the technology will prevent farmers from saving seed from their harvest for planting the following season ■

Seed saving

In response to the contamination of Mexican farmers' maize varieties by DNA from GM maize (*vol 32/1*), an initiative to save the cultural and genetic heritage of the Maya peoples has been launched at the first autonomous, indigenous school in Chiapas, Mexico.

The initial effort focuses on corn seeds, with plans to diversify the collection to beans, squash, chilli, and medicinal plants in the near future. Campaigners are pressing for the issue of GM contamination in centres of genetic diversity to be addressed by governments at the forthcoming Conference of Parties to the

Terror and separatism

According to Memorial, Russia's leading human rights group, Russian soldiers beat, robbed and tortured civilians in the Chechen village of Tsotsin-Yurt over the New Year holidays. Six villagers arrested by Russian troops are still missing, and Lord Russell-Johnston, head of Europe's largest human rights organisation, said in late January that human rights violations in the Chechen region continue unabated.

Meanwhile Sergei Yastrzhembsky, chief Kremlin spokesman for Chechnya, warned Radio Liberty over its coverage of the war in Chechnya, saying that it had a pro-rebel bias and its licence might be revoked.

At the same time, foreign ministers from China, Russia, Kazakhstan, Kyrgyzstan, Uzbekistan and Tajikistan agreed on measures to strengthen their Shanghai Cooperation Organisation's primary mission – the fight against militant Islamic forces. Nonetheless, a report published by the Chinese government aimed at proving the link between its own militant Muslim separatists and Osama bin Laden has been denounced for the paucity of its evidence by foreign diplomats, Western scholars who have studied Xinjiang, and exiled activists from the Uighur community ■

Convention on Biological Diversity in the Hague (8-26 April); at the World Food Summit+5 in Rome (10-13 June, 2002); and the Johannesburg World Summit on Sustainable Development (26 Aug-4 Sept 2002) ■

NOTES &

'Some of the very outspoken people may not be in the conference. But it's not because they're outspoken.'

Klaus Schwab on the World Economic Forum

'He has become irrelevant, not to mention irresponsible in his conduct.'

Trent Lott, US Senate Minority Leader on Arafat

'This is just madness, it is directly counter to the whole peace process.'

Anna Lindh, Swedish Foreign Minister... on the fear that the US might cut off relations with Arafat

'It's a system that has allowed me, during my life as an entrepreneur, to achieve good results.'

Silvio Berlusconi, Italian Prime Minister, on offering his Cabinet ministers prizes or punishment to do a good job.

'We are an open and democratic country, but we don't accept lessons from anyone.'

Renato Schifani, a senior senator from Mr Berlusconi's Forza Italia party

'The earlier the Austrians get rid of Haider, and his post-fascist party, the better.'

Czech Prime Minister Milos Zeman, calling Haider an 'Austrian political Chernobyl'

Zeman 'is a Communist who has tried his hand at democracy by changing his clothes'.

Joerg Haider, leader of Austria's far-right Freedom Party

'...we imposed a protectionist measure just like the ones used in the United States.'

Mexican Senator Jesus Ortega on the decision by the Mexican Congress to impose a tax on soft drink producers using fructose imported from the US

'Ministers talk a good game on renewables, but the reality is this government has been central to promoting dirty energy in the developing world. Burning fossil fuels in Africa or Asia is just as dangerous as

QUOTES

burning them here, so exporting dirty technology won't protect us from the consequence of climate change.'

Steven Tindale, executive director of Greenpeace UK

According to Greenpeace, the British government's Export Credit Guarantee Department (ECGD) has underwritten fossil and nuclear power generation projects over the past decade to the tune of \$9.18 billion. The UK supported projects, mostly in Asia and Africa, were expected each year to pump out at least 51 million tons of CO₂, a major contributor to global warming.

The UK gave £82 million to overseas energy development in 1999, 0.07 per cent of which went to renewable projects.

'I would like to be able to overtake our competitors in profitability and size... we have built up a lot of relationships and understand a lot about doing business in Russia, because we have been at this for five years. Our philosophy is to work through a Russian company. They are pretty good. How else do you explain the 6 per cent compound annual increase. We would like to be back in Iran. We are very struck by the precedent set by TotalFinaElf and Shell that we believe we should be able to follow.'

Sir John Browne of BP – beyond petroleum?

'I understand the war on terror is going to go beyond 2002. I have no unrealistic aspirations about a quick calendar.'

US President George Bush

\$318bn is the spending bill that President Bush signed for the Defence Department for the budget year that began on 1 October.

'The Geneva Convention is there to provide a floor below which civilised nations shouldn't fall.'
Tony Lloyd, former foreign office minister

'I think that the people that have been most shrill about the subject, once they have more

WHAT'S IN THE PIPELINE?

International lenders have 'expressed keenness' to provide capital for the planned Baku-Tbilisi-Ceyhan (BTC) oil pipeline in Central Asia, reports AFP. Michael Townshend, BTC general manager, said the European Bank for Reconstruction and Development and the International Finance Corporation had been approached about providing credits. 'They are keen to work with us and provide finance for the project based on initial discussions,' he said. 'We have also been in touch with European, US and Japanese export credit agencies and they have also expressed their keenness to take part in the project.' International lending institutions will be asked to put up 70 per cent of the capital for the \$2.875bn pipeline, with the rest provided by shareholders. Townshend said the consortium 'anticipated' that lenders would ask for an interest rate of about 15 per cent on loans for the pipeline. He also dropped a heavy hint that US oil major ChevronTexaco, currently in talks about becoming a BTC shareholder, could take up to a 20 per cent stake.

The pipeline, due for completion in 2005, will run 1,743 km from the Azeri capital Baku, through Georgia to Ceyhan in Turkey. Some energy analysts have warned that the project is not commercially viable but is being pushed through by Washington for political reasons. The BTC consortium currently comprises BP, which is also the operator, the Azeri state oil company SOCAR, ExxonMobil, Statoil, ENI Agip, Unocal, Delta Hess, Devon, TPAO and Itochu ■



AP PHOTOS

A NEW OIL GAME

Yukos, the second largest oil producer in Russia, said in January that it planned to raise output between 17 and 20 per cent this year to about 70m tonnes, regardless of recent pressures from OPEC for export cuts. A week later TotalFinaElf announced the formation of a 50/50 joint venture with OAO Yukos to develop and explore the Shatsky area of the Black Sea.

At about the same time, Geidar Aliev, the Azerbaijani President and his Russian counterpart began work on a partnership that would allow the two countries to reach a long-stalled deal on dividing sectors of the Caspian Sea. Use of Caspian resources, believed to hold the world's third largest oil resources, was originally defined by treaties between Iran and the Soviet Union, but when the Union collapsed several countries laid claims to its riches.

Russia, Azerbaijan and Kazakhstan want the seabed to be divided into national sectors, with the water available for common use, but that would leave Iran with the smallest proportion. Therefore that country wants the seabed to be divided in equal proportions. However, Russia and Azerbaijan have already signalled bilateral deals with Kazakhstan to draw a line between their respective sectors of the Caspian and a meeting of the leaders of Caspian states is planned for later this year.

Meanwhile the 980-mile pipeline between the Caspian Sea and Black Sea opened late last year, establishing the largest single American investment in that region. The pipeline's partners again include Russia, Kazakhstan and several oil companies owned by Chevron and ExxonMobil.

And finally there is the BTC pipeline. The construction of a pipeline between Afghanistan and Pakistan, impossible in the pre-11 September world, is now politically possible for the first time since Unocal and Bidas competed for the Afghan rights. With OPEC losing power, Russia and America will both have a large share in the exploitation of the Central Asian oilfields ■

Beating about the Bush

The Bush administration, in its concerted effort to open up as many areas as possible in the US and the rest of the world to the oil industry, is pushing the state of California to accept offshore oil drilling without state mandated environmental reviews.

The administration in January filed legal briefs in a federal appeals court asking to overturn a decision, which halted proposed oil and natural gas exploration.

The federal government's briefs to the Court of Appeals contends that US District Court Judge Claudia Wilken was wrong when she ruled in June last year that leases could be extended only upon California's approval and proper environmental review.

Over in Florida the National Park Service has given its initial approval to drill thousands of holes and detonate thousands of underground explosions in a search for oil beneath Big Cypress National Preserve. Collier Resources Company, which owns the mineral rights to Big Cypress National Preserve, plans to conduct exploratory drilling; forecasting that as much as 25 million barrels of oil may lie beneath the preserve.

The Big Cypress National Preserve provides the state's last havens for the endangered Florida panther and red cockaded woodpecker, black bears, bald eagles, Florida alligators and dozens of other protected species.

Meanwhile a report published by the US Green Scissors Campaign estimates that subsidies to oil, coal and nuclear power industries would double to \$62 billion if Senate approves a House drafted energy bill (HR4).

President Bush in his State of the Union Address in January called to pass HR4. In his address, which comes at the end of his first year in office, Bush announced that: 'Good jobs also depend on reliable and affordable energy. This Congress must act to encourage conservation, promote technology, build infrastructure, and it must act to increase energy production at home so America is less dependent on foreign oil.' ■

knowledge of the subject they will stop being so shrill.'

Donald Rumsfeld, US defence secretary

'If someone looked down from Mars on the United States for the last three days, they would conclude that America is what's wrong with the world. America is not what's wrong with the world.'

Rumsfeld again

How Detainees Will Be Interrogated in Guantanamo Bay:

'Well it's a – it's a very carefully crafted technique. First they'll take total control of these prisoners, which they've got to do for security purposes anyway... to basically make sure they understand that the US is in total control of them. So I mean all of that is part of making sure that they don't have a touchstone that's comfortable to them... totally out of touch, off balance, unstabilised. It's humane... it reinforces that we are in total control, which in fact we are.'
Kelly McCann, CNN security analyst and president of Crucible Security

'What looks, smells and kills like terrorism is terrorism.'

Jeremy Greenstock, British UN envoy

'Rebuilding Afghanistan will require a lot of money... the Afghans... must be in the driver's seat of their country's reconstruction, working closely with the assistance community. A practical road map to development must be drawn up with a comprehensive vision – one that is owned by all development partners. The reconstruction of Afghanistan must be country-focused not agency-focused.'

James Wolfensohn, President of the World Bank...

...In other words...

'When we talk about will the money get to the right place? The answer is with difficulty.'
Wolfensohn again

'We broadly support increased use of grants in very poor

US urges Europe to lift GM ban

The US government wants the EU's de facto moratorium on genetically modified organisms to be lifted as soon as possible, according to documents obtained by Friends of the Earth Europe. The documents, submitted by the US to the Technical Barriers to Trade Committee of the World Trade Organisation, show the country's opposition to EU plans for compulsory tracing and labelling rules for all food and animal feed containing genetically modified organisms (GMOs). They also contend that this labelling proposal is 'unworkable and not enforceable', and would erode consumer confidence (sic), and that the 'core problem facing the European Union in biotechnology' is that EU Member States have the final say in the authorisation procedure.

Consequently the EU Commission in January proposed an action plan in favour of biotechnology; urging EU governments to adopt new intellectual property rules and to

strengthen the capital base biotech industry (see 'Life sciences and biotechnology: A Strategy for Europe'). The action plan's proposals include an 'information' campaign designed to counter the arguments put forward by environmental groups. In January the International Trade Reporter wrote that a decision to lift the European Union's moratorium on new approvals of GMOs could be made at the EU's next leaders' summit, scheduled for 15-16 March in Barcelona, Spain. Alan Larson, US undersecretary of state for economic, business & agricultural affairs, said in remarks to the Washington International Trade Association that many of his European trade counterparts 'have focused on the March Barcelona summit as their target for getting this turned around, so it'll be real interesting to see if they can do that.' Meanwhile the latest EU Commission poll shows 79.9 per cent of people don't want GM products ■

China begins destruction for the Three Gorges Dam

In late January China began destroying the first of 22 cities that will be submerged by rising waters from the world's largest hydroelectric power project – the controversial Three Gorges Dam. Demolition crews began blowing up buildings in Fengjie county, where a 2,300-year-old town was chosen as the first to be destroyed for the mammoth project, the official Xinhua news agency said. Some 1.3 million people are eventually to be relocated for the dam, due for completion by June 2003.

The \$27bn project has been plagued by massive corruption, with millions of dollars in resettlement money embezzled. Residents who have been forcibly relocated, but not given adequate compensation, have



staged protests, with some even moving back to their original homes. The project has received further strong criticism from experts

questioning the need for it and warning of the damage it will have on both the environment and the country's archaeological treasures ■



DID YOU KNOW?

LORD HASKINS, CURRENTLY TRYING TO SAVE BRITAIN'S FARMING SECTOR, HAS SOLD NORTHERN FOODS' SKI AND MUNCH BUNCH BUSINESS TO MULTINATIONAL NESTLÉ FOR £145M. MORE THAN 3,000 NORTHERN FOOD EMPLOYEES HAVE BEEN ASKED TO 'REAPPLY' TO NESTLÉ.

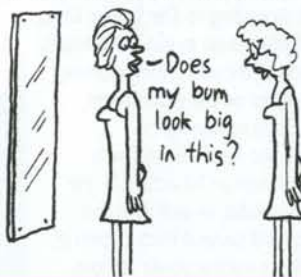
CORPORATISTS WHO HAVE BEEN SPLICED WITH SHARK GENES



'REALITY TV' PRODUCERS WHO HAVE BEEN SPLICED WITH LEMMING GENES



SUPER MODELS SPLICED WITH STICK-INSECT GENES

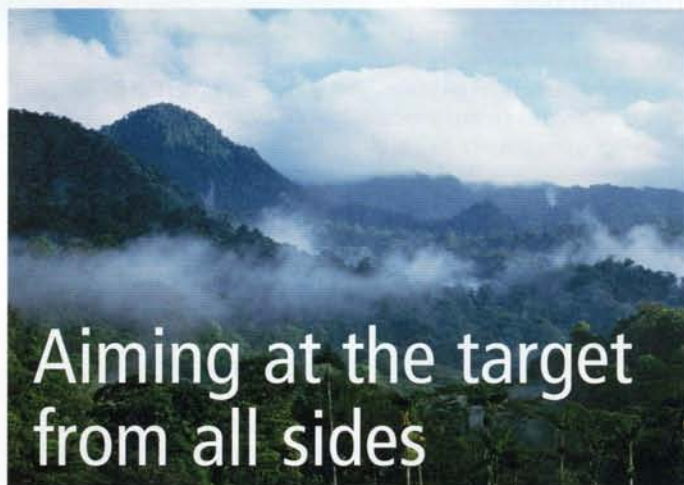


COMMUTERS WHO HAVE BEEN SPLICED WITH SARDINE GENES



The \$900 million credit awarded by Westdeutsche Landesbank (WestLB) to the OCP Consortium for a pipeline project in Ecuador's Mindo Nambillo Cloudforest Reserve became the centre of a political controversy in the German state of Westphalia in January (see *Campaigns*, vol 31/2). During a hearing at the regional parliament, WestLB employees admitted that the project does not meet World Bank standards, but instead only Ecuadorian environmental legislation. However, in previous statements WestLB had assured that the project did in fact meet World Bank environmental standards – a requirement for all projects financed by WestLB.

WestLB's admission comes after the World Bank wrote to the OCP consortium to 'express our deep concern about the impact of the construction of the OCP pipeline'. Ian Johnson, the World Bank's top environmental officer, said he did not accept OCP and WestLB officials' claims that the project complied with



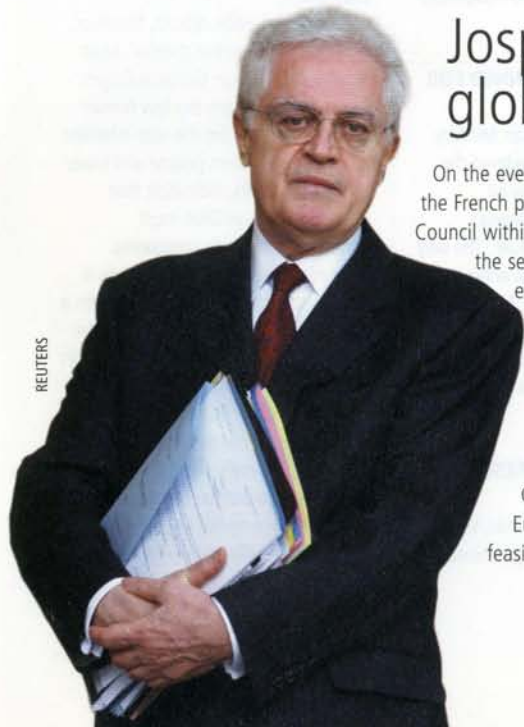
all applicable World Bank standards. Meanwhile, local residents, students, and environmentalists have been engaged in a permanent peaceful encampment in the Mindo Nambillo cloudforest. Several activists have climbed trees and built platforms while others have chained themselves to the trunks to ensure that construction crews do not enter the protected area.

Faced with escalating protests and the possibility that the Parliament of Westphalia might cancel WestLB's credit, OCP has announced that it will abandon construction works in the Mindo cloudforest until the end of the rainy season in April.

To read more about the decision taken by the Parliament of Westphalia visit Rainforest Action Network's website on www.ran.org ■

Jospin calls for mastered globalisation

On the eve of the anti-globalisation forum in Porto Alegre, Lionel Jospin (left) the French prime minister called for setting up an Economic and Social Security Council within the United Nations, in order to introduce global rules based on the search for common well-being. With three months to presidential elections in France, Mr Jospin said that the present G7 has no legitimacy for being the arbiter of global rules. Jospin also called on donor countries to commit to reduce poverty by 50 per cent until 2015. The French premier urged these countries to commit to such a pledge at the Monterrey Conference (Mexico) in March. More debate on globalisation is set to kick off with the recent launch of a report on globalisation published by the European Commission. EU finance ministers last autumn commissioned the European Commission to prepare a study on globalisation and the feasibility of a Tobin tax on the movement of capitals ■



REUTERS

N&Q CONTINUED

countries, but not the US proposal because of its failure to guarantee funding in the long term. The problem with the US is that they never put their money where their mouth is.'

Kevin Watkins, senior adviser at Oxfam

According to www.public-i.org the average net worth of the top 100 members of the Bush administration is \$3.7m – \$12m.

'There is a privilege here that we want to conserve – for not just this administration but for future generations. The powers and prerogatives of the executive have been eroded, and we're going to stop that.'

Mary Matalin, senior Cheney adviser – on resisting disclosure with regards to Enron

According to Friends of the Earth/US, Enron received \$2.4 billion for its overseas energy projects between 1992 and 2000 from the Overseas Private Investment Corp and the Export-Import Bank of the US in the form of loans, insurance and guarantees.

'What everybody's going to find is that this administration will fully investigate issues such as the Enron bankruptcy...'

President Bush

'I have not met with him personally... Ken Lay is a supporter...'

Bush again

'I was outraged... that employees didn't know all the facts about Enron. My own

continued over

mother-in-law bought stock last summer and it isn't worth anything now.'

And again

'The American people are tired of partisan witch-hunts and endless investigations.'

Ari Fleischer, White House Press secretary

'There is something about the White House that leads each new administration to believe they are exempt from the usual rules of scandal.'

Larry J Sabato, University of Virginia political scientist

'Companies come and go. It's part of the genius of capitalism.'

Paul O'Neill, US treasury secretary referring to Enron

'...a broken model.'

Eduardo Duhalde, Argentina's President referring to the US backed free-market approach.

To 'strengthen our commitment to market-based reform, not weaken it'.

George Bush's reply dangling a carrot by promising to support new international loans for Argentina

'We don't need the IMF to be telling us every two minutes what course we should take. They're doing it from 10,000km away and without much knowledge of the situation.'

Jorge Tadesca, Argentina's vice minister for the economy

According to Inventir, foreign investment to Argentina between January 1994 and October 2001 came to \$97.95bn; of which \$31.07bn was from the US, \$25.7bn from Spain and \$10.8bn from France.

'Many of the poorest nations have in fact been regressing during the last couple of decades. I fear the gap between the rich and poor will continue to grow.'

Fleming Larsen, European Director of the IMF during a debate on neo-liberalism.

'If you look closely at Siemens, we are not so German. In Germany we are a German'

ETHICS

FTSE4Good is set to lift its ban on companies producing tobacco, arms and nuclear power (see debate, vol 31/9). According to *The Sunday Times* it will allow them to join the listing by the end of the year if they improve their record on the environment, health and human rights.

FTSE4Good has held talks with British American Tobacco, BAE the arms specialist; as well as British Energy and General Electric, both of which run nuclear power stations.

CLEARLY CLEANING

The Dutch government announced in January that it had signed the first international contract with the World Bank to develop clean energy projects in developing countries with the aim of slowing global warming. The three-year, \$40 million contract with the World Bank's International Finance Corporation will also provide the Netherlands with credits toward its CO₂ reduction target laid out in the Kyoto Protocol.



COLLAPSING GLACIERS

Some 62 of Switzerland's glaciers suffered from heavy melting last year, and have shrunk considerably, according to an article in *Der Spiegel*. Research carried out in Zurich measured, amongst others, the Trift glacier, where the loss came to a total of 250m.

Researchers now fear that the water from melting glaciers will rise up and break through the ice cover, potentially leading to flash floods. If this were to happen on the Trift glacier, it could flood the nearby Gadmer valley and the community of Innertkirchen – which is home to Switzerland's second largest hydro-electric dam, the Oberhasli.

NUCLEAR SOLUTION?

In January the Finnish cabinet proposed the construction of a new nuclear power station, with the decision to be ratified by a parliamentary vote later this spring. The

has, according to President Vicente Fox, neither the capital nor the technology to extract the volume of resources he would like. He therefore wants to significantly expand the presence of foreign energy companies so that they

BEATING WASTE IN IRELAND

A household's waste recycling scheme in Galway has seen a dramatic reduction of 56 per cent in the amount of waste going to landfill from the city over the past year. The figure exceeded all expectations of the local authority, which had set a target of 50 per cent when the scheme was launched last April. 'I don't know of any other place in Ireland which has introduced such a progressive recycling system,' said Mr. Tierney, the City manager. 'We have reached our target 12 years ahead of the national target.'

government argues that the new plant – the country's fifth – will help to both stabilise electricity prices and replace current coal-fired power stations – thus reducing CO₂ emissions linked to global warming. Finland's greenhouse gas emissions have seen one of the largest increases in the world since 1990.

BLOOD AND GOLD

A local man was shot at close range by a security officer for BRIMOB, the Indonesian government's military style police force, at Aurora Gold's Indo Muro Kencana mine in Indonesia. In a case study of the ongoing conflict at mine, which is located in a remote area of Central Kalimantan that is inhabited mainly by indigenous Dayak people, Oxfam said: 'People who were legally earning an income on what they regarded as their own traditional land – mining its natural resources – were unilaterally labelled by the government as illegal squatters when a foreign company appeared. They were forcibly removed, their housing and equipment seized and destroyed.'

MORE REFINERIES PLANNED FOR NIGERIA

In early January the Nigerian Ministry of Petroleum Resources declared the bidding open for more new oil refineries aimed to 'end Nigeria's dependence on imported fuel'. The very next day, Royal Dutch/Shell announced that, together with French, Nigerian and Italian consortium partners, it was poised to approve a total of £5.2bn of new investment in Nigerian oil and gas in the coming year.

MEXICAN PLANS FOR RESOURCES SELL OFF

Petroleos Mexicanos or Pemex, the Mexican national oil and gas monopoly

can sink thousands of wells. However, Mexico's constitution states that the national government has exclusive ownership rights to oil and gas reserves specifically in order to keep foreign companies out. Regardless, Fox is determined to 'reform the nation's inefficient energy sector' so as to attract billions of dollars in private investment. He has also discussed with President Bush the 'need for a coordinated North American energy plan'.

GENETIC DOGMA – OUT OF DATE AND OUT OF TOUCH

The biotech industry relies on a 40-year-old and outdated theory that DNA genes are in total control of inheritance in all forms of life, argues Dr Barry Compton in a study published in *Harper's Magazine*. The biologist argues that according to this theory, called the 'central dogma', the outcome of transferring a gene from one organism to another is always 'specific, precise and predictable' – thus safe.

Several scientific reports, however, contradict the 'central dogma'. Most notably, the Human Genome Project found that there are too few human genes to account for the vast inherited differences between people and lower animals or plants, indicating that agents other than DNA must contribute to genetic complexity. The orthodox theory also assumes a one-to-one correspondence between a gene's chemical composition and the structure of the protein it produces. Yet a single gene can give rise to a variety of different proteins, resulting in more than a single inherited trait per gene. Therefore, a gene's effect on inheritance cannot be predicted from its chemical composition alone. In short, 'genetically engineered crops

represent a huge uncontrolled experiment whose outcome is inherently unpredictable and the results could be catastrophic,' says Dr Commoner.

THE FRUITS OF BIOTECH RESEARCH

An American Study, led by Oregon State and Portland State, will examine the way universities and the private sector share the agricultural biotechnology they develop. The \$2 million, three-year study, funded by the US Department of Agriculture, will look at how researchers share information with each other and with the public, as well as the social and economic

THE CASE AGAINST LANDFILLING HAZARDOUS WASTE

Women living within three kilometres of a hazardous waste landfill site have a 40 per cent greater risk of conceiving a child with a chromosomal birth defect, such as Down's syndrome, says a study published in medical journal *The Lancet*. Although the study undertook research in the surroundings of 23 European landfills that accept hazardous waste, and although eight of them are located in the UK, Britain's waste industry dismissed the research as 'irrelevant and sensationalist' and that the article 'relies on an obsolete, superseded and widely criticised benchmark'. The UK health ministry

warns the US National Academy of Sciences. Back in the 1940s, when the federal government was concerned with protecting farms, it sliced off about 230km of river bends and built hundreds of dams and dykes. This has led to a 90 per cent decline in sandbars along the river, which in turn has meant the decline of dozens of species which nested on them.

ANIMAL FEED AND HUMAN HEALTH

Four European countries were trying in January to trace animal feed containing a potent antibiotic with the potential to halt the production of human blood cells. German state authorities said they were investigating ingredients imported from The Netherlands tainted with chloramphenicol, used against anthrax and typhoid. Contaminated shrimps imported into The Netherlands from the Far East had become part of a consignment of 188 tons of fish scraps shipped to a German feed plant.

ANIMAL FEED AND HUMAN HEALTH, PART 2

An investigation co-ordinated by Derbyshire police has found that hundreds of tons of rotten meat have been sold to consumers through UK supermarkets, schools and restaurants. The meat – unfit even for pet food – entered the human food chain via ready-made products, such as pies and burgers. Tesco, Waitrose, Safeway and Sainsbury are amongst the stores to have been affected, notes *The Sunday Times*. It is estimated that as much as 1,000 tons of waste meat could have entered the human food chain during the past six years.

DAM ENRON

The US National Security Council coordinated a multi-front effort last year to help Enron settle a dispute with the Indian government, which the energy company hoped would deliver \$2.3bn in the weeks before declaring bankruptcy. Administration officials said their efforts were intended to protect US taxpayers' interest in the troubled Dabhol power plant – OPIC provided \$160m in loans and \$180m in risk insurance; the Export-Import Bank lent the project \$300m.

The \$3bn power plant, 65 per cent owned by Enron, was located south of Bombay and built as India began to open its state-run economy. The nation's biggest foreign investment by far, the plant drew opposition from environmentalists, Indian nationalists and the World Bank.

Royal Dutch/Shell, TotalFinaElf and Gaz de France have now joined the bidding for the \$2.9bn plant.

FREEING BURMA FROM BELOW

The Spiegel Group, a top US mail-order retailer with nearly \$4 billion in sales in 2000, announced in a letter to the Free Burma Coalition that it will not accept merchandise from the Southeast Asian country of Burma. Spiegel joins a growing list of companies that have made similar pledges in the past 20 months against association with the pariah nation, reviled for its use of forced labour. Ames, the US department store chain, joined the list in December, after being threatened with a holiday boycott. Recently the Denmark-based IKEA has refused to sell the country's goods and the Norwegian Olympic team rejected the wearing of the Triumph logo or its products unless the company pulls out of Burma. In response, Triumph International announced in late January that it will close down its Burma-based manufacturing site. Despite a 1997 ban on new US investment, Burmese apparel imports to the United States alone increased over 800 per cent from 1995 through 2000. Opposition leader Aung San Suu Kyi (right) has urged companies stay out of Burma until democracy is restored. For more information visit www.burmacampaign.org.uk



responded by confirming 'more research'.

FISH OUT OF WATER

Vast numbers of farmed salmon are being discarded in the seas off Chile in order to improve low international market prices, admitted the Executive Director of Fjord Seafood, Paul Birger Torgnes. According to Torgnes, Fjord Seafood alone has discarded around 13 million fish. Tulio Osses, legal adviser to Chilean artisan fishermen, contends that 'several salmon breeding centres are also releasing specimens directly into the marine environment, because it is considered senseless to continue feeding them if they are not going to reach the market'. According to Ecoceanos, more than four million farmed salmon have entered the marine environment since 1993.

MISSOURI MISERY

The Missouri River and its ecosystem will continue to deteriorate unless its natural flow is significantly restored,

support for biotechnology research programmes and the long-term effects of university relationships with private industry.

AVONMOUTH NUCLEAR INCINERATION HALTED

The owners of the Medipower waste incinerator in Avonmouth decided in January to withdraw their application to burn low-level nuclear waste from the Harwell site following efforts by the Shut Oldbury Campaign last summer.

Last June the Environment Agency (EA) set up a consultation regarding the application but campaigners protested that no local environmental or anti-nuclear groups had been notified.

Consequently the EA delayed the consultation while local groups and individuals prepared their case, part of which was a study showing an increase in breast cancer deaths between Avonmouth and the Oldbury nuclear power station along the Severn coast (see www.llrc.org).

company but if you see our operations in Brazil, you will think we are a Brazilian company. In China we are a Chinese company. This is one of our strengths. We have the ability to take in and manage the attributes of individual cultures and so become a global company.'

Heinrich von Pierer, Siemens chief executive, on what makes a company truly global

'We do not think this fair and it is not fair to our shareholders, so by God, we are going to fight this.'

Dave Lesar, Halliburton's CE vowing to fight a huge backlog of asbestos cases. Halliburton is fighting off a roster of 146,000 still-pending asbestos claims and an additional 100,000 claims related to the 1992 spinoff of Harbison-Walker from Dresser Industries. Halliburton acquired Dresser in 1998.

'It's not ethics that will determine how this industry goes forward – it's economics.' Dr Whitelaw, Roslin Institute, Edinburgh

Marketing expenditure to promote drugs for anxiety, depression and related illnesses in the US for January – October 2001:

Zoloft/Pfister	\$45,993,698
Sarafem (Eli Lilly)	\$42,467,315
Paxil (GSK)	\$32,363,685
Ambien (Pharmacia)	\$31,666,217
Prozac (Eli Lilly)	\$31,554,601

'What is the company now going to do to undo the harm it's done?'

Charles Medawar of Social Audit on the FDA's ruling that several makers of anti-depressants will have to issue new warnings to patients and doctors.

'The ultimate test will be made by individuals in the privacy of the polling booth, because there is going to be a referendum on this.'

Jack Straw, British foreign secretary on the euro

'Can we stay out of the single currency forever? I do not believe we can.'

Peter Hain, minister for Europe

campaigns

- Deforestation of Kenya • Yosemite sham • Incinerating Ireland • Food irradiation in the US
- Shell out in China • Still testing on animals in Europe • Genetic information in the UK

KENYA Forests for Life

'If we do not protect our remaining forests, Kenya will become progressively thirstier, hungrier, uglier and poorer. The forest excisions are like an axe hanging over the future of our country.'
– Kenya Forests Working Group

In a country plagued by drought, forests are critical for water conservation, yet in Kenya forests under protected status remain on less than 2 per cent of the land. Now, in a bid for votes, the Kenyan government has rescinded protected status from 4 per cent of the remaining forests, claiming that the territory is needed to open settlements for the country's many landless people.

Whatever the government's professed reasons, the major beneficiaries of this scheme will be politically connected people and loggers as well as settlers from other regions of the country. Indeed three powerful logging companies – Pan African Paper Mills, Raiply Timber and Timsales Ltd – are already clearing the newly opened forest tracts.

Most disturbingly, the indigenous Ogiek people will lose much of their traditional forest territory if this scheme goes forward.

Hardest hit are the Mau and Mt Kenya forests, known as two of the country's five 'water towers'. The cutting of the Mau Forest, warns a coalition of environmental organisations called the Kenya Forests Working Group, will significantly reduce the ability of the forest ecosystem to cope with drought since

although the logging will bring more land under cultivation, it will reduce the productivity of current farms and tea plantations. Already microclimates critical to agriculture are suffering from the effects of deforestation.

Forest destruction will be a major blow to Kenya's biological diversity, since forests harbour 50 per cent of Kenya's plant species, 40 per cent of mammal species, 35 per cent of butterfly species and 30 per cent of bird species – all on only 2 per cent of the land mass. Specifically, logging in the Mau will have a devastating impact on water quality and level in Lake Nakuru,

home to the world's largest concentration of flamingoes, which are supposed to be protected under international law (Ramsar Convention). The forests are also home to indigenous peoples that live by hunting game and gathering food plants, herbs, and honey within the forests. The survival of the Ogiek people depends on their continued access to the mountainous Mau Forests, where they have lived as hunters and gatherers from time immemorial. The Maasai also pasture their animals in the Mau Forest.



BBC WILD

make a difference

Send polite letters to Kenya's President and Minister of the Environment, urging them to revoke the forest excisions announced on 19 October, 2001. Write to: His Excellency Daniel Arap Moi, President Republic of Kenya, Office of the President, PO Box 30510, Nairobi, FAX: +254 2 210150, (salutation: Your Excellency). Hon Joseph J Kamotho, EGH, MP, Minister; Ministry of Environment and Natural Resources PO Box 30521, Nairobi, FAX: +254 2 727622 (salutation: Honourable Minister). Please copy your letters to: Kenya Forests Working Group, PO Box 20110, Nairobi. Tel/Fax +254 2 571335 or email kfwg@wananchi.com

USA Accessing Nature

It has taken locals and national park employees roughly 20 years to sort out a plan to protect the Yosemite Valley against overcrowding and car gridlocks, while still ensuring access for visitors. Already it is under threat.

In early January Representative George R Radanovich visited the park and this with the expressed intention of lobbying National Park Service Chief Fran Mainella to change, amongst other things, vehicle restrictions in the valley. According to the *Los Angeles Times*, Radanovich contends that environmentalists 'want to make the park so hard to get into that people just won't come'. This however, is not the case. By limiting parking spaces and campsites, the plan will return parts of the valley to a natural state while a shuttle service will take visitors from out-of-valley parking lots into the park. The plan also envisages the restoration of meadows, particularly along the Merced River, and will rid the area at the foot of the valley from its traffic madness. Over the past five years, the park has made incredible progress in restoring the valley yet Radanovich is apparently more influenced by the views of tourist-related businesses outside the park, which fear that the plan will lead to fewer visitors.

make a difference

Call Representative Radanovich's free comment line on +1 800 506 9463 or go to www.house.gov/radanovich and send an email. Encourage Park Service Director Fran Mainella not to give into Radanovich's pressure; call +1 202 208 4621 or email fran_mainella@nps.gov

IRELAND The Battle for the Boyne

In Irish mythology, the Well of Segais is the ultimate source of wisdom. It is also the source of the River Boyne, so called after the goddess Boann. The Boyne held a mystic place among Irish poets, and from its waters Fionn mac Cumhail caught the salmon of knowledge. Boyne valley, which the river runs through, is home to many of Ireland's finest historical and archeological sites – the historic town of Drogheda; the Celtic Crosses at

Monasterboice; Old Mellifont Abbey; Slane Castle; the county town of Navan and Trim Castle. The jewels in the crown are the site of the Battle of the Boyne and the UNESCO protected passage tombs. The most famous of these is Newgrange, where each year on the winter solstice the sun shines through a roof box, up the long passage and into the burial chamber, heralding the start of a new year.

Now all this is at risk, from an incinerator.

Despite

vehement local opposition, last summer Belgian company Indaver received planning permission from Meath County Council for the construction of Ireland's first ever waste incinerator, to be built close to



the 'footprint' of the Battle of the Boyne, between Drogheda and the village of Duleek. According to Indaver the incinerator will be operational by 2005.

Nor does it end there. Indaver has already applied to Cork County Council for the construction of a toxic waste incinerator dealing with hazardous waste at Ringaskiddy in Cork Harbour, and a municipal solid waste incinerator at the same location. There are plans for building a Fibrowatt incinerator at Carrickroe in County Monaghan. And an incinerator in Dublin's Ringsend that will process 500,000 tonnes of waste a year is going through the process of an

Environmental Impact Assessment right now.

Incinerators are 'cancer factories' – they emit a poisonous cocktail of substances into the air, including some of the most dangerous known to man, such as dioxins and furans, as well as heavy metals and other highly toxic substances. According to the World Health Organisation, municipal waste incinerators are the greatest source of dioxin in the world and about 40 per cent of the dioxin production in Europe is due to incineration. Emissions from incinerators not only have a direct impact on human health but on everything within the smoke's reach – ie all the food produced in the region, be it crops or animals. No safety or health standards whatsoever are capable of resolving this dangerous reality.

The Boyne incinerator will emit dangerous substances – all day, every day, for the next 25-30 years; burning up to 170,000 tonnes of waste per annum. On top of this, 25-30 per cent by weight of what is burned will remain as ash – some of which will be hazardous – which will have to be disposed of using landfill and other methods. So far, it has not been announced where and how Indaver would dispose of the over 50,000 tonnes of ash (some of which is highly toxic) which it would produce annually.

Not only is incineration dangerous and



ugly, it is also an expensive way to deal with waste. The cost for the Boyne incinerator is estimated at £60 million, not including running costs. The burden of paying for this monster, needless to say, will be carried by local communities, farmers and businesses. Incineration doesn't solve the waste problem – it just makes it more dangerous by generating dangerous emissions and toxic ash and – in the case of Boyne – at anyone's but Indaver's expense.

At a time when the Irish government's investment in waste reduction, recovery and recycling is paltry, it is clear that the risks posed by an incinerator are avoidable and therefore unacceptable. Ireland and the UK have some of the lowest levels of recycling in Europe, but rather than supporting real solutions – as plenty of other countries are – they seem determined for quick fix' non-solutions. Margot Wallström, Environment Commissioner at the European Union has said: 'We shouldn't send the bill to our children and grandchildren for the things we are doing.' The decision makers must be held to account and made to ensure that no chimney stacks will rise and cast their toxic clouds over the Boyne valley, its river, its people, its history and its future.



Write to: Francesco Bandarin, Director, World Heritage Centre, UNESCO, 7 Place de Fontenoy, 75352 Paris 07SP, France; email: f.bandarin@unesco.org Urgently copy your letter to: The Minister for the Environment, Noel Dempsey TD, Custom House, Dublin 1, Ireland; email: minister@environ.irlgov.ie. The Heritage Minister, Sile de Valera, 43-49, Mespil Road, Dublin 4, Ireland; email: tdonnelly@ealga.ie Please copy your letters to: The Battle for the Boyne, PO Box 1690, Drogheda, Ireland; email: thebattlefortheboyne@hotmail.com For more and excellent information visit: www.thebattlefortheboyne.com and www.noincineration.com as well as www.zerowaste.co.nz & www.greenpeace.org

make a difference

UK Shell poised to sign controversial deal

In early January, press agencies reported that Shell had signed a major agreement with Chinese energy company PetroChina to build and operate the controversial 'West-East' pipeline. According to the *International Herald Tribune*, Shell and its partners will take a 45 per cent stake in the pipeline project that will be 4,000km long and transport natural gas from the Tarim Basin in occupied East Turkestan (Xinjiang) to Shanghai.

PetroChina is currently the target of opposition from campaigners for its activities in Tibet and East Turkestan, which are exploiting Tibetan and Uyghur natural resources

and helping China to consolidate its political control of these 'troublesome' regions. The West-East pipeline and the Tibet pipeline were the subjects of a resolution tabled at the BP AGM in 2000, when BP was asked by shareholders to divest its \$578 million stake in PetroChina on the grounds of human rights concerns.

Although Shell staff contacted Free Tibet Campaign to contradict the press reports, saying that no contracts have been signed, Shell remains in negotiation with PetroChina over the \$14 billion project.

make a difference

Write to Shell, expressing your opposition to the project. Ask what guarantees Shell can provide that involvement in this project will not undermine Shell's stated commitment to safeguarding the welfare of local communities in the areas in which it operates. Ask the company what social and environmental impact assessments it has carried out, and how it proposes to ensure that the civil and political, social, cultural and economic rights of the Uyghur people will be respected and upheld.

Write to: Jeremy R A Frearson, Group Reputation Manager (Middle East and Asia), Shell Centre, London SE1 7NA, Fax: +44 (0)20 7934 7219
Insist on a reply and copy it to: Free Tibet Campaign, 1 Rosoman Place, London EC1R 0JY, U.K Fax: +44 (0)20 7833 3838. For more information visit www.freetibet.org

USA The right to fair choice

In 1999 the US Food and Drug Administration (FDA) published an advance notice for rulemaking and opened a docket on irradiated foods (Docket No. 98N-1038), which called for the consideration of alternative labelling language. Instead of the word 'irradiated', with its unpleasant yet honest nuclear connotations, the FDA wanted to be able to use the less emotive 'cold pasteurised' and 'electronically pasteurised'. The agency received nearly 20,000 comments on this issue, and according to the FDA's own tabulations, over 95 per cent of those rejected changing the current labelling requirements for irradiated foods.

During last summer the FDA also questioned focus groups of consumers in suburban Washington, DC; Sacramento, California; and Minneapolis, Minnesota. According to published reports, consumers in all three locations overwhelmingly rejected the use of such terms, calling them 'sneaky', 'deceptive' and 'a lie'. Under the FY 2001 Agriculture-FDA Appropriations Bill, Congress gave the FDA until March 2002 to come up with new labelling regulations. The food irradiation

Tell the FDA that the right to know about whether food is irradiated is fundamental, and not open to negotiation. Urgently write to: Dr Bernard Schwetz, US Food and Drug Administration, 14-71 Parklawn Building, 5600 Fishers Lane, Rockville, MD 20857; e-mail: bschwetz@oc.fda.gov See www.citizen.org/cmep for a sample letter. Copy your letters to: CMEP, c/o Public Citizen, 1600 20th St. NW, Washington, DC. 20009 or email CMEP@citizen.org

EU Cosmetic solutions covering up reality

In late November the EU Council of Ministers rejected the best opportunity yet for a total Europe-wide ban on animal testing for cosmetics and a ban on the sale of new animal tested cosmetics, supporting instead a very diluted set of proposals put forward by the Belgian Presidency.

They supported an EU animal testing ban 'but only where non-animal alternative test methods exist'. However, the mandatory replacement of animal tests where non-animal methods are available 'already' exists in EU legislation, so this proposal adds nothing new, and therefore will not see an end to animal testing for beauty products.

They also supported a proposal to ban the sale of animal tested cosmetics and ingredients, but once again 'only where non-animal test methods have been accepted into international regulatory

IT'S TIME TO GET LIPPY



ABOUT COSMETICS TESTING

guidelines', a process which itself can take many, many years.

MEPs will vote once again on the issue in the new year, in what is called 'the second reading'. It is absolutely vital that they are encouraged to reject the Council's compromise and hold firm to the proposals they supported at the 'first reading' in April last year. At that time MEPs voted overwhelmingly in favour of a complete EU ban on cosmetics animal testing plus a ban on the sale of new animal tested products. Such a sale ban is essential as it would stop companies outside Europe from animal testing if they want to continue selling their products in the EU market.

make a difference

Write to your MEP and ask for a reply – find him/her on www.europarl.org.uk/uk_meps/MembersMain.htm or call +44 (0) 20 7227 4300. Copy your letters to: The British Union for the Abolition of Vivisection (BUAV), 16a Crane Grove, London N7 8NN, UK; email: infor@buav.org For detailed information and updates visit www.buav.org/f_inforcentre.html

industry – dominated by nuclear and defence interests – has pulled out the stops trying to pressure the FDA and Congress to take away the right to know whether food has been exposed to high doses of ionising radiation – the equivalent of up to

1 billion chest x-rays. By the end of this month, the FDA will give its recommendations. It is therefore of the utmost urgency that the agency is compelled not to change or water down the current labelling requirements for irradiated foods.

UK Banking safely?

An initial 500,000 men and women between the ages of 45 and 60 are likely to be recruited to a new £60 million genetic research project by their doctors later this year. The so-called Biobank UK project will link genetic information from the samples to individual medical and lifestyle information. The hope is that in the long term this will help create new medicines, although the tests will also try to predict which people are 'genetically susceptible' to common diseases such as heart disease and cancer. In the absence of proper legal safeguards, this poses several threats.

Currently there exists no law to stop employers or insurers from using genetic tests to exclude people with the 'wrong genes' from jobs or insurance policies. According to GeneWatch this could lead to the creation of a 'genetic underclass'. People's genetic information could also be used for research they disagree with –

for example on behaviour, sexuality or intelligence. This could ultimately lead to 'designer babies', created by selecting embryos with the 'right genes'.

At the moment it is unclear who will have access to the individual genetic information or when it can be disclosed to third parties, such as relatives, the police or government. Commercial companies will be given access to the Biobank, enabling them to privatise people's genes by patenting them and in so doing limit medical research by others and keep the prices for new

treatments unreasonably high. Furthermore, many scientists have expressed concern that the information in the biobank will be inaccurate and incomplete, making its usefulness to medical research questionable and potentially leading to spurious links being made between genes and diseases.

In light of these serious loopholes the Biobank UK project must be put on hold until legal safeguards are in place and the scientific basis of the plan has been independently reviewed.

make a
difference

Funders of Biobank UK include the Wellcome Trust and the Medical Research Council. Write to: Dr Mike Dexter, Director, The Wellcome Trust, 183 Euston Rd, London NW1 2BE, email: m.dexter@wellcome.ac.uk. Sir George Radda, Chief Executive, Medical Research Council, 20 Park Crescent, London W1B 1AL; email: george.radda@headoffice.mrc.ac.uk. Write to your MP on www.faxyourmp.com asking what laws government plans to put in place that deal with these concerns. Please copy your letters to GeneWatch UK, The Mill House, Manchester Rd, Tideswell, Derbyshire, SK17 8NL; email: mail@gene-watch.org Get GeneWatch's information leaflet, make copies and distribute them in libraries, hospital and surgeries. For more information visit www.gene-watch.org

UK Stop Japan's return to full-blown whaling



Given that the International Whaling Commission (IWC) moratorium on all commercial whaling has been in force since 1986 and in 1994 all the waters around Antarctica were designated a whale sanctuary, it would be not be unreasonable to assume that the remnants of the great whale populations are protected. Unreasonable, no. Wrong, yes.

The Fisheries Agency of Japan (FAJ) has systematically gone about

pushing its pro-whaling agenda and seeking a way of overturning the moratorium, with Greenpeace estimating that the country has spent in excess of \$320 million in its efforts to secure a return to commercial whaling. Back in 1987, making use of a loophole in the whaling convention that allows countries to hunt whales for research purposes, Japan initiated its so-called 'scientific' whaling programme in the very waters of the Antarctic that are supposed to be protected. It has since expanded its Antarctic hunt; taking 440 minke whales every year and also conducting a second 'scientific' hunt in the North Pacific targeting sperm whales, Bryde's whales and minkes.

The FAJ has also been actively buying votes in the IWC – offering developing countries overseas development assistance (ODA) in exchange for pro-whaling votes. Just prior to the IWC meeting last year, Masayuki Komatsu, a senior

official of the FAJ, admitted that ODA was a 'major tool' in ensuring that key developing countries voted in favour of whaling. The FAJ therefore enjoys the support of 10 countries whose votes it has paid for – Antigua and Barbuda, Dominica, Guinea, Grenada, St Vincent and the Grenadines, St Lucia, St Kitts and Nevis, the Solomon Islands, Panama and Morocco. All of these countries except Morocco voted with Japan on every vote at last year's IWC.

Now, indications are that a number of other countries have been recruited by the FAJ and will join the IWC in time for its next meeting in Japan (20-24 May). There is a strong possibility that Japan will then command a straight majority in the Commission and therefore be in a position to pave the way for a resumption of full-blown commercial whaling.

make a
difference

Write to: Rt Hon Jack Straw, Secretary of State for Foreign and Commonwealth Affairs, Foreign and Commonwealth Office, King Charles Street, Whitehall, London SW1 2AH. Fax: +44 (0) 207 839 2417. Ask that he follows the New Zealand PM's example by publicly condemning Japan's vote buying in the IWC. Please copy your letters to: Richard Page, Greenpeace UK, Canonbury Villas, London N1 2PN or email richard.page@uk.greenpeace.org For more information visit www.greenpeace.org

6 key websites

1 www.brettonwoodsproject.org/update

Read about the World Bank new private sector development strategy, the IMF and the crisis in Argentina, IFI roles in Afghanistan's reconstruction and the 'New Deal' for development proposed by the UK Chancellor.

2 www.prospect.org/issue_pages/globalization/

Check out this special issue of the American Prospect on Globalisation & Poverty

3 www.rachel.org

Science and Precaution – the case for the precautionary principle

4 <http://slash.automedia.org>

News, reviews & analysis from a refreshingly different perspective

5 www.commondreams.org

Breaking News & Views for the Progressive Community – one of the very best

6 www.campaignstrategy.org

Empower yourself – great suggestions for anyone trying to save the world

Please send your campaigns to Stephanie Roth at the address at the front of the magazine.

Is Zero Waste a utopian

ANDREW AINSWORTH AND MARK STRUTT

Dear Mark

As you will appreciate, the management of waste is now widely considered to be the second most important environmental challenge facing the planet after climate change. It is an immense challenge: each year total waste production from all sectors of the economy exceeds 400 million tonnes in the UK alone, and growth in waste arisings continues to outstrip growth in the economy.

Much has been said in recent years about waste management policy, and recently the management of waste has found itself moving up the political agenda. The government is beginning to demonstrate some political leadership in its announcement of the Cabinet Office study into waste strategy. Furthermore, domestic and international legislative instruments, including various European Directives and the statutory Best Value targets, now facing every local authority in the UK, are driving waste management in a more sustainable direction, requiring greater quantities of waste to be recovered and recycled. The need for change is more pressing than ever, and we are now in a position where we have to ensure that words become deeds.

The private sector waste management industry will be instrumental in driving this change, and delivering the challenging targets of the Landfill Directive and the aspirations of the Government's own Waste Strategy 2000. The waste industry in the UK wants to move waste

'The management of waste is now widely considered to be the second most important environmental challenge facing the planet after climate change.'

and secondary resources management away from low cost waste disposal and more towards resource management actively contributing to the UK's resource efficiency and the broader aims of sustainable development. Our industry wants to build its future not on rising quantities of waste but on managing diminishing amounts of waste by recovering secondary materials and energy and returning these to the productive economy.

Blessed with a favourable geology, the UK has traditionally been reliant on landfill sites as a low-cost waste disposal option. However, for the sake of inter-generational equity, such end-of-pipe solutions to the UK's ever increasing volumes of waste are unsustainable in the long-term.

The challenge of moving towards a more resource

efficient society is multifaceted and must be tackled on several levels. It is essential that we reduce the amount of waste produced and its hazardousness. Therefore, as a first step waste production must be de-coupled from economic growth if we are to move towards a more sustainable society. However, even the best efforts of government and waste producers are unlikely ever to lead to a time we can claim to be producing Zero Waste.

Therefore, in order to manage waste which will continue to be produced more sustainably, our industry is increasingly investing in new state-of-the-art infrastructure designed to return more of the materials and energy contained in waste back into the productive economy.

However, sustainability is not the inherent property of any one particular waste or secondary resource management option. It is vital that the waste management industry is enabled to provide a spectrum of sustainable solutions within an integrated framework, based upon the waste hierarchy and Best Practicable Environmental Option (BPEO). However, strict adherence to the waste hierarchy is not necessarily BPEO in all circumstances as the external environmental impacts of options further up the hierarchy may be greater than those options less favoured by the structure of the hierarchy.

Despite exceeding its proportionate share of the total waste arisings in the UK, it is the visibility of municipal waste, which claims the limelight and the coveted place on the political hierarchy. However, the UK's historically poor performance in recovering value from the municipal waste stream ensures that it remains one of the major challenges of more sustainable waste management.

Ultimately, increasing recycling and composting of municipal waste will largely depend on the behaviour of consumers. Householders are key partners in the move towards more sustainable waste management: their participation in recycling schemes, inclination to purchase recycled products and willingness to pay higher costs. Changing the perceptions of householders will impact significantly on developing markets and increase certainty to invest in recycling facilities. Public commitment and support is critical in delivering the aspirations of the waste strategy and the various targets. However, such a step change in consumer behavior may take a generation or more to realize fully the recycling and composting potential of the municipal waste stream.

High levels of participation are vital in order to achieve substantial increases in recycling. However, even at high levels of participation a limit to the amount of material that can be recovered from the waste stream and returned to the productive economy is limited. Despite the best efforts of the industry, local authorities, community groups and the environmental lobby, there will be a not insignificant amount of residual waste, which will require management in the most sustainable manner available to society. In some cases BPEO will



Dr Andrew Ainsworth is the senior policy executive at the Environmental Services Association. He has also worked within academia and the private sector. The views expressed are his own.

target in Britain?

DEBATE A MESSY SUBJECT.



Mark Strutt is Toxics Campaign Team Leader at Greenpeace UK.

dictate that energy recovery is environmentally preferable. In some cases BPEO will be landfill. It is these decisions, albeit difficult and politically sensitive, which will have to be made in order to deliver more sustainable waste management in the future.

Andrew Ainsworth

Dear Andrew

I wholeheartedly agree with several of the points you make. Waste is one of our most important and urgent environmental challenges, end-of-pipe solutions are unsustainable and it is essential that we reduce the hazardousness and quantity of waste we produce. However you don't propose solutions to these problems. You seem resigned to them. I will propose a solution.

First lets look at what we agree on. End-of-pipe technologies are unsustainable. Both our current methods of dealing with municipal waste, landfill and incineration, are end of pipe technologies. They are also 'out of sight, out of mind technologies'. Landfill attempts to reduce the harmful impact of waste by containing it, incineration by dispersing it (in ashes and stack gases). Both succeed in making the problem less visible, but fail in making it safe. Leachates and methane gas seep from landfill sites, and a whole range of pollutants are spread far and wide in incinerator ashes and stack gases.

I think you would agree that neither of these options is desirable and that the more we can compost and recycle the better. The real debate is about another issue; what to do with what is left after we have maximised recycling and composting. You argue that, sometimes at least, it is better to burn residual waste and recover what energy we can from that process. I say that is never the best option. It is never even the best practical option.

The waste debate is currently polarising into two approaches. One clings desperately to the old way of doing things, the other embraces the new and drives further change.

The old way, to disguise its obsolescence, has a new name. It is called 'integrated waste management'. It is based on a low road increase in recycling, an increase in incineration capacity and continued landfill (of toxic ashes and materials incinerators can't handle). It actually solves none of the problems we have agreed need addressing.

The new way is Zero Waste. Zero Waste is not only a target, but a policy framework that addresses the whole lifecycle of products (not just the end-of-pipe, disposal phase). It encompasses producer responsibility, eco-design, waste reduction, re-use and recycling within a single framework.

The 'integrated' option means that for 25 to 30 years (the capital pay-back time of an incinerator), we must not only tolerate pollution from incinerators, but also

continue to supply them with domestic waste to burn. This option may be integrated, but it is entirely inflexible. Once built an incinerator allows little space for alternatives to develop, it stifles innovation and kills any possibility of getting anywhere near Zero Waste.

My second fundamental problem with so called 'integrated waste management' is that incineration is never the best practical environmental option. We will have residual waste for a while yet, but there is a better way of dealing with it. Mechanical Biological Treatment (MBT) provides a treatment option that is integrated, but flexible.

There is now little argument that householder separation of rubbish into recyclable and residual streams, and kerbside collection of the resulting clean materials is necessary, desirable and inevitable. (The Governments Best Value Performance Indicators now use this as a measure of local authority performance). Kerbside collection of multiple materials needs to be comprehensive and compulsory. The environmental and human health problems of waste start when it is mixed together in our dustbins and this should not be an option. But some material will escape this process – because it is not currently recyclable, by mistake, or because of (temporarily) insurmountable difficulties in collecting it (the costs involved in collection from some areas or some types of housing might be an example). This is where MBT provides the alternative to incineration.

'Both our current methods of dealing with municipal waste, landfill and incineration, are end-of-pipe technologies. They are also "out of sight out of mind technologies".'

MBT takes residual waste and mechanically divides it into a dry fraction and an organic fraction. This results in more recyclables (albeit of lower quality – glass is not colour separated for instance) and the mass of the residual is diminished. The organic fraction is then composted or anaerobically digested and the mass is reduced again. But something else happens during the biological stage. The organic waste is stabilised and it will no longer produce methane or leachate. Although it will not be suitable for use as a compost (mixing the waste will have resulted in contamination), stabilised waste is safe to landfill – at least until we get to Zero Waste.

And here lies the beauty of MBT. The biological part

of the process can be converted from dirty to clean composting as source separation improves. The cleaner the feedstock the more options there are for the product. With good quality source-separated material we reach the stage where organic waste has been transformed from a problem to a valuable resource that can return much needed nutrients and organic matter to the Earth.

MBT therefore provides the short term 'achievable' solution to our present waste crisis, and the bridge that puts us on the path to Zero Waste. Incinerators on the other hand stand like mammoths, barring the way forward. They lock us into an eternal present of polluting, linear, waste disposal.

Mark Strutt

Dear Mark

I'm glad we agree on so many points, specifically that as a global environmental challenge, waste is one that we must address. However, I cannot accept your proposed solution of Zero Waste, from both a purely semantic point of view, and from a practical one.

Zero Waste, far from being a policy framework, is impossible to achieve in the way you have described it. Zero Waste in its truest sense implies that as a society we can eliminate waste entirely and return all the materials we consume as part of our everyday lives back into the productive economy. In a Utopian society, maybe we could. But we live in the real world, one driven by consumer demand. Therefore, we must deliver the solutions that are best suited to the challenges with which we are presented. What you have described is not Zero Waste, it is an increase in recycling and slightly less waste being disposed of in landfill sites (both of which, you will be pleased to know, I support).

I agree that we need to look at new ways of addressing resource efficiency, taking account of the way in which consumer products are designed and their environmental impact during their useful lives. Producer responsibility, in the shape of the Packaging Directive has been a strong driver for change in dealing with commercial waste in the UK. It has increased recycling and energy recovery, as well as addressing the hazardousness of waste. Future legislative initiatives, on other priority waste streams, and Integrated Product Policy emanating from Europe will further drive this change, and provide other opportunities to increase the amount of waste we return back into the productive economy.

As you can see, far from clinging desperately onto the 'old way of doing things', I positively embrace the move towards higher added value resource recovery for all waste streams, not just the municipal waste stream. Be aware, Mark, that your 'solution' relates solely to the municipal waste stream, and that there are several hundred million tonnes of other materials which must also be managed in an environmentally responsible manner. However, as I acknowledged in my first letter, it is the municipal waste which courts political capital, and seduces the politicians.

The integrated approach I have described previously is to maximise recycling and composting, and to reach a level where optimum amounts of materials are extracted cost-effectively from the waste stream. In this way alternative waste management methods can be sized appropriately to ensure that recycling and composting are not unduly stifled.

I agree that source separation by householders is necessary to ensure a high quality recycle, and that high

levels of citizen participation are vital to achieving significant increases in recycling. However, if 80 per cent of rubbish thrown out by the average household is recyclable, and 80 per cent of the population participates 80 per cent of the time in a system that is 80 per cent efficient, it is very hard legitimately to deliver more than 40 per cent of the original material targeted to a reprocessor (where there are further losses ranging from 3-20 per cent depending on the material being reprocessed). MBT will result in similar losses, and this residual waste will require final management, either in landfill (as you have acknowledged in your letter), or as a source of electricity.

Far from being a solution, Zero Waste is aspirational, and no more. It is quite simply unachievable. However, please don't get me wrong. I am as passionate about achieving more sustainable solutions to the waste challenge as you are. I just have a more realistic outlook.

Andrew Ainsworth

Dear Andrew

We are getting to the nitty gritty of this issue! Your 'realistic outlook' leads you to the conclusion that no more than 40 per cent of household rubbish can be captured for recycling and because of that, Zero Waste is no more than an unachievable aspiration.

First I want to say that aspirations are important. If we want to solve the waste crisis (and I do not use that term lightly) high aspirations and the political will to ensure those aspirations are met are necessary. Your pessimistic 40 per cent maximum recycling figure is based on a theoretical 80x80x80x80 scenario. But look at the best case examples around the world and those limits do not hold. Several communities in Britain, struggling against the tide and with very few resources, have achieved diversion rates way in excess of this – Wye (Kent) 75 per cent, Mersea Island (Essex) 57 per cent, Wealdon (E Sussex) 53 per cent. Abroad, Edmonton (Canada) has achieved 70 per cent, Halifax (Canada) 65 per cent, and Canberra (Australia) 66 per cent. Notice here I'm talking about diversion rates – not recycling. Recycling is not an end in itself, though proponents of the integrated option talk as though it is, because they only look at the end of the disposal pipe. This is the value of Zero Waste as a policy. It forces us to look at, and address, the production of waste.

Of course Zero Waste cannot be achieved overnight. It is a long term objective, but one that waste policy in the UK desperately needs. For much too long we have been stuck with a system geared not towards the environmental, social and long term economic value of converting discarded waste into useful raw materials, but to the cheapest possible disposal option. The 'integrated' option you propose does nothing at all to change this, because in practice it means recycling what is currently economically viable and burning the rest. It will never address the more difficult waste streams, the current market distortions (for example the hidden subsidies incinerators enjoy) and it contains no mechanisms for reducing the generation of waste. It is a formula for 'business as usual', which of course suits those who profit from waste disposal very well indeed.

Zero Waste offers a way out of this cul-de-sac. It is based on the conviction that waste is not a given, not inevitable and not an accident. Instead waste is seen as the result of a series of decisions – what products are made from, how they are made, how they are designed, transported, packaged etc.

'I cannot accept your proposed solution of Zero Waste, from both a purely semantic point of view, and from a practical one.'

Andrew Ainsworth

'Waste is not inevitable but can be designed away. Legal instruments are required, particularly producer responsibility and the UK Government and the waste industry must support this process.'

Mark Strutt

As such, waste can be designed away, if the incentive is there to do that. That demands a political aspiration to bring in the economic and legislative changes necessary a) to get us into the 70 per cent plus diversion rates and b) deal with the residuals.

The first of these is dealt with by the intensive recycling/composting and MBT system described briefly in my first letter. The second is part of a Zero Waste policy.

Absolutely key to Zero Waste is producer responsibility. Quite simply all materials that are not re-usable or recyclable become the responsibility of the producer. This is the means by which the connection between economic growth and waste generation can be broken. Producers of goods must be responsible for their end-of-life impacts and properly constructed producer responsibility legislation should use the market to ensure that waste is designed away. Goods that create waste simply become more expensive than those that do not, because the environmental impact of their disposal is embodied in their cost.

Clearly this must be Europe-wide legislation to help keep the playing field level for producers – and this type of legislation is currently coming out of Europe. But in the UK the waste industry (and packaging producers), have been undermining this legislation. Heavy lobbying has succeeded in corrupting the regulations designed to achieve high levels of packaging recycling, into regulations that encourage incineration of packaging under the spurious banner of 'energy recovery'.

This is why the 'can't do it' attitude that you display in your letter, the 'business as usual' approach of so-called 'integrated waste management' is so regressive. Every step of the way it prevents and obstructs progress towards the real changes in the way we generate and deal with waste, that are necessary to solve the problem.

Before we can answer the question 'is Zero Waste achievable?' we need to ask the question 'how much do we want to achieve it?' The answer I am hearing from you is 'not very much'.

Mark Strutt

Dear Mark

Aspirations are important. And, I can agree that to aspire to achieve Zero Waste is both necessary and admirable. However, your argument has failed to convince me that Zero Waste exists. The concept remains vague, with no concrete method of delivery, and with the main focus on the municipal waste stream. You consistently fail to address the vast majority of waste produced annually in the UK, much of which cannot be subjected to producer responsibility and which must be managed in a responsible manner.

With regard to the municipal waste stream, I agree that on a small scale high levels of diversion of municipal waste are achievable, and that resources should be targeted at those areas. These tend to be affluent areas, where people are more aware of issues such as waste management. Unfortunately, not everyone thinks this way, and like it or not, there are areas of the country where people are concerned with aspects of society that have a more profound impact on their lives than what is in their dustbin. For the municipal waste stream 40 per cent overall recycling through separate collection probably is realistic. I didn't want to get into a battle over statistics (lies, damned lies etc), but if the definition of MSW in Canberra was the same as that applied in the UK, the recycling rate would fall to less than 30 per

cent. Furthermore, there are any number of European countries, which I could use as examples, to demonstrate high levels of diversion of waste from landfill by employing a mix of waste management practices, including materials recycling, biological treatment and energy recovery.

Producer responsibility, as I established in my first letter, is certainly one of the mechanisms by which waste can be reduced and recovered. Despite your claim that my attitude is 'business as usual', and that through some conspiracy that the regulations have been 'corrupted', work on those waste streams covered by producer responsibility has yielded significant progress in improving their management. Much more of a 'can do, are doing' attitude don't you think? Integrated Product Policy (IPP) is the next logical step in this direction, whereby the environmental impact of products throughout their entire life cycle is reduced. Producer responsibility addresses a proportion of the material flows which will eventually require management in a sustainable manner. What it does not consider are those wastes which will not be covered by any sort of producer responsibility; wastes which must be managed in an environmentally responsible manner, by operators working within real physical constraints.

There is much we agree on, including the fact that there is much work to be done. But let us not invite failure by pursuing unrealistic goals.

Andrew Ainsworth

Dear Andrew

You are right, I have concentrated on municipal waste – it is, after all, scores of new municipal waste incinerators that are currently being proposed as the solution to the waste crisis. But the concept is equally applicable to commercial and industrial waste. In fact Zero Waste has its origins in the highly successful Japanese industrial concept of Total Quality Management (TQM).

Zero Waste follows from earlier TQM concepts like 'zero defects'. The approach is incremental, with intermediate 'stretch' targets designed to achieve optima, rather than restricting progress to choices between alternative known solutions. It has been extraordinarily successful, with some producers achieving results as low as one defect in a million.

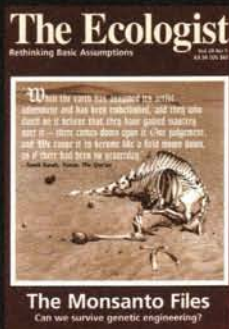
As with municipal waste, a Zero Industrial Waste policy would focus attention on elimination through design rather than simply reduction via end-of-pipe technologies. It would stipulate that use of raw materials, design of manufacturing processes and ultimately products themselves, are examined and redesigned to eliminate waste. In fact this process is increasingly being adopted in the commercial sector.

Municipal waste is in some ways more difficult to deal with. But it is where we should start and my contention is that Zero Waste is both achievable and a necessary policy instrument. Waste is not inevitable but can be designed away. Legal instruments are required, particularly for producer responsibility and the UK government and the waste industry must support this process (the latter should transform itself into a high added value re-use and recycling industry). Three-stream separation of waste by all households should not be an option but a duty, enforced with incentives and sanctions. Intensive recycling, composting and mandatory kerbside collection followed by MBT is a practical way to deal with (temporary) residuals. Such a system could put us on the road to zero (or damn close!).

Mark Strutt

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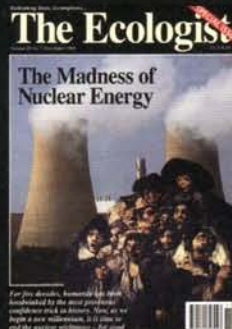
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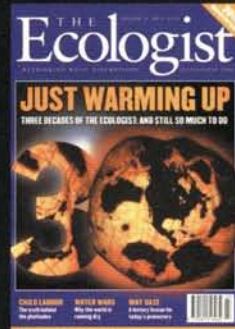
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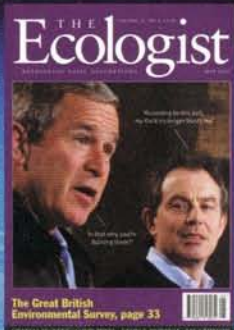
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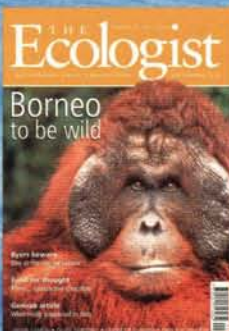
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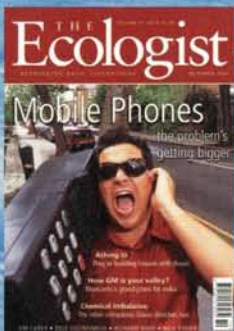
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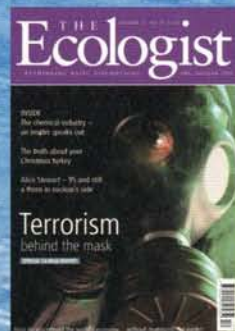
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MINDLESS MMR

DR PETER MANSFIELD EXPLAINS WHY SINGLE VACCINES REALLY FELL OUT OF FAVOUR.

Throughout the rather hectic summer of 2001, during which I was at the eye of the MMR hurricane, one question puzzled me above all. What drove the Vaccines Group of the Department of Health, not just to supersede two vaccines after 20 years of excellent experience, but actually to withdraw them?

Two weeks ago I think I discovered the bottom line. But let's start at the beginning.

In the 1988 edition of its handbook *Immunisation Against Infectious Disease* the Department acknowledged the success of rubella and measles vaccines, introduced around 1970 and capable of giving 15 years or more of protection from a single dose. But it also announced the introduction of MMR. Why?

Almost certainly the manufacturers had become nervous about price. (Vaccines are not inherently expensive in a mass market, but patent protection and industrial secrecy keep the price up for the first 10 or 15 years.) The drive to go one better was to win patent protection for a further decade or two. What better than to combine two winners in one product? And then add mumps for good measure, which had not really caught on as a single product.

The market potential of any vaccine is vast, particularly when given to every child. The best sales teams in the world will have brought their skills to bear on Health Department buyers, probably luring them with the prospect of halving the time required for vaccination clinics. Whatever the reasons, they bought.

For a while then, the situation was this. If you went to a vaccination clinic supplied by your local public health department, you got MMR without the option. Dissidents could, however, consult their doctor and request separate prescriptions for rubella, measles and mumps vaccines or any combination they preferred. These could be dispensed at the local chemist for the doctor then to administer free of charge, funded by normal NHS channels. It respected the parents' right to choose and the doctor's freedom to practise on their behalf.

This arrangement persisted until the mid-nineties. I retired from the NHS in 1996, just when the national computer was being prepared to go on line. In the same year the current edition of *Immunisation Against Infectious Disease* was published, full of MMR, but noting that separate vaccines were still available.

However, within a year or so the Department suddenly withdrew the medical licences of the single measles and mumps vaccines, presumably to enforce the 'choice' of MMR. This was sufficiently unexpected that they left in the Medicines Act regulations a provision to cater for children caught half way through a course of the single vaccines. Their doctors were permitted to import doses under the 'named patient' procedure so that courses could be completed. This was clearly intended only as a temporary transitional measure.

Not only did the Department force the choice, it also began demonising single vaccines as less safe and effective, when all the evidence was by then the other way. It had been forced to introduce a second dose of MMR at school entry to make up for its lesser effectiveness, but its carefully worded PR 'hymn-

sheet' studiously avoided admitting that.

Meanwhile, there were thousands of cases alleging damage from MMR after a decade (there were only 50 against single measles in 30 years). But it was the work of Drs Andrew Wakefield, Paul Shattock and others on a possible link with autism and bowel disease that created the public backlash against MMR and caused me to get personally involved again.

It was a clinic in Worcester that provoked the complaint to the GMC. It alleged, on no basis whatever, all the presumed misdemeanours a vaccinator can possibly display – too many needles, over-long intervals, dubious vaccines, defaulting parents. Uncritical adoption by the GMC made me go public, which quickly exposed the falsity of this. But in exonerating me last November the GMC suggested I mend fences with my accuser, so I called on him early in January.

The meeting was not friendly. He wanted to know how I proposed to notify him of vaccines given to residents of his territory. We had already notified every one, I told him, but most of the forms had been returned to us without explanation – by one of his functionaries apparently and without his knowledge.

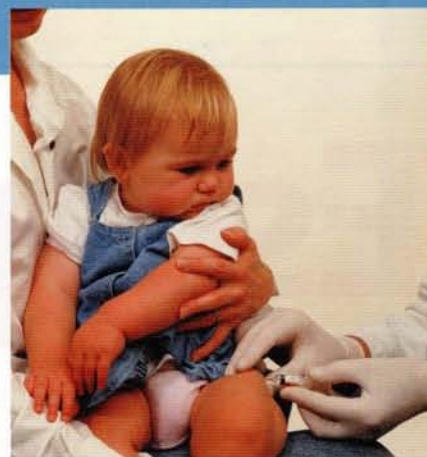
His next admission made my jaw drop. His people were not using our information *because they could not*. The NHS computer could only record MMR: it could not cope with separate entries for rubella, measles and mumps given on different dates. To make matters worse, as most parents were sensibly postponing mumps vaccination for a few years to ensure coverage throughout their children's teens, almost nobody we have vaccinated singly could be credited with anything nationally!

The penny dropped later that evening. If the IT firm, contracted back in 1995 to install the NHS computer system, had not been briefed originally to allow for single vaccines, it could name its price when asked later to correct the oversight. That may have prompted a civil servant to call its bluff and try instead to outlaw the vaccines. A little money saved, but at the expense both of patient choice and doctors' independence.

Most GPs probably still have private software packages enabling them to record single vaccines, but they are also deterred by the way they are paid, and cannot in any case pass on the glad tidings to the national system. Consequently the national statistics do not include children vaccinated singly. We may already have achieved the holy grail of herd immunity, but have no means of knowing.

Public Health officials both could and should now admit the error, whatever it was, amend their computer system and re-license single vaccines. We have the perfect opportunity. The next quest for extended patent protection is due, adding chickenpox vaccine to MMR and calling it MMRV. The system will need amending and, for a modest additional fee, could cope with the single options too.

Dr Peter Mansfield was threatened with losing his medical licence in 2001 because he continued to allow patients to choose three separate injections rather than the controversial MMR vaccine.



Escaping from reality

With 2002 being designated the International Year of Ecotourism (IYE), we expose the real agenda behind all the high-minded claims and glossy pictures.

BY LUIS VIVANCO

In the age of uncertainty unfolding since the events of 11 September 2001, concerns and debates over ecotourism have gained new urgency – as the number of bookings to destinations has dropped, the ecotourism industry's staunchest promoters have declared that rural communities and the conservation of nature in the South are at risk and that, according to the International Ecotourism Society (one of the IYE's planners): 'Who really gets hurt are those who provide the services – the lodging operator, the growers of food, the people who provide the transportation.'¹ In light of such arguments and events, the IYE's rhetoric of ecotourism's importance for global economic and environmental security is increasingly being called into question.

The IYE is certainly a key milestone in ecotourism's adolescence, and at stake in it and the processes around it is the widespread legitimacy of ecotourism for those who are targeted for its development. Ever since it was conceived, the IYE has been aggressively marketed as a celebration of ecotourism's role in facilitating sustainable development. However, many critics have responded that a celebratory tone is inappropriate, given the growing evidence of failed projects,

disrupted communities and ecosystems, and greenwashing under the guise of ecotourism, not to mention the processes by which the IYE itself has been organised. Even ecotourism's supporters admit that greenwashing and 'ecotourism lite', or superficial attempts to integrate nature or conservationist principles like reusing hotel towels into tourism, have become a red herring for tourism's poor environmental record.² Nonetheless, these promoters still feel able to argue that this in itself justifies the IYE, in order to establish and reinforce high standards and expose those doing the greenwashing.

Despite the confidence expressed by its advocates, critics remain concerned that the IYE does not in fact confront the structural inequalities that characterise ecotourism's origins and practice. As expressed in a letter from the Third World Network to Kofi Annan, Secretary General of the UN: 'There are concerns that the event will result in misconceived and inflationary ecotourism – or more correctly "mass nature tourism" – policies and programmes that inevitably exacerbate problems, such as the degradation of ecosystems, loss of biological and cultural diversity, disruption of local economies, displacement and dispossession, and resistance from community and indigenous peoples and groups.'³

Whose interests does it serve?

One of the major concerns of critics is that the IYE's partiality toward product development, the review of good practices, and discussions of ecotourism's potential gives the impression that it is already functioning well. This itself is a premature assessment, when even the World Bank, which has been promoting ecotourism development for at least a decade, has

published studies that suggest few ecotourism projects have actually generated substantial income for the parks they are intended to protect, much less the local people living near them.⁴

Furthermore, as Anita Pleumarom of the Bangkok-based Tourism Investigation and Monitoring Team points out, there is a widespread perception among grassroots groups that the large nature conservation and ecotourism organisations have colluded to lobby for the UN endorsement of ecotourism and now want to exploit it for self-serving purposes, such as getting free promotion for their products and technical consulting services, or getting funding for their own projects.⁵ For many grassroots groups concerned with challenging not only globalisation, but also the central position of international environmental organisations in its political and cultural order, it is deeply troubling that organisations such as TIES, CI, and ETE (see box on page 29), which are based in the North, are mandated to represent the concerns of the NGOs and communities in the South that have been aggressively targeted for ecotourism development.⁶

Indeed, at the May 2000 meeting of the Convention of Biological Diversity in Nairobi, Kenya, a statement presented by a spectrum of Indigenous Peoples' representatives and NGOs named TIES as one of the large nature conservation and development organisations that has consistently ignored local peoples' concerns in its drive to promote ecotourism.

There are other questions here regarding the ability of targeted peoples to just say no to ecotourism development. The language of the IYE emphasises the inevitability and universality of ecotourism, but critics



Roaming holiday: The emotive image of the ecotourist as saviour of endangered species, such as elephants, may mask a deeper contradiction.



ENVIRONMENTAL IMAGES: PANOS

consistently raise the question: are debt-ridden Southern governments willing and able to say no to ecotourism development? The pressures to generate foreign exchange for debt-repayment purposes, as well as the fact that national elites often benefit economically from tourism development, suggest that governments may not be in a strong position to reject ecotourism as a development tool. This is further compounded by the enthusiastic endorsement and promotion of ecotourism by international lending and bilateral development agencies, like the World Bank, USAID, and so on.⁷ And this leads to a further question, which is that if governments aggressively promote ecotourism, can they also be the right people to monitor the impacts?

Ecotourism's perceived lack of widespread benefits for local peoples is substantiated in a recent UNCTAD study, which shows that, despite the efforts of governments to develop suitable policies dealing with tourism, their efforts are often undermined by external forces beyond their control. For example, the outflow of foreign exchange generated by tourism can

reach levels as high as 75 per cent.⁸ Of further concern is that one of IYE's organisers, the World Tourism Organisation, is the world's major proponent of the liberalisation of tourism services, a position that favours multinational tourism corporations (airlines, hotel companies, travel agencies, and so on) with a financial stake in the reduction or elimination of trade barriers and regulations.⁹ As these corporations have begun to market ecotourism options, there is concern, especially among small-scale ecotourism operators, that the WTO/OMT's free trade stance undermines not only governments but also small operators who cannot compete with multinational corporations.

One of the grander claims often made for ecotourism is that it will lead to a greater distribution of wealth and an increase in standards of living when there is local community involvement. But as Mexican economist David Barkin has argued, even when ecotourism is not run by outsiders, economic benefits for communities can be limited, simply

because local elites are often the ones in the best economic and political position to benefit by tourism development.¹⁰ Furthermore, when viewed as a single-factor economic solution, ecotourism projects do not support the broader regeneration of community-based economies and self-sufficiency, which are crucial factors for local sustainability. In fact, Barkin argues, if local needs for income and employment are not met, or continue to be defined elsewhere, ecotourism projects can actually further undermine local economic security, social relations, and ecosystems. This is being borne out across the world in the post-11 September drop in tourism bookings, as destination communities experience the bust-side of the tourism boom-bust equation. But it is also the product of the fact that that tourism relies on low-paying and seasonal labour conditions. ❖

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Paradise lost – a Thai case study

Ecotourism development itself has been directly implicated in ecological degradation, often because the drive for profit exceeds the concern for ecosystems.

An ongoing controversy in Thailand illustrates how the pressures to develop ecotourism infrastructure can contribute to landscape modification and even the violation of national laws intended to protect ecosystems.

As reported in the *Bangkok Post* and Bangkok's *The Nation*, in 1998 the Tourism Authority of Thailand was set to coordinate the implementation of tourism projects worth \$75 million, initiated and funded by the World Bank's Social Investment Project and the Japanese Overseas Economic Cooperation Fund*.

The result, according to *The Nation*, is that 'major construction projects – some involving logging operations – are being undertaken at full steam in national parks countrywide under the pretence of ecotourism'.

Further, the Tourism Authority of Thailand, along with the Royal Forestry Department, has been using 600 million Baht in loans from the Bank's Social Investment Project to build tourist facilities in 19 protected areas. Bank officials have denied their role in overseeing the projects, and contended that the logging is small scale and only to make room for tourist amenities.

But as critics have been quick to point out, Thailand's environmental legislation prohibits the felling of trees or landscape alteration in national parks, and the World Bank's timeline for the use of funds (two years) forces development that is too rapid.

As a result of this situation, environmental groups and tourism monitoring groups in Thailand are especially worried about another \$150 million programme recently launched in Thailand by the World Bank, the Global Environmental Facility, and Conservation International, that is also expected to promote ecotourism development.

* *Third World Network* (2001). 'Thailand's Case'. Website accessed on 9/21/01 at: <http://www.twinside.org.sg/title/tye7.htm>.

Local people tend to enter the tourism economy at its lowest level, and soon find out that they cannot live in tourist areas on the minimal wages they are paid.

Furthermore, uneven ecotourism development is reflected directly in ecological degradation. This is the case of the Monarch Butterfly Reserve in Michoacán, Mexico, where, in spite of the presence of a self-declared ecotourism industry and hundreds of thousands of people who come to see the spectacle of butterflies every year, impoverished peasants continue to violate the reserve's ban on logging. This is happening even though peasants are aware of the importance of forest conservation, and precisely because ecotourism development there has not offered any meaningful economic opportunities or self-sufficiency for the majority of people.¹¹

What are its real objectives?

The IYE's claims to ecotourism's universal role in sustainable development leave some critics wondering what the true intentions of the IYE really are. Is it to promote ecotourism projects all over the world? If so, what are the long-term implications of bringing rural communities to compete with each other in international tourism markets, and who takes responsibility for the social, economic, and environmental consequences? Given that ecotourism is ill-defined, whose definition will count? Is the IYE's main objective to encourage all holiday-makers to become ecotourists?

According to the World Tourism Organisation, preliminary data for 1999 shows that the total number of international tourists reached 664 million, an increase of 4.5 per cent over



THIS SPREAD: ENVIRONMENTAL IMAGES

The International Year of Ecotourism – ‘the official line’

In November 1998, the UN General Assembly voted to designate 2002 as the International Year of Ecotourism. The UN Commission on Sustainable Development mandated the UN Environmental Program (UNEP) and the World Tourism Organisation (WTO/OMT) to prepare and coordinate activities for the year. The designation of the year is intended to encourage intensified cooperative efforts by governments and nongovernmental organisations to achieve Agenda 21's aims of promoting economic growth and the protection of the environment: 'The UN declaration is a testimony of the growing importance of ecotourism, not only as a sector with a great potential for economic development – especially in remote areas where few other possibilities exist – but also as a powerful tool for conservation of the natural environment if it is properly planned, developed and managed.'*

In partnership with three Northern NGOs, The International Ecotourism Society (TIES), Conservation International (CI), and Ecological Tourism Europe (ETE), the UNEP and WTO/OMT have begun to publicise the objectives and themes of the IYE, working towards a World Ecotourism Summit during May 2002 in Quebec City.

*UNEP (2001) UNEP Manual for the International Year of Ecotourism. August 29, 2001, p1 Geneva: United Nations Environmental Programme.

the previous year.¹² That hundreds of millions of tourists would seek the westernised version of nature promoted in ecotourism – unpeopled wilderness – could be good business for some. But not only is that ideal an absurd and arrogant reduction of what motivates people to travel; it also represents an ecological and social disaster of tremendous consequences for those rural communities and landscapes targeted by well-meaning but ultimately self-interested ecotourists.¹³

Ecotourism as development

Reflecting the development establishment that has adopted and helped shape it, ecotourism discourse emphasises the eradication of poverty in the global South. At the same time, however, it also provides an experimental laboratory and self-serving target of investment for the development, NGO, and corporate interests driving the aid agenda. This is a familiar scheme, as Pleumarom points out: ecotourism 'is increasingly introduced in Third World countries in form of a development package, involving capital, expertise, technology and management systems, and is, thus, becoming something like a new Green Revolution.'¹⁴

Like other development packages, ecotourism carries with it experts, technical knowledge systems, and cookbook approaches. This is evident in the promise by organisers that during the IYE they will be distributing 'ecotourism information kits' to communities and businesses interested in developing ecotourism. If communities need anything relating to ecotourism, it is certainly more information so they can make informed decisions and commitments. But

according to Deborah McLaren, who directs the Rethinking Tourism Project, such kits often promote a reductionistic approach that affirms the universal and technical, not socially-specific, nature of ecotourism development. They also promote the homogenisation of tourism experiences, as opposed to encouraging communities to engage actively with tourists on their own terms and in ways that bring both tourists and locals to new understandings of human-nature interactions, cultural differences, and so on.¹⁵

The discourse of ecotourism promises the greater productivity of nature without its overexploitation. But just as the Green Revolution initially led to high yields, and soon gave way in many places to darker stories of soil degradation, loss of indigenous plant species and knowledge, and dependence on monocrops, so the picture of ecotourism's environmental record is revealing a darker side. Part of this picture is ecotourism's intensive exploitation of petroleum-based energy and its use of often limited local resources. Ecotourism rarely, if ever, calls into question the consumption-oriented lifestyles that motivate ecotourists to travel in the first place. Dubbed 'ego-tourism' by Ian Munt, ecotourism is as much about confirming one's class identity, educational sophistication, disposable income, and cultural capital as it is about visiting nature in far away places.¹⁶ This goes hand-in-hand with the common assumption that people from Northern (industrial) tourist-generating societies are free with the inherent right to travel wherever they choose.¹⁷ Ecotourists, no different from other tourists, consume non-renewable resources to arrive at their destinations; perhaps even more since the areas they



Flash, bang, wallop – what a picture!

Left: Diver and three bleached colonies of pocillopora, or cauliflower coral, in the Pacific Ocean;

Below, below left: Tourists chasing the game in Nairobi, and snapping elephant seals in Antarctica;

Top: A local cow dines on tourist litter in the Everest region of Nepal;

Above: Whale watching off the coast of New England.

target are often the most remote and pristine. Yet the link between jetting half way around the world, the contribution of jet travel to greenhouse gas concentrations, and the ecotourist experience are rarely made.¹⁸

Once at their pristine destinations, ecotourists often barely understand the ecological consequences of their visits. While they may be told to step carefully lest they contribute to soil erosion, ecotourists rarely acknowledge how the meals they eat, the toilets they flush, the water they drink, and so on, are all part of broader regional economic and ecological systems they are helping to reconfigure with their very activities.¹⁹ As the International Forum on Indigenous Tourism argues: 'It is brash to assert that more middle class consumerism will solve the problems of the world. Ecotourists may believe that they "take only pictures and leave only footprints", but they also leave copious trash and sanitation problems while

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✦ using precious local resources. If these consumers notice the degradation they provoke they assume it is the result of local ignorance, and not their own practices, complicity, or numbers.²⁰

The effects on indigenous peoples

For many indigenous communities, ecotourism has been presented as a method of development that helps preserve both landscapes and traditional ways of life, and many communities have expressed interest in and a commitment to developing ecotourism. When these lands are targeted by tourism, however, conditions can quickly undermine indigenous peoples' land claims and control over what and who goes in and comes out of these landscapes. As a Maasai ecotourism critic observes: 'The designation of ecotourism sites tends to disentitle the poor by depriving them of their traditional use of land and natural resources.'²¹

It is true that, in some cases, indigenous communities have found that ecotourism projects can bring much needed money.²² But for others, ecotourism projects have backfired, causing divisions or not generating the income they expected. Or they have realised that like other forms of tourism, ecotourism relies on simplistic stereotypes in which ethnic groups

International Forum on Indigenous Tourism, Oaxaca Mexico, 18-20 March, 2002

International ecotourism initiatives tend to focus simply on product development or good and bad practices, while avoiding deeper discussions of the cultural and structural conditions under which ecotourism operates. The International Forum on Indigenous Tourism, however, is meant as an opportunity to evaluate indigenous experiences with ecotourism outside the self-promotional venue of the IYE. It will bring together tourism case studies and develop guidelines and models for indigenous peoples, academics, NGOs, governments and private industry. The case studies will focus on the Americas and building the Mexico Indigenous Peoples' tourism network.

For more information contact the Rethinking Tourism Project.

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phone: 651-644-9984; or fax: 651-644-2720.

provide an 'exotic' backdrop to natural scenery and wildlife.²³ In still other cases, ecotourism directly contradicts the fundamental values of the group. Roy Taylor of the North American Indigenous Peoples Biodiversity Project points out that 'the way that conservation is practised in the West is viewed as conservation-for-development and that is not necessarily consistent with our traditional view of guardianship and protection. We wouldn't even use the word conservation'.

Likewise, ecotourism brings new pressures to convert nature into exploitable resources, through the conversion of sacred sites into tourist attractions or resources for bioprospecting. In the Loita Hills of Kenya, local Maasai have been pressured to convert the Naimina-Enkiyo forest into an ecotourism attraction. Having experienced the devastating effects of tourism at nearby Masai Mara National Park, they are determined to preserve this sacred forest of high biodiversity that for generations has been kept as a place of worship.²⁴

And where overt pressure to develop doesn't work, there have been instances of subterfuge. Posing as, say, ecotourists interested in traditional knowledge of plants for medicinal purposes, commercially motivated bioprospectors have sought to sidestep local regulations and laws. Without adequate legal protections on intellectual property, indigenous groups are rightfully reluctant to share traditional cultural knowledge.

That is why the IYE's language of stakeholder inclusion and cooperation tends to be unrealistic and simplistic, because it ignores or downplays the fundamentally divergent values and interests between promoters and targets of ecotourism.

Ecotourism in an age of uncertainty

After the events of 11 September, the globalisers' delusions of an inevitable



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and universal Western modernity are under threat of collapse. With the drop in international tourism that has resulted from these events, ecotourism's promoters have, as expected, urgently reiterated their mission to bring development to those real and imagined hotbeds of potential anti-Western sentiment, cynically repeating concerns that it is the poor who are truly suffering the drop in tourism. What is worse, they will argue, is that nature's survival is at stake since without ecotourism's revenues people in the South apparently have no alternative to destroying it. We can surely expect that the IYE will now, more than ever, use its global pulpit to argue for ecotourism's central role if not inevitability in combating poverty and nature's demise, and its positive role in creating world peace and understanding.

However, to do so would miss the true lessons of the globalist era.

The attempt to force people everywhere into the same cultural, economic, and political mould (which itself harbours deep contradictions) is bound to generate insecurity, resentment, conflict, and even ecological degradation. The task is how to forge conviviality and coexistence among peoples with profoundly divergent histories, beliefs, and values. This will be achieved by acknowledging at the outset the strength in pluralism and self-determination, not by rejecting tourism and tourists, but by rejecting the monistic logic and political-economic structures underlying ecotourism's developmentalist fantasies and tragedies. In so doing, it may be possible to strengthen an alternative vision of public engagement, nature conservation, and tourism beyond the IYE's universalistic and self-serving vision.

References on page 66.

LUIS VIVANCO is assistant professor of anthropology and director of the Latin American Studies Programme at the University of Vermont. He is a member of the Advisory Council for the Rethinking Tourism Project.



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Breeding the **SUPERBUG**



BY PETER BUNYARD

As a result of over-use, misuse, and abuse, antibiotics, once hailed as the saviour of mankind, are an increasing threat as bacteria grow ever stronger.

'Worldwide, hundreds of thousands [of people] die each year because of bacterial infections that can no longer be controlled.'

As soon as the twin towers collapsed we knew thousands would be dead, killed in an instant as a torrent of debris from more than a hundred storeys crashed in on them. But that destruction, out of the clear blue sky, has left a double legacy; first because it shows that a handful of extremists can achieve mayhem without laying their hands on sophisticated delivery systems; and second, because it raises the spectre that had bioterrorism also been involved the death could have been much higher.

The terrorist acts involving the use of anthrax spores were a salutary reminder that access to biological weapons, developed, manufactured and kept by governments, together with a delivery system as sophisticated as a postal service, that can cover an entire nation within days, has the potential to wreak havoc without a shot being fired. The letter sent to Senator Tom Daschle contained about 2g of anthrax spores, enough if distributed with high efficiency to infect millions of people. A 1993 report by the US Congressional Office of Technology Assessment estimated that, were 100kg of anthrax aerosol to be released upwind of Washington DC, the number of likely deaths could be 130,000.

But the anthrax scare brought out another issue, that of bacterial resistance to a wide and ever-broadening range of antibiotics, as a result of half a century of widespread misuse and even abuse. Worldwide, hundreds of thousands die each year because of bacterial infections that can no longer be controlled. These deaths are the ultimate consequence of over-the-counter sales of antibiotics, patient pressure on doctors always to prescribe and the indiscriminate use, especially in the US, of antibiotics as growth factors in intensive farming, including the spraying of orchards with antibiotics. Finally, microbiologists have discovered that widespread environmental pollution with heavy metals and persistent organic compounds can promote multi-drug resistance in certain strains of bacteria.

Panic in the days following the death in Florida on 5 October of the first anthrax victim, American Media picture editor Bob Stevens, led to people being

prescribed antibiotics, particularly ciprofloxacin, in the hope they would protect themselves from possible exposure to the bacterium. In Charlotte, North Carolina, the health department offered Cipro to the city's mail handlers because their centre had received mail from the postal station in Washington, where anthrax spores had been found. Some 230 took up the offer. According to Michael Hudson, a microbiologist at the University of North Carolina, 'it's a terrible idea to give Cipro when there is no evidence of contamination, and not just because of the potential of causing drug resistance but because of nasty side effects.'

For many years, APUA, the international Alliance for the Prudent Use of Antibiotics, has been charting the growing problem of antibiotic resistance in clinics, intensive care units, following surgery, and among the public at large. Stuart Levy, president of APUA, and professor of medicine at Tufts University School of Medicine in Boston, has no doubts on the implications of people unadvisedly using Cipro. He cites China, where antibiotics are readily available and abuse widespread, as a case in point. There, the majority of bacteria that cause urinary tract infections and other life-threatening diseases are resistant to fluoroquinolones, the family of antibiotics that includes Cipro. 'With the current abuse of Cipro in the US, the number of resistant strains of bacteria will inevitably go up,' says Levy. 'This is an experiment in microbial evolution that we do not need.'

Hospitals, in particular, can become fertile grounds for the spread of drug-resistant bacteria, and not just those strains that caused the original infection. One study in California indicated that a third of patients taking Cipro for a staphylococcus skin infection were already harbouring resistant bacteria within a few days. The concern is that resistance to the fluoroquinolones will emerge in *E. coli* which can cause urinary tract and blood infections, and to *Streptococcus pneumoniae*, the cause of pneumonia and meningitis. Staphylococcus and pseudomonas are also able to become resistant, with potentially fatal

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consequences. *Pseudomonas* can cause fatal septic shock in burn victims, in patients with cystic fibrosis and in people with suppressed immune systems as a result of AIDS or chemotherapy.

Antibiotic abuse

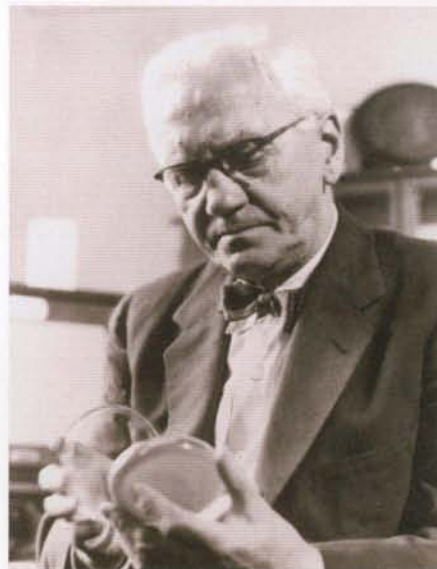
Alexander Fleming discovered penicillin by chance in 1928 when he noticed that colonies of the common bacterial pathogen, *Staphylococcus aureus*, were destroyed in the region of a penicillium mould that had contaminated a discarded petri dish. As Stuart Levy points out¹ the first highly publicised use of penicillin followed a devastating fire in the Coconut Grove nightclub in Boston, Mass in November 1942, when some 400 people died and several hundred others were left with severe burns. Some of those survivors undoubtedly owed their lives to new forms of treatment involving antibiotics.

The challenge for medical staff, then as now, was to prevent *Staphylococcus aureus* taking hold in the damaged tissue and killing the victim from septic shock. Critical innovations in the successful treatment of burn victims were giving blood plasma, combined with administering sulphonamides to control streptococcal blood infections, but, it was the extraordinary results obtained with the liquid produced by cultures of the penicillium mould that really caught the imagination. As it happened, at the instigation of Drs Florey and Chain in Britain, the Merck pharmaceutical plant in New Jersey had only just begun manufacturing penicillin and on the day following the fire rushed 32 litres of the antibiotic liquor to the Massachusetts General Hospital in Boston.

A flawed miracle

As a result of his continuing experiments with the antibiotic, Fleming discovered that by growing *Staphylococcus aureus* in increasing concentrations of penicillin he could select mutant bacteria with cell walls that would keep out the antibiotic out and prevent its killing them. He stressed the importance of patients receiving a full course of treatment, so as to

Blinded by science: Louis Pasteur and Alexander Fleming could not have foreseen the dangers of their discoveries.



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minimise the opportunity for the bacteria to develop resistance. He was also prescient enough to see the dangers of penicillin becoming available in oral form such that anyone could take it, even without a special prescription.

Then the real shock. In London, just a few years after the introduction of penicillin, strains of staphylococcus appeared that were resistant to penicillin, not simply by keeping it out, but by actually destroying it. By 1946,

in one hospital, 14 per cent of the strains isolated from patients had gained such resistance, and in the early 1950s nearly 60 per cent. Microbiologists still assumed that such resistance was the result of a mutation in the bacterial chromosome, but a discovery a few years' later in 1955 showed how wrong they were. A Japanese woman returned from Hong Kong with bacterial dysentery, caused by *Shigella dysenteriae*. That in itself was

Pick 'n' mix genetics: breeding resistance

Bacteria employ a number of strategies to lay their hands on vital genetic material and so defy the 'normal' rules of genetic transformation. In one kind of mating process, a bacterial cell harbouring a particular plasmid will send a filamentous protein thread, a 'pilus', out to another bacterium, followed by making a duplicate of its plasmid, which passes to the recipient. If the plasmid happens to contain antibiotic-resistant genes, then the new cell will immediately gain those properties.

In an environment bathed in antibiotics, such as in the soils of farms where antibiotics are used routinely as growth promoters, or where they have been used for the prevention of post-operative infections in hospitals, such exchanges of plasmids can lead to an exponential increase in resistance, given that each recipient then becomes a potential donor.

Versatility is the name of the game, and bacteria contain a number of 'jumping genes' or transposons, that work equally well whether attached to the bacterial chromosome or as part of a plasmid. Some transposons bear antibiotic-resistant traits and these, during conjugation, can either pass down with a plasmid or transfer directly onto the chromosome of the recipient bacteria.

Finally, bacteria can also pick up naked DNA and incorporate such genetic material into their chromosomes. Scientists, such as Mae-wan Ho, of the Institute of Science in Society, London, are concerned that the use of genetically-modified crops which contain an antibiotic-resistant gene marker, will provide just one more means by which gut bacteria, such as enterococci, will pick up such genes and then pass them on to other bacteria, so adding to the woes of clinical pathologists and their patients. It seems that if one can conceive of a means by which bacteria will pick up antibiotic-resistant traits, bacteria will have already been there.

not surprising; however, the infecting bacteria were found to be resistant to four antibiotics all at the same time, tetracycline, sulfonamide, streptomycin and chloramphenicol. Equally disturbing, *E. coli*, which are part of the normal bacterial flora of the bowel, was also showing multiple resistance.

For four antibiotic resistance mutations to appear simultaneously in the same bacterium, microbiologists realised that another process was at work, one which enabled bacteria, uniquely it seemed, to pick up genetic material from other bacteria, even unrelated ones, and so acquire antibiotic resistance without having to go through the long process of spontaneous mutations. Plasmids and transposons were found to be the key to genetic sharing (See box below left).

Genetic exchanges – transmission of antibiotic resistance

Plasmids exist as circular pieces of the genetic material, DNA which reproduce independently of the single chromosome found in bacteria. Plasmids may contain genes that enable bacteria to survive in a range of different, and often challenging conditions, such as an environment contaminated with heavy metals or other pollutants of modern society, including herbicides and antibiotics. Such genes, for instance, provide their bacterial hosts with the ability to extrude toxic substances, such as antibiotics, out through their cell walls. All too often, it seems, plasmids that confer protection against environmental contaminants are the very same that harbour antibiotic-resistant genes. Consequently, environmental pollution could be simultaneously encouraging the spread of antibiotic resistance.

Origins of resistance

Bacterial resistance to antibiotics is not a new phenomenon. In the 1960s a search for antibiotic-resistance in the wild revealed that faeces from Kalahari Bushmen and a range of animals in South Africa and Zimbabwe showed a smattering of antibiotic-resistance bacteria. Sometimes the resistance proved to be transferable, as in samples taken from the Solomon Islands and Borneo. Given that antibiotics are part and parcel of the natural flora of soils and are even synthesised in animals, it is hardly surprising that antibiotic resistance should also be a natural phenomenon.

But, as Ana Alonso, Patricia Sánchez

and José Martínez, of the department of biotechnology, the Autonomous University of Madrid, point out, current multi-resistance to antibiotics among bacteria is a new phenomenon, indicating that somehow the resistance factors have found their way onto plasmids that existed before in the bacterial population, but which did not necessarily harbour those factors. And some of the mechanisms for extruding antibiotics possessed by bacteria may have previously served other functions, such as eliminating heavy metals from the cell.

The Madrid scientists also refer to another disquieting problem resulting from the excessive use of antibiotics. Many antibiotics such as the quinolones, including Cipro, are very stable. They therefore remain as long-term pollutants which therefore result in the evolution of antibiotic resistant bacteria. Quinolones are the most used synthetic antibiotics in aquaculture and consequently are like to contaminate rivers.

Ever since Louis Pasteur and his demonstration that microscopic bacteria, such as the anthrax bacillus, were the causative agents of disease, we have tried to wage war against bacteria. The flood of products with antibacterial properties on the market, soaps, detergents, antibiotic-impregnated fittings, simply for the purpose of turning our homes and our bodies into bacteria-free zones, expresses just how far our pathological fear of bacteria has taken us. The awful irony is that our world has become the 'best of all possible worlds' only because of bacteria transforming our environment, from the air above our heads to the ground and waters at our feet. Bacteria and life are synonymous and without bacteria having set the stage of an oxygen- and nitrogen-rich atmosphere, we would not be around today.

By creating our own man-made environments within the biosphere we have lost sight of the role of bacteria in helping to maintain a steady state in the flow of vital nutrients through the system, whether out there in the larger environment or indeed within our own bodies. As Mae-Wan Ho of the London-based Institute of Science in Society, points out, we have so altered the environment for bacteria through antibiotic abuse, that it has led to many bacteria changing from being part of the normal gut flora to becoming potentially pathogenic.

In just one example, Stuart Levy refers

to the way in which widespread use of cephalosporin antibiotics has brought about the proliferation of the once benign intestinal bacterium, *E. faecalis*, which is naturally resistant to those drugs. 'In most people,' he says, 'the immune system is able to check the growth of even multi-drug resistant *E. faecalis* so that it does not produce illness. But in hospitalised patients with compromised immunity, the enterococcus can spread to the heart valves and other organs and establish deadly systemic disease.'²

The ubiquity of *E. faecalis* and its ability to acquire resistance makes it a particularly dangerous organism. It has now acquired resistance to vancomycin which has become the antibiotic of last resort for *Staphylococcus aureus*. The passing on of resistance from bacteria such as *E. faecalis* to pathogens – which Levy calls 'the bystander effect' – has enabled multi-drug resistant strains of acinetobacter and xanthomonas to emerge; worse still, these once-innocuous bacteria are now causing potentially fatal blood-borne infections in hospital patients.

According to Henri Verburgh, professor of medical microbiology and infectious diseases at the Erasmus Medical Centre in Rotterdam, *S. aureus* has become one of the top three clinically important pathogens. 'A particular worry,' he says, 'has been the rise of methicillin resistant strains.' Verburgh is of the opinion that the coming into existence of such methicillin-resistant strains of *S. aureus* – MRSA – and their spread by clonal division has turned *S. aureus* into a more virulent pathogen than it was before, presumably by giving it the edge over other competing bacteria.

The origin of antibiotics

Following the chance discovery of penicillin, the search was on to find others in the natural environment. The microbiologist, René Dubos, in 1939, was the first to discover soil bacteria that produced antibiotics, presumably to give them a competitive edge. He found that *Bacillus brevis* released a substance, which he then called gramicidin, that would kill gram-positive bacteria such as staphylococci. Gramicidin was found to be extremely toxic when given intravenously and so its use was limited to topical applications against minor skin infections.

Dubos' work inspired others to look for natural antibiotics and, in 1943, ■

ANTIBIOTICS

■ Selman Waksman, from Rutgers University in New Jersey, discovered streptomycin which was released from a group of soil bacteria known as actinomycetes. Streptomycin proved to be the only means at the time of combating tuberculosis, although such treatment did have drawbacks, including damage to the kidneys and temporary or even persistent deafness in some patients. A more serious drawback was the discovery that the TB mycobacteria became resistant to the antibiotic during therapy.

For the pharmaceutical industry the name of the game was not just to discover new antibiotics by scouring through the soil, but also to improve on those already in use, by altering parts of their chemistry and in some instances synthesising new substances almost from scratch, such as the fluoroquinolones which were developed from the synthetic agent, nalidixic acid. The important antibiotic, methicillin, was the outcome of the search for a penicillin-like antibiotic which would resist attack from the bacterial enzymes that degraded natural penicillin.

Then, in 1968, doctors reported the first instances of MRSA in Northern Europe. Ten years later the resistant form of *Staphylococcus aureus* had arrived at the University of Virginia. By 1980, half of all *S. aureus* surgical site infections and 40 per cent of blood infections from bacteria were the result of the MRSA strain.

Today, in the US, MRSA and vancomycin-resistant enterococci cause the majority of antibiotic-resistant infections. They also cost significantly more to treat than infections resulting from antibiotic-susceptible strains of the same species. Duke University estimates the excess cost on average of a MRSA-induced blood infection as \$27,083 compared to just over one-third the cost for a similar infection caused by antibiotic-sensitive strains. Most of the deaths from such infection were caused by MRSA.

Equally, the mortality from vancomycin-resistant bacteria in bone marrow transplant patients who then suffered blood infection was 46 per cent compared to no deaths if the enterococci were susceptible to the antibiotic.

Growth promoters and antibiotic abuse

In the US, researchers at the Centres for Disease Control and Prevention estimate that one third of the 150 million outpatient prescriptions for antibiotics each year are unneeded. One problem is patient pressure and, according to Stuart Levy, 80 per cent of doctors that he spoke to admit to have written prescriptions on demand against their better judgement. As Calvin Kuhm from the Ohio State University in Columbus, Ohio, points out, 'Inappropriate use of antimicrobial drugs is a serious medical and societal problem.' He believes that 'good' doctors should resist patient pressure to have antibiotics, and that if the patient insists, he or she should be 'offered the opportunity to seek medical care elsewhere.'

Since the 1940s antibiotic production has increased by leaps and bounds. In 1949, the US produced penicillin and streptomycin at the rate of 6.5 tonnes per month. By 1954, the rate of production of broad-spectrum antibiotics had tripled to 220 tonnes a year. Today, the quantity produced in the US alone is 18,000 tonnes a year, nearly half of which is used in the intensive rearing of animals as growth promoters and for controlling disease on the farm, which itself is largely a product of closely confined livestock.

In the UK, the Swann Committee of 1969 warned of the dangers of antibiotic resistance from farmers using antibiotic growth promoters, and recommended a ban specifically on the use of tetracycline and penicillin. All to little avail: by the end of the 1980s use of both those antibiotics as growth promoters had risen 16 and 7 times respectively. Today, 95 per cent of all *Salmonella typhimurium*, which causes debilitating, even deadly diarrhoea in humans and young animals such as

calves, is tetracycline resistant.

In 1997, the European Union banned Avoparcin as a growth promoter, despite the UK Veterinary Products Committee claiming that it was safe. That claim was later shown to be false through DNA-sequencing and the obvious discovery that the use of the antibiotic had led to Vancomycin-Resistant Enterococci. In 1999, Europe banned the use of six similar drugs. As a result, in the UK, 1999's figures for total antibiotic use on farms showed a 21 per cent decline to 448 tonnes. But, as Richard Young pointed out in *The Ecologist*,³ that decline could be attributed in part to the fall in livestock numbers, in particular pigs and chickens. Nor did it account, he says, for the illegal use of imported antibiotics.

The macrolide antibiotic, tylosin, has been used as a growth promoter in pig production in the UK. When, in 1997, the Veterinary Products Committee

'In what must be health care's version of global warming, we may have to give up our antibiotics for minor infections just as we may have to give up our cars for unimportant journeys.'

(VPC) was presented with irrefutable evidence that the farm use of tylosin had led to resistance to the related erythromycin the committee declined to take action, even though the antibiotic is of vital use in those patients allergic to penicillin and for children infected by *Campylobacter coli* and *C. jejuni*.

Tylosin was banned in Europe as a growth promoter in the EU action of 1999 but, as Richard Young points out, because of intensive rearing methods, pigs are generally infected with campylobacter and as a result vets are prescribing macrolides 'to make up for the ban of tylosin as a growth promoter.'

Stuart Levy showed in the mid 1970s just how antibiotic resistance to growth

IN WHAT ARE classic cases of antibiotic-resistant bacteria wreaking havoc after relatively minor surgery Rosie, 39 years old, cut two tendons and a nerve in her finger while trying to take off plastic price tags with a sharp knife from her fishing equipment. She had to have some surgery, but was still left unable to clench her middle finger, even after physiotherapy. A few months later she went in for outpatient surgery to have scar tissue removed so as to release the finger.

Days later she was in agony from a searing pain in her hand and was admitted with a high fever to the Hospital for Special Surgery in New York City. The medical staff pumped her full of antibiotics, but to little avail, and the surgeon decided the only way to save her was by opening up her hand and cleaning the infected wound. The next day her condition had deteriorated and the only recourse was to go in again and take out more accumulated pus. Lucky for her the procedure worked and Rosie made a full recovery, even though by then the bacteria had nearly eaten through one tendon and its attachments.

PEGGY, THEN 40, had a similar life-threatening experience in the same hospital and again as a result of a staphylococcus infection that proved recalcitrant to all the antibiotics that were thrown at it. After flipping her car into a ditch on a dark, rainy September night, Peggy crawled a quarter of a mile home with a broken bone in her heel. She later had to have an operation to set the bone and get the circulation to that area working again. Even though all the standard precautions were followed, the wound became infected, and this time, despite surgery and a range of antibiotics, the disease continued to spread, out of control.

'I woke up and my leg was killing me,' Peggy reported. 'It was swollen – my whole body was swollen. I gained like 20 pounds overnight. I just blew up.' To save her life Peggy had to have her lower leg amputated.

Even though the two other women had the benefit of antibiotics, continued antibiotic abuse in hospitals meant they might just as well have been living in the pre-antibiotic era, during which the author's own grandmother died as a result of septicaemia after cutting her finger on a tin. That was in 1929, before the days of penicillin. And still the abuse goes on, through slipshod prescribing by doctors, over-the-counter purchases, and the widespread use of antibiotics as growth promoters by farmers. Ignorance over the way bacteria obtain and then pass on resistance has bedevilled medical practice.

promoters passes to the human population. His research team found that *E. coli* from the faeces of farm dwellers in Massachusetts were resistant not only to tetracycline, but to ampicillin, streptomycin and sulphonamides, even though the individuals were not taking antibiotics. Presumably, the antibiotic resistance was the result of the widespread use of tetracycline as growth promoter in intensive chicken rearing.

'In the UK,' says Richard Young, 'the livestock system is drug dependent. The only durable way this can be changed is through a fundamental overhaul of the systems in which farm animals are kept. Until this is recognised and changed, antibiotic resistance in food-borne infections will continue to pose a problem for doctors treating life-threatening conditions.'

The future

'We screwed up, and we ought to say so and apologise,' declared Norman Simmons, emeritus consultant microbiologist from Guy's Hospital, London, at the PanEuropean meeting on antimicrobial resistance, held in Copenhagen in September 1998. 'Doctors were handed the wonderful gift of antibiotics but are destroying them through indiscriminate use. We don't need another committee. We know what to do: we should just use them less. In what must be health care's version of global warming,' said Simmons, 'we may have to give up our antibiotics for minor infections just as we may have to give up our cars for unimportant journeys.'

The big question facing the medical profession is whether a concerted worldwide strategy to control and limit the use of antibiotics will have the salutary effect of restoring the balance of a bacterial flora that has either shed its multi-antibiotic resistance or indeed, if still susceptible, can begin to compete for ecological space. As of now the jury is out.

Research in Finland suggests that erythromycin-resistance in *Streptococcus pyogenes* fell by half in the early 1990s as a result of stringent attempts in the country to restrict the use of the antibiotic and related macrolides. Even better results were obtained in Japan where erythromycin resistance in hospital patients in Asahikawa to group

A streptococcus fell from as high as 80 per cent in the late 1970s to almost zero 20 years later.

On the other hand, despite a nationwide restriction in the use of sulphonamides in the UK, resistance to the antibiotic remained high throughout the 1990s. One notion for the persistence of resistance is that 'compensatory mutations' take place in the resistance-bearing bacterium which minimises the extra metabolic cost to the organism. Another reason may be the continued use of sulphonamides in agriculture. The gloomy prognosis, at least for *E. coli* antibiotic resistance, is that such traits are persisting despite large cuts in the use of streptomycin and chloramphenicol.

In a British Medical Journal editorial Stuart Levy encapsulates the problem of antibiotic resistance. 'The message is clear – we are using too many antimicrobial drugs for the wrong reasons. Studies of newly emerging resistance,' he goes on to say, 'show that resistance in bacteria, as in cancer, arises in steps progressing from low level to high level, unless a plasmid is acquired on which full-blown resistance is already present... Decreased drug susceptibility should be a warning to change antibiotic use to diminish selection for resistance.'

'If a single point can be derived from our understanding of antibiotic resistance, it is the ecological nature of the problem. To this can be added the genetic fluidity of the bacteria. The difficulties we face today derive from misguided efforts to sterilise our environment by indiscriminately destroying bacteria when we should reserve our killing capabilities for cases where health is threatened by infectious strains. We should act now to restore and maintain the healthy balanced microbiology of the pre-antibiotic era – that is one populated by a predominantly susceptible flora.'

Levy says it all. Clearly it is the utmost folly to continue with medical and farming practices that jeopardise our health and lead to hundreds of thousands dying unnecessarily each year because of our wasteful outpourings of antibiotics into the general environment. Through our appalling practices, we have encouraged the evolution of bacteria that are indeed 'superbugs' ■

PETER BUNYARD is science editor of *The Ecologist*.

Hot enough for you?

Global warming is not just facts, figures and future forecasts. Meet the people whose lives are already being affected by it.

BY FRED PEARCE

***You have been warmed:** left to right: Bedouins lie on the ground to protect themselves from a sandstorm in the Sahara Desert; Ice melting on the shore and icebergs from the Breidamerkurjokull Glacier; A homeless girl stands in the mud in the village of Los Llanitos near Choluteca in southern Honduras; A village cut off by flood waters from the Vilaine River in Brittany, western France*



Lidia Rosa Paz was at a loss. She caught my arm and pointed despairingly into the raging river to the spot, 50 metres out into the water where, until days before, she had lived. Her shanty town called Pedro Dias in the town of Choluteca in Honduras had been washed away on the night of 28 October 1998, taking more than a hundred people to their deaths. Lidia had survived. But every one of her possessions had gone.

Hers was one story on a night when floods and landslides ripped apart the country's geography, leaving more than 10,000 Hondurans dead and two million homeless. It was the night that Hurricane Mitch, the most vicious hurricane to hit the Americas in 200 years, came calling, and dumped a year's rain on the small Central American country in just a few hours. Choluteca is in southern Honduras, on the Pacific coast far from the normal track of Caribbean hurricanes. When the radio issued storm warnings that night, neither Lidia nor any of her neighbours took much notice. 'Hurricanes never come here,' she told me. Or at least they never did.

For tens of millions of people across the world, Lidia's story is prophetic. Many meteorologists believe that Mitch – a ferocious hurricane made worse by the warm seas that allowed it to absorb huge amounts of water from the ocean – was a product of global warming, and a sign of things to come. For the hundreds of millions of inhabitants of flood-prone river valleys and coastal plains across the world. For those living on deforested hillsides prone to landslips. For more who do not yet know that they are vulnerable in a new era of 'hyper-weather'.

Within months of Mitch, a similar

disaster of record rains, floods and landslides ripped through the shanties west of Caracas in Venezuela, killing 30,000. Again the storms hit areas not used to climatic extremes. 'No one could have foreseen what happened here,' said José Rafael Gomez Pinto, a Red Cross volunteer. 'This was a vacation area where people came to spend the weekend. Even millionaires had houses here.'

And soon after, storms in the Indian Ocean took their turn, flooding large swathes of eastern India and Mozambique. Climatologists said the ocean was exceptionally warm. Evaporation released exceptional amounts of moisture into the advancing storms. Millions suffered and their plight was encapsulated in the television images sent round the world of Sofia Pedro, who gave birth to her daughter Rositha in a tree as the flood water surged around her.

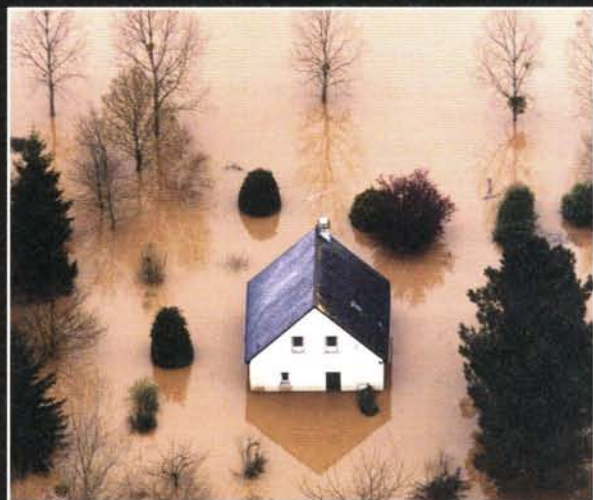
'The water was coming right up to the house, and was getting stronger and stronger, so like everyone else in the village, we headed for the trees,' she said later. 'There were 15 of us all together, and we were there for four days. We prayed and prayed. We had nothing to eat, and the children cried and cried, but we could do nothing for them.' The name of the tree, Maturrara, means 'sacred'. The villagers would pray to the tree, so they had faith that it would protect them.

1998 was the year of weird weather. Besides Hurricane Mitch, it was the year that forest fires of unprecedented ferocity ripped through the jungles of Borneo, and neighbouring New Guinea had the worst drought for a century. East Africa saw the worst floods for half a century – during the dry season – with much of the

desert north of the region flooded. Tibet had its worst snows in 50 years. Ice storms disabled power lines through New England and Quebec, plunging residents into a world without power or electric light for many days. The coffee crop failed in Indonesia, cotton died in Uganda and fish catches collapsed off Peru. There was no water to fill the Panama Canal. Warm seas caused the tiny algae that give coral their colour to quit reefs in their billions across the Indian and Pacific Oceans, leaving behind the pale skeletons of dead coral.

The following year, freak storms cut a swathe through Europe, from France to Romania. Two-thirds of France was declared a disaster zone after winds of 200 kilometres per hour ripped up millions of trees, including 10,000 in the grounds of the palace at Versailles outside Paris alone. 'We have never seen this kind of violence before,' said Patrick Galois of the French weather service. In the UK, the three autumn months of 2000 were the wettest in a record going back more than 200 years. Parts of south east England had nearly three times the normal rainfall. In September 1999, central Nigeria suffered the worst floods in a generation, with hundreds of villages under water.

All a coincidence? Not according to the UN's Intergovernmental Panel on Climate Change (IPCC). It says recent years have seen a clear increase in 'heavy and extreme precipitation events'. The weather was showing exceptional violence because 1998 was the warmest year in the warmest decade in the warmest century of the last millennium. The second and third warmest years on record were 1997 and 1995. There is now little doubt that our planet warmed 🌡️



CORBIS, REUTERS

GLOBAL WARMING

substantially during the 20th century. In the final 20 years, it warmed by 0.5°C.

All around, weather has become more extreme. Wet regions of the planet, such as steamy tropical rainforests and the rain-drenched middle and higher latitudes of the northern hemisphere, have become both wetter and stormier. Average annual rainfall globally has increased by up to 10 per cent during the 20th century because warming has increased evaporation. The floods that inundated Mozambique in 2000 and again in 2001 arose because maximum daily rainfall in parts of the region had risen by 50 per cent during the century.

The proportion of rain falling in heavy downpours has increased by a quarter in the eastern US. And British climatologists confirmed 'clear evidence in the UK that twice as much of the winter rains are falling in intense downpours as in the 1960s', leading to floods of the kind that brought havoc in late 2000. They found a similar pattern in Australia, South Africa, Japan and Scandinavia, as well as a 'significant intensification of the Asian monsoon', reflected in the worst floods on the Mekong river in 70 years.

At the same time dry areas in continental interiors have become drier, causing deserts to spread. With average annual rainfall down 20 per cent in the Mediterranean, forest fires rage during most summers. And Spain has embarked on massive plans to transfer water from the wetter north west of the country to the drying south and east. The rain dried up in the Asian interior, centred on Afghanistan, which has now suffered three years of intense drought. The unprecedented drought has been a far bigger killer for rural communities than the Taliban or the US bombing. 'We are waiting to die. If food does not come, we will eat this...' Ghalam Raza, a man close to death in the northern Afghan village of Bonavash, told reporters in January this year. He was holding up a piece of crude bread made from crushed grass. The entire village, reporters said, was in a similar condition, with diarrhoea, distended bellies and bleeding bowels epidemic.

Across Africa, river flows fell by 17 per cent during the 1990s, leaving fish high and dry, emptying irrigation canals and hydroelectric reservoirs alike. The desiccation of much of Africa is already

undermining economies. In Zambia, according to environment secretary Jewette Masinja, the southern, central, western and eastern provinces have all been hit by recurrent droughts in the past decade, wrecking the country's 'grain basket' region.

Hitting the defrost button

The planet is thawing as it warms. In northern Canada, hunters are finding insufficient snow for their traditional hunting season. And melting ice is taking seals, a traditional source of meat and furs, far from the shore. 'In 2001 the ice stayed over the horizon all summer. We had to go over 30 miles just to hunt seals,' said Eugene Brower of the Barrow Whaling Captains' Association. Changing wind patterns mean that snow ridges have shifted and ancient methods of navigating through frozen wilderness no longer work, say the hunters.

Meanwhile an 84-year-old betting contest held annually on a frozen Alaskan river is providing the latest evidence of a global thaw. The Nenana Ice Classic has been held since 1917 on the Tenana River. Contestants bet for a jackpot, that this year hit \$300,000, on the exact moment when a wooden tripod erected on the frozen river falls through the breaking ice each spring. When they checked the records they found that the breakthrough occurs today an average of five days earlier than at the start of the contest.

'The ice is thinning and people are falling through it,' say hunters on Baffin Island in the Canadian north. One experienced hunter recently lost both legs to frostbite as a result. And ice cellars used by Alaskan hunters for centuries to store caribou meat and whale blubber through the summer are melting, as the permafrost proves not to be permanent after all. Oddly, igloos no longer keep the Inuit warm. Unprecedented winter warm spells in the Arctic are causing igloo walls to melt and refreeze, losing their insulation properties in the process.

Much of Siberia has warmed by 5°C – eight times faster than the global average. As frozen soil is replaced by bog, roads buckle and buildings topple. One such at-risk building is the nuclear power station at Bilibino. The Greenland ice cap is losing thickness at up to a metre a year. Recently declassified sonar measurements

by UK and US military submarines reveal a decline in the average thickness of Arctic ice in late summer of 42 per cent in the past 40 years. Ships can now sail through the legendary Northwest Passage above Canada most summers.

The evidence of a global thaw extends far beyond the Arctic. Satellite observations show that snow cover on land has diminished by 10 per cent since the 1960s. Mountain glaciers have retreated from the Andes to the Himalayas to the Rockies. Mount Kilimanjaro in Tanzania has lost 82 per cent of its ice cap since 1912. Alpine glaciers have lost half their volume since the pioneer mountaineers first scaled their peaks in the mid-19th century. Several Alpine ski resorts are on the verge of being abandoned by tour companies because they can no longer guarantee snow. Austrian resorts such as Kitzbuhel and Zell am See are at most immediate risk. But only a handful of resorts can



now provide pre-Christmas snow, and in most places the ski season has been pushed back by two weeks.

Europe's retreating glaciers are yielding up grisly secrets. In Italy, where August 2000 was the warmest on record, a huge labyrinth of tunnels and trenches constructed by Austrian troops in the glaciers of the Dolomite mountains during the First World War re-emerged, exposing frozen combat boots, food tins, rifles, live ammunition and several

skeletons of soldiers. The same month, the bodies of four British airmen, deep frozen in northern Iceland since a plane crash in 1941, also emerged.

The loss of glaciers is not just an aesthetic irritant or an inconvenience for winter sports. It can kill – big time. Back in 1970, a lake of water that had melted from the foot of a glacier on Mount Huascarán in the Andes burst its banks and rushed down a mountain valley, engulfing an estimated 60,000 people, almost half of them in the town of Yungay, which disappeared from the map. It was, at least arguably, the biggest single disaster caused by global warming

'In Piul, many families are leaving. On Huene, the island is divided into half now and there is a wide passage in the middle.'



CORBIS

to date.

After 1970, Peru's leading hydroelectric company, ElectroPeru, began to survey most of the country's glacial lakes. In 40 cases, it employed engineers to siphon off the water from potentially dangerous lakes. But five years ago it stopped the work, arguing that it was a government responsibility. 'This is really dangerous,' says Peruvian mountaineer and glaciologist Cesar Portocarrero, 'With global warming, new lakes are forming all

A question of degrees?

- 1998 was the warmest year in the warmest decade in the warmest century of the last millennium. The second and third warmest years on record were 1997 and 1995.
- Average annual rainfall globally has increased by up to 10 per cent during the 20th century because warming has increased evaporation. The floods that inundated Mozambique in 2000 and again in 2001 arose because maximum daily rainfall in parts of the region had risen by 50 per cent during the century.
- Satellite observations show that snow cover on land has diminished by 10 per cent since the 1960s.
- Mount Kilimanjaro in Tanzania has lost 82 per cent of its ice cap since 1912.
- Sea levels worldwide rose by 10-20 centimetres during the 20th century
- Four out of five of the world's beaches are eroding. On the Atlantic and Gulf of Mexico coasts of the US the coastline is retreating at an average one to two metres a year, claiming 1500 buildings a year. Louisiana is losing an acre of land every 24 minutes.
- A study of more than 50,000 children in Lima, Peru, from 1993 to 1998 found that for every 1°C of warming, 8 per cent more children arrived at a local clinic for treatment of diarrhoea. Warming in 1998 doubled the number of cases.
- A review for the IPCC in 2000 found more than 400 'statistically significant associations' between climate change and disrupted ecosystems.
- In England aphids are emerging so early in spring that the migrating birds that feed on them are still in Africa.
- A quarter of all the world's coral reefs has been destroyed in the past 20 years, mostly by rising sea temperatures. In the Indian Ocean and parts of the Pacific, more than three-quarters of shallow coral reefs are thought to have died. Among the thousands of coral atolls that make up the Maldives of the Indian Ocean, the mortality rate is 90 per cent.

the time. We no longer have them mapped, so the risk of another big disaster grows.' One high-risk area, he believes, is among the glaciers around Salkantay Mountain near the Inca ruins of Machu Pichu.

Sea levels rising

The people of Tuvalu are abandoning ship. They have signed a deal with New Zealand that will allow them to leave their country in fixed numbers each year,

beginning this year, as rising tides and worsening storms destroy their homes. Tuvalu is a group of coral islands in the South Pacific, nine of which are home to the country's total population of 10,000 people. Paani Laupepa of Tuvalu's ministry of natural resources, said: 'We have coastal erosion, droughts and an unusually high level of tropical cyclones. Salt water intrusion [into soils] has affected our traditional food crops, and now we are seeing flooding of low-lying areas.'

As ice on land melts and the waters of the oceans gain volume through thermal expansion, sea levels worldwide rose by 10-20cm during the 20th century. The once-idyllic islands of the South Pacific have suffered more than a billion dollars in damage from tropical storms and rising sea levels in the past decade. Nakibae Teuatabo, a resident of Kiribati, explains their day-to-day plight: 'Eight or nine house plots in the village that my family belongs to have been eroded away. I remember there was a coconut tree outside the quarters where I lived. The beach all around it was eroded, and eventually it disappeared. Also the droughts are much worse than they used to be. We can go more than six months without rain these days. Now the next row of coconut trees is withering, too. Our elders say we have never had droughts that last so long.'

In mid-2001 charities began rushing food aid to a clutch of low-lying coral islands off Papua New Guinea. Children were reported starving as rising sea levels eroded fields and poisoned soils with salt water, and strong winds and rough seas prevented islanders going to sea to catch fish. The Carteret Islands have been losing small islands regularly since the 1960s. In 1995, a tidal wave washed away the shorelines of Han, Piul and Huene islands. Many people resorted to eating sea weed and relying on government relief supplies. One islander on Han told the *Independent* newspaper in Port Moresby: 'The situation here now is that erosion is occurring from both sides and the island is getting narrow. In Piul, many families are leaving. On Huene, the island is divided into half now and there is a wide passage in the middle. Four families only are left while most have left for the other atolls. The situation on Iolasa, Iosela and Iangain islands is such that when high seas occur, they stand below sea level and this is very frightening.'

Four out of five of the world's beaches are eroding away. On the Atlantic and Gulf of Mexico coasts of the US the

GLOBAL WARMING

coastline is retreating at an average one to two metres a year, claiming 1,500 buildings a year. Louisiana is losing an acre of land every 24 minutes. Here, rising tides are increasing the risk of deadly storm surges pouring inland across lagoons and bayous. The sea is invading vital barriers, islands and marsh areas that once protected the land behind.

Disease

Many human diseases are extremely sensitive to changes in temperature. Mosquitoes carrying malaria and dengue fever are spreading out of lowland tropical swamps into the tropical highlands of Kenya and Zimbabwe, bringing the disease to new populations that have no immunity. This occurs most dangerously in the aftermath of floods and storms. Dengue fever reached epidemic proportions in Tegucigalpa, the capital of Honduras, after Hurricane Mitch. And there have already been unpleasant surprise epidemics.

When Somalia and northwest Kenya suffered unseasonal heavy rains in early 1998, a cattle disease called Rift Valley fever jumped the species barrier and killed more than a thousand herders and their families within a few weeks. The disease had invaded rural communities without medical services and already weakened by drought. Louise Martin, a WHO doctor who flew into the infected zone, said that these desert people 'were living huddled with their animals on small patches of dry land. They had no clean water, and little food except for their diseased animals.' She watched them die of what locals called 'the bleeding disease'.

Mohammed Hassan left a village on the Somali border where five people and many animals had died. He walked for 20 days through the flooded countryside to the regional centre of Garissa where, as he lay on a hospital bed waiting to die, he told how he had eaten sick animals because there was no other food. Outside, a goat which had just aborted ate grass where a child played.

And without extra vigilance in public health, including better sanitation, water-borne diseases such as cholera and river blindness could return in many areas. A study of more than 50,000 children in Lima, Peru, from 1993 to 1998 found that for every 1°C of warming, 8 per cent more children arrived at a local clinic for

treatment of diarrhoea. Warming in 1998 doubled the number of cases.

Climate change could also be delivering exotic animal diseases round the world on the winds. An early example could have been the recent outbreak of foot and mouth disease in the UK. According to Dale Griffin of the US Geological Survey, southerly winds brought a dust cloud from the Sahara desert, where the disease is endemic, to the UK just a week before the mysterious outbreak began last February. Changing atmospheric circulation has increased the incidence of Sahara dust reaching the UK. Dust from the Sahara has probably also spread a deadly fungus that kills coral to Caribbean coral reefs.

Could the worldwide surge in hay fever be part of the greenhouse effect? Researchers at the US government's Department of Agriculture believe a combination a high CO₂ levels and warmer temperatures could be triggering big increases in the amounts of pollen in the air.

Siege

Nature is under siege from global warming. A review for the IPCC in 2000 found more than 400 'statistically significant associations' between climate change and disrupted ecosystems. There was a 'widespread and coherent impact,' on all continents and involving all types of plants and animals, it said.

In the Canadian north, polar bears and walrus are going hungry as they wait on land for the ice to reform in autumn and allow them back onto their marine hunting grounds. Migrating caribou cannot reach their summer pastures before the grass has gone to seed. In England, aphids are emerging so early in spring that the migrating birds that feed on them are still in Africa. In the waters off Antarctica, krill find that the sea ice under which they feed is disappearing. Other creatures go hungry as a result. This may explain population crashes among the sea lions of the Falklands and elephant seals of the South Shetland Islands.

A quarter of all the world's coral reefs had been destroyed in the past 20 years, mostly by soaring sea temperatures. In the Indian Ocean and parts of the Pacific, more than three-quarters of shallow coral reefs are thought to have died. Among the thousands of coral atolls that make up the Maldives of the Indian Ocean, the mortality rate is 90 per cent. When, in 1999, biologists made a rare visit to one of the world's largest, most remote and biologically rich coral atoll systems, the Chagos Islands in the middle of the Indian Ocean, they reported that 'most of the coral is dead'. Sea temperatures not seen in the Caribbean for at least 3,000 years have wrecked the coral reefs of Belize.

Climate change is already depressing fish stocks in many parts of the world, warns one of the world's leading fish scientists, David Griffith of the International Council for the Exploration of the Sea. Changes in the North Atlantic are a particular concern. Sea bass have already drifted north out of British waters and towards Norway in recent years. The collapse in cod stocks in the North Sea and western Atlantic may be partly attributable to a 1°C rise in sea temperatures in the past decade, according to UK government scientists.

Meanwhile on land, tropical trees are growing faster and dying younger. A run of warm winters has unleashed in western Canadian forests an epidemic of mountain pine beetle, which has spread through an area the size of Ireland, killing trees within a year. The beetles have been present in the forests for thousands of years, but their population was held in check by winter cold, which kills the larvae. Until now.

Bright side?

Finally, want some good news? It's a hard call, but for Californians at least, the surf's up – permanently. The state's waves are growing bigger. Thanks to global warming increasing the intensity of Pacific storms, the biggest waves are a third higher than 50 years ago.

It seems life really is a beach ■

FRED PEARCE is UK Environment Journalist of the Year, 2001, and author of *Global Warming* in the Essential Science series published by Dorling Kindersley, March 2002.



THE PIED PIPER OF UN

The Third World, says **Devinder Sharma**, is being made to dance to the tune of GM food.

The UN has donned a new robe. After its failure to retain its unique and trusted position as the world's only peacekeeper, it has now decided to play Pied Piper – leading the flock of discredited biotechnology giants and agribusiness companies to the hitherto inaccessible and vast uncharted terrain that the majority world provides.

Like the Pied Piper, it too plays an enchanting tune on the flute – of eradicating hunger. After all, there are an estimated 800 million people who go to bed hungry every night and the mere fact that the rich and the industrialised world is trying to aim at reducing global hunger and that too under the UN flag, is sure to draw an applause. Topped with 'cheese' – direct foreign investment – the rats in the developing countries eagerly await the 'novel foods'.

With genetically modified foods already so stigmatised in the West, the UN has taken on the monumental task of reversing the biotechnology industry's flagging hope and fortunes. By paving the way and clearing the hurdles for the industry's takeover of sustainable farming systems, the UN desperately aims at opening up the huge Third World market. And what happens to the world's poor and hungry is certainly not its concern. It never was.

The undue emphasis on GM crops in the controversial *Human Development Report 2001*, commissioned by the UN Development Programme (UNDP), was not an aberration. It was part of a covert design by the UN to push GM crops onto unsuspecting developing economies. No sooner has the controversy and debate over the faulty prescription showed signs of settling down, it is now the turn of the UN Environment Programme (UNEP) to let loose the 'new momentum' – support, develop, rehabilitate, upgrade and sustain national food safety and quality systems to enable biotechnology industry to make a smooth entry.

Financed by the Global Environment

Facility (GEF), UNEP has launched a \$38.4 million project, essentially to enable developing countries to import GM food. It aims at training officials and business people in around 100 countries so as to sharpen their scientific and legal skills for evaluating the health and environmental issues pertaining to global trade in GM foods. Signed by 107 governments in January 2000, the Cartagena Biosafety Protocol has been ratified by only 10 countries and for it to take effect another 40 countries are required to do so. Why then is UNEP in such a great hurry to start implementing the guidelines?

Klaus Toepfer, UNEP Executive Director provides the answer: 'Industry is convinced that genetically engineered crops are the key to boosting yields in a more environmentally friendly way. But others are concerned that the new technology may actually pose environmental as well as health risks'. Since when has industry started setting the agenda for UN agencies? Isn't it strange that UNEP, which should be more concerned about the resulting environmental pollution from the spread of genetically manipulated plants, instead is more than keen to promote crops and food products about which serious doubts exists?

UNDP and UNEP are not the only two UN agencies involved. The World Food Programme (WFP) too for quite some time has been distributing GM food in its humanitarian aid assistance programmes. In Africa, the mid-day meal programme for school children that the WFP had launched on behalf of the US, was actually meant to reduce the huge stockpile of GM soybean that Europe had refused to buy from the US. While the WFP continues to ignore the health risks associated with GM food, for obvious reasons, let us look at the role the Food and Agricultural Organisation (FAO) is busy with.

At a time when the international community has postponed to 2015 the

Herculean task of feeding the world, FAO director-general, Dr Jacques Diouf says: 'Freeing the planet from hunger is a formidable challenge... and I am convinced that this objective is within our reach.' Acknowledging that Africa alone has the highest concentration of undernourished people in the world, accounting for 28 per cent of the continent's population, he finds the key factors contributing to the high hunger percentage include political instability, inappropriate economic policies, weak regional co-operation and limited economic integration. Yet the FAO is banking upon GM to bail out Africa!

The FAO thinks that GMOs are a fact of modern agriculture, and are here to stay. It recognises the potential and complications of these technologies, and calls for assessment of GMOs in terms of their impact on food security, poverty, biosafety, and the sustainability of agriculture. Will GMOs increase the amount of food in the world, and make more food accessible to the hungry?

On the contrary, the FAO hasn't initiated any serious debate on the issue. It refuses to look for answers to the questions it poses. It refuses to provide a categorical answer to the question whether GM crops will increase the amount of food and help in feeding the world. It even refuses to launch a global study to determine whether GM crops are harmful for the environment and human health. The reason is simple. It does not want to be drawn into any controversy that may offend the US food industry, and the US Department of Agriculture's open stand on promoting its biotechnology industry.

Meanwhile, the Pied Piper continues to merrily sing and dance to the biotechnology industry's tune. The poor and hungry should find solace in commercial music even if they can't manage two square meals a day!

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THE IDEOLOGY OF DEVELOPMENT

Jeremy Seabrook argues that development is not as inevitable as many make out.

'Development', contrary to the claims of its global employees, is not a natural process, unfolding in time as though it were the incarnation of progress itself. It is an ideological construct, and one, moreover, that remains rooted in the specific historical moment in which it was conceived and elaborated.

In his inaugural presidential address in January 1949, Harry S Truman declared: 'We must embark on a new programme for making the benefits of our scientific advances with industrial progress available for the improvement and growth of underdeveloped areas.' It has since been recognised that in a single sentence, Truman consigned more than half of humanity to backwardness. The cultural richness and diversity of the world, ancient patterns of life and ways of answering need became, not a reason to rejoice, but a problem, which was to become the object of a Western project of redemption. The idea of 'development', formulated at the beginning of the Cold War, was originally a strategy, offered as an alternative to socialism to countries then emerging from imperial control. The competitive battle with communism, which was to last until the disintegration of the Soviet Union, was also a cultural war. In time, the developmental ideology of the West would deploy a florid iconography of affluence and plenty across the globe, in conspicuous contrast to the sullen and shabby austerity of the socialist countries.

Bangladeshi economist Anisur Rahman recognised this early on: 'It was the threat of Bolshevik revolution inspiring social revolutions in the Third World that was countered by a promise of "development" to help underdeveloped societies to catch up with the "developed"'. Development was exclusively defined as economic development, reducing the degree of progress and maturity in a society to be measured by the level of its production. The attraction of massive external finance and thrilling technology generated client

states in the 'underdeveloped' world, where oligarchies able to capture the organs of state could enrich and empower themselves as a class relative to the wider society, to whom 'development plans' were offered as a perpetual hope for prosperity.' While such benefits failed to reach the great majority of the people, they have resulted in the 'obstruction of the evolution of indigenous alternatives for societal self-expression and authentic progress'.

'Development' also concealed a deeper ideology. It evoked the idea of organic growth, the evolution, flowering and maturation, not merely of the human being, but of everything in nature. 'Development' also implied an unfolding, a becoming, a process inherent in the very 'birth' of new countries in Africa and Asia. This also smuggled into the concept of development the notion that the 'underdeveloped' countries were like infants, and that it was their eventual destiny to strive for the ripeness of those which had, in a less self-conscious moment, cast themselves as 'mother-countries'. In this way, a reconstructed racism was already built into the benign plans laid down by the West for the future of those countries in whose dispossession they had played such a significant part in the colonial era. The parallel concept of 'emerging' countries or economies only strengthened the dateless state of non-being – darkness, ignorance or the womb are the places out of which such entities 'emerge'. In this way, the new rhetoric of the West lay in wait, ready to re-appropriate ideals of nascent nations, liberation movements and anti-colonial struggles, to which the offer was made, not of imperial control, but of parental nurture and protection, while they 'developed'.

Charged in this way with a number of components transferred from an earlier time of dominance (poor countries as children, the rich as their mentors, a linear view of progress), the ideology of development took on a life of its own. Its

association with 'growth' was readily absorbed into the necessity for perpetual economic expansion. The creation of wealth was manifestly the most potent outcome of the Western model; what did not appear, despite the luminous and showy attraction of the goods and services it produced, was that the heaping up of so much wealth remained obscurely disconnected from human need. It seemed obvious that a system which could offer such plenitude to the world must be able to abolish poverty. The criticism that generating more wealth only generated deeper discontent was a trivial flaw, although one which effectively masked the more damaging reality, that even the richest societies in the world were also scarred by crime, violence, addictions, social breakdown and psychic disorder, the hidden costs of this version of riches. None of this, of course, interfered with the outer appearances of happiness and fulfilment which the busy engines of Western publicity and communication spread throughout the world. This did not, however, allay the suspicions of many Third World intellectuals and academics of the sudden change of heart of the quondam imperialists. Accordingly, they sought variants of this alien vision of their future, even though they rarely questioned the basic developmental paradigm. They came up with 'human development'. There was 'participatory development'. There was 'endogenous development', which would be constructed from within the capacities of the people themselves. A more recent form has been 'sustainable development', in belated recognition of the contradiction that infinite growth within a finite resource-base is stretching too far, not merely the carrying capacity of the earth, but also the credulity of its people. Since then, 'post-development' has emerged, with its suggestion that we are already living in a kind of after-life, post-modern, posthumous.

But while the lure of development was

primarily a strategy pitted against its socialist rival, the promises implicit in its imagery remained largely in the realm of fantasy, a distant dream, a faint hope of deliverance; and as such, were regarded with a certain scepticism by the poor, preoccupied with food security, shelter from the monsoon rains, clean water, literacy, health care and the safe passage through childhood of a new generation.

If the very existence of the alternative that was Communism held the world in frozen immobility for half a century, the dissolution of the USSR not only vanquished a rival faith and annulled all alternatives, it had other repercussions: in particular, it called the bluff of the developmental mirage which the West had promoted to such effect in the world in place of the asperities of a moribund socialism.

The victory of the West led to a more exuberant celebration of its powers, and a more intensive promotion of the emblems of its supremacy; and the logos and symbols of the transnationals fizz more brightly than ever in the night skies over the world's megacities. It had already demonstrated that everyone wanted the things so liberally held out to an expectant and waiting world. But the time had come to call in promises made in the heat of global rivalry, to test whether or not they were capable of material realisation.

If the universal benefits of the western way of wealth have remained intangible for a majority of humanity, their desirability is not in doubt. Everywhere in the world, people have voted with their feet, seeking out the golden realms to which they had been for so long invited. Third World elites have poured black money into real estate in the Parc Monceau, Knightsbridge or Bel Air, invested in the education of their children in the academies of the US and Europe, secured their health care in discreet private clinics, and stashed away their money in offshore havens. Graduates from the Third World are queuing up for the privilege of working as houseboys in Jeddah or Abu Dhabi, as factory labour in economic priority zones all over Asia, as fast-food servers in the have-a-nice-day culture of Europe and North America. Some have travelled in leaky boats to pick potatoes or beet in the icy winter dawns of Northern Europe,

and, packed into refrigerated containers and suffocating trucks, have not infrequently perished in pursuit of oppressive labour at destinations they never reached. It seemed the world was still to be won, only not in the places where the majority of the people lived. The rooted and place-bound, the local and familiar landscapes would have to be abandoned. The good things that beckoned would not come to them; they would have to be sought out in the places where they had accumulated in such bewildering abundance.

The epic migrations of our time took

'The idea of 'development', formulated at the beginning of the Cold War, was originally a strategy, offered as an alternative to socialism to countries then emerging from imperial control.'

place under the stimulus of glossy prospectuses of modernisation, progress and, above all, development. Are the caravans of hope now traversing the world following familiar pathways to prosperity, or are they merely tracing the agent of their dispossession to its source? And if the latter, is this why so severe an interdict has been placed upon economic migrants, those chancers and opportunists who have tried to take advantage of the dismantled borders of globalisation? Suffering multitudes who were disingenuously lured by promises of improvement, so they should not be tempted by the less glamorous attractions of an atrophied socialism, now face barbed wire, No Entry signs and armed guards posted on the corners of the closed avenues of global mobility.

Fundamental flaws in the model, concealed for so long by the more glaring defects of its ideological rival, have become clearer. The West is prepared to share, not its wealth (that would be asking too much), but the mysteries of its prodigious capacity for wealth-creation, with the world. The messages whispered into receptive ears of the leaders of the South, however, omit certain details; principally that the West did not grow rich without the enduring subordination of the very territories it is now bidding to

follow in its footsteps. Indeed, the best-kept secret of the version of development now on universal offer is that it is essentially a colonial construct, an extractive project. Since most of the territories presently in receipt of the lavish advice, prescriptions and recommendations of the Western powers and their institutions have no overseas or colonial possessions from which wealth may be squeezed, they are forced to place intolerable pressure on their own people and environment. The rights of minorities are violated, the resource-base of forest people and subsistence farmers plundered to earn foreign exchange, the labour of the poor is sold to the lowest bidder, while 'surplus population' is moved as settlers into the ancestral homelands of indigenous and tribal peoples.

The crisis of socialism which abolished the Soviet Union was actually a deeper crisis in industrial society itself. The noisy victory celebrations of the West obscured, for a time, the deeper fault-line in an industrialism of which socialism was only an heretical aberration. This banished, the true creed of political economy could unfurl its banners of laissez-faire across the world, and all societies, all cultures would acknowledge its superiority.

But setting free a system of limitless economic expansion in a limited world – the underlying ideology of the developmental model – is no more realisable now than it was when inhibited by the dour austerities and killjoy controls of socialism.

Of course, it is possible that market culture may reach all the inhabitants of a world already ransacked for its treasures. But if it does so, the poor can expect consumerism instead of relief from poverty, economic growth instead of a secure sufficiency, Coca Cola rather than safe drinking water, instruction from commerce in lieu of education, the products of entertainment conglomerates as a substitute for ancient, rooted cultures. How long they will tolerate this version of a development, devised in another era, as decoy and diversion from the sometime beguiling path to socialism, is a question to which answers are already being provided by some of the humiliated and excluded.

*Jeremy Seabrook's book, **Freedom Unfinished, Fundamentalism and Popular Resistance in Bangladesh Today**, is published by ZED Books.*



TOMB RAIDERS

Chris Floyd digs up some dirty dealings in the US funeral business.

It was the night after Christmas on Florida's eastern shore. A tepid rain was falling as a couple of county lawmen pushed up the garage door at a ranch house on Sugar Pine Drive, just outside Boca Raton. They stood back for a minute to let the fumes spill out, a few remaining shreds of the poison cloud that had done its work hours ago. The car was no longer running.

Behind the wheel – just as they'd expected after getting the wife's frantic phone call half an hour before – was the body of Peter K Hartmann, regional manager for Service Corporation International.

'The funeral guy,' said a deputy, then went to call for the meat wagon.

SCI, based in Houston, is one of a handful of international corporations that have gobbled up the funeral industry in recent years, squeezing out independent operators in hardball takeovers. It's been a sweet deal for the Texas boys, better than oil: the only business in the world with a guaranteed, never-ending supply of 'customers'.

The company had been all over the local news recently: They'd just been hit with a big lawsuit, accusing them of 'recycling' bodies in several Jewish cemeteries they owned in the Palm Beach area – cramming new cadavers into existing graves, or digging up the dead and tossing their bones and tattered burial shrouds into the woods nearby. A few outraged mourners had brought the initial suit, but there were hundreds more getting ready to join it.

The funny thing was, Hartmann had not been directly implicated in the growing scandal. He was a local wheel for SCI, sure, but the cemeteries in question were not in his territory. In fact, he had been brought in to help clean up the mess, and had apparently gathered a good deal of background information on the gruesome goings-on. He was known as a straight arrow, a devout Catholic and devoted family

man. 'He's about as upright a person as that company's ever had working for them,' a former co-worker told the Miami Herald. 'He would certainly have always tried to do the right thing.'

Hartmann's wife said he'd been upset by the grisly allegations; perhaps the company's response had rattled him as well. The mourners had videotapes of bones and shrouds scattered in the bushes, and they had sworn statements from cemetery workers who'd dug up bodies on SCI's orders. But the company said the remains were just animal bones – deer, alligators, wild boars. They blamed any 'overbooking' of graves on the small, independent firm they'd squeezed out when they took over the cemeteries seven years before. They were going to stonewall it, fight it out. They could afford to: SCI had deep pockets – and the very highest political connections in the land.

Just a few weeks before, SCI had settled a potentially explosive lawsuit that could have meant major trouble for the company and its co-defendant – a certain George W Bush. That case began in 1998, with the Texas State Funeral Commission investigating 'shortcuts' used by the company to maximise their profits. Grieving families had reported noxious fluids leaking from their loved ones' crypts; word was that SCI was using unlicensed embalmers to churn out corpses on the cheap.

But the company had the perfect krysha. SCI chairperson Bob Waltrip had long been a major cash conduit for the George Bushes, father and son. So he just called on his old friend, Lil' Dubya – then the governor of Texas. Bush commiserated with his financial patron: 'Bobby, are those people still messing with you?' He turned the case over to his chief of staff, Joe Allbaugh.

Over the next several weeks, Allbaugh and other senior Bush aides leaned on Funeral Commission chairperson Eliza May to end the probe. She persisted,

and the commission eventually fined SCI \$450,000 for its desecrations. The company refused to pay – and May was fired a few months later, after she began looking into SCI's campaign contributions to state officials.

She filed a 'whistleblower' suit against the company and its official protectors. Bush gave a sworn statement that he'd never discussed the case with Waltrip, despite eyewitness testimony that he had – from SCI's own lawyer. A long war of legal attrition ensued, with SCI and the state of Texas lining up against May.

Finally, in the shadow of Bush's burgeoning imperial power, she accepted an out-of-court settlement for \$210,000. The president paid nothing, of course. Texas taxpayers took the brunt of the costs, while SCI chipped in \$55,000 – chump change for the self-proclaimed 'global leader in the death-care industry,' filling its Houston coffers with \$2.5 billion a year from funeral homes and crematoria on five continents.

So that's SCI: hard-wired, with hard cash, into the Washington power grid. They certainly wouldn't let a few dead Jews and their misplaced bones derail the 'death care' gravy train.

The weekend before Christmas, Hartmann was summoned to a meeting with Houston honchos, who'd flown in for an emergency strategy session on the Florida case. We don't know what was said at that meeting, what facts were revealed, or left unspoken. We don't know what Hartmann was told to do, or not to do. We don't know what he agreed to do, or refused to do. We don't know if he indeed 'tried to do the right thing,' whatever that might have been. We just know that three days later, on the night after Christmas, the deputies found him dead, in a company car, in the garage on Sugar Pine Drive.

Just another 'customer' now.

This article first appeared in Chris Floyd's column for the St Petersburg Times.

BLOODY HELL!



DRACULA LIVES ON. **PIERS MOORE EDE** SHEDS LIGHT ON THE COUNT'S LATEST VICTIMS.



AP PHOTOS

Come in. Welcome to Dracula Park. Bite to eat? We have blood pudding, dish of brains and fright-jellied meat. Ha, ha, ha.

Actually, far from being a tasteless joke, this is exactly what the Romanian government does have in mind – a \$30m project covering an area of 120 hectares, and boasting restaurants, a golf course, camping sites, a 700-bed hotel, souvenir shops, boating lakes, disco-clubs, beer-halls, and a ball room for 2,000 dancers. Oh, and 30,000 visitors a day.

Trouble is, the proposed site near the beautiful medieval town of Sighisoara is covered by 120 acres of UNESCO-protected forest. Or rather, trouble was. Only a matter of days after the ministry had announced the proposed park last July, the mayor of Sighisoara 'transferred' the 121 hectares of the UNESCO protected forest to the 'Fund for Touristic Development'. Tragically, by the time you read this, these historic trees may already have been felled.

Resistance has been widespread. Critics question not only the source of the funding but also whether a Dracula park is itself a sustainable contribution to Romania's development. And though the minister of tourism Dan Matei Agathon insists the park will generate 3,000 jobs, a local study concluded that the project would create 300 permanent jobs at best.

The most vociferous objections, however, centre on the location. Sighisoara lies over five hours from the nearest international airport, whereas suggested alternatives, such as Brasov, already have the necessary infrastructure for mass tourism. Building the Dracula Park in Sighisoara would entail new motorways and even more funds to pay for them. Likewise, Agathon's predicted park profits are deeply flawed. His \$12m annual forecast rests on the assumption that 75 per cent of the visitors will be local people. However, in a region where the average monthly income is only \$100, few are likely to pay \$25 per visit, let alone visit it the predicted three times per year.

Cross purposes

After several months fundraising across Europe and the US, during which many big name companies were mentioned as 'potential' investors (Coca-Cola was one), Agathon had failed to clinch a major deal. Therefore on 8 November 2001, he 'opened' the \$30 million project to the public.

TVR1, the country's state-owned television station, began blanket advertising, promising the chance to become a 'Dracula billionaire'. Banks and post offices were filled with colourful posters to attract public money. Instead of their customary Christmas bonus, state workers were presented with a share package in the theme park. It was implied that investors would themselves be the recipients of the jobs. But if the Dracula Park is made a local interest, it will also impede attempts to integrate the sizeable gypsy population, who will be pushed out as

undesirables and hindrances to tourism. The plan will run a stake through the wallets of his country's people.

Nor is it just Agathon's posters that are 'colourful'. His first move on commencing the project was to enlist the help of his family by appointing his cousin's son, Marius Stoian, as the Romanian coordinator of the scheme. Stoian's mother, coincidentally, also runs ANTREC, the main company in charge of rural tourism in Romania. ANTREC has recently been the sole beneficiary of several EU grants to promote rural development in Eastern Europe. As one tour operator points out: 'This matter is not about developing tourism, but about who develops tourism for their own benefit.'

Then in January a series of anonymous emails signed 'Armageddon' were made public, claiming widespread corruption amongst the PSD government of President Ion Iliescu and Prime Minister Adrian Nastase. As a result the government has embarked on a veritable witch hunt and the press continues to publish information from the leaked documents. Guess whose name has appeared in some of the emails? Agathon. Amongst other things he is reputed to have business connections with Paralela 45, a major Romanian tourist company. Yet Constitutional law prohibits government officials from having any shareholding position in a national corporation.

Dig deeper

Last autumn, The Mihai Eminescu Trust, on behalf of major Transylvanian NGOs, expressed profound concern over rumours that approval had been given to the siting of a theme park 1km away from Sighisoara, stating: 'It is as if the French allowed Disneyland to be built at Versailles or the Italians at Venice.'

In response, Agathon appeared on television with Dan Petre Popa, the self-proclaimed head of 'Greenpeace Romania', which, despite the absence of any Environmental Impact Assessment, had offered its full support for the Park. However, Greenpeace International claims no affiliation with this group and is filing legal action to this effect. An email from Popa to Greenpeace Austria speaks for itself: 'You are our guest in Romania, where we can specify our terms and where we can estimate the present situation. We don't want that our step be politicised.'

The sun is setting. UNESCO has pledged to send out an inspection team in March, but by that time it may be too late for Sighisoara. The country's enduring myth may be about to become a desperate reality.

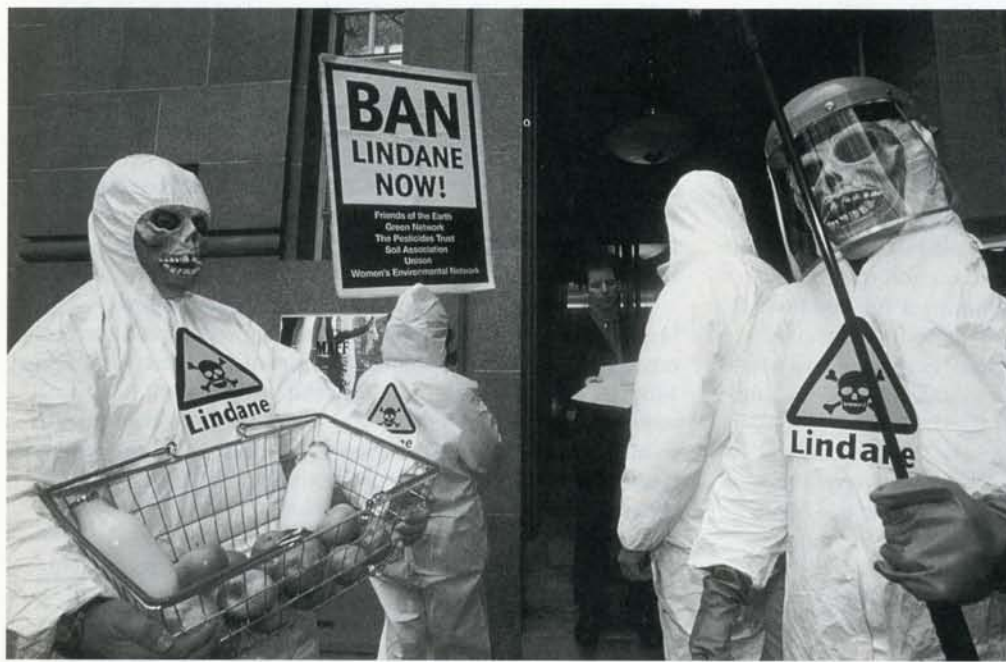
Readers should voice their concerns to:

1. Baroness Nicholson of Winterbourne, EU Rapporteur for Romania, Member of the European Parliament, Rue Uuiert 3, ASP.10, Room 9209, B-1047 Brussels; email: enicholson@europarl.eu.int
 2. Dracula Project coordinator: Andreas Kornprobst, c/o Explore GmbH, Neubaugasse 31/22, A-1070 Vienna; email: a.kornprobst@exploreum.at
 3. Francesco Bandarin, Director, World Heritage Centre, UNESCO, 7 Place de Fonenoy, 75352 Paris 07SP; email: f.bandarin@unesco.org
- Please copy your letters to: Alexander Gota, c/o Sustainable Sighisoara, G Lazar 10, 3050 - Sighisoara, Romania; Fax: +40 (0)65771454; email: sadjoy@sighisoara.com

Piers Moore Ede is a freelance journalist.

DYING FOR A BIT OF CHOCOLATE

DAVID BUFFIN, STEPHANIE WILLIAMSON AND BARBARA DINHAM EXPLAIN THE TRUE COSTS OF THE WORLD'S LOVE AFFAIR WITH CHOCOLATE.



government, the World Bank and other donors promoting cocoa cultivation.¹

In addition to its use on cocoa, farmers often use readily available pesticides, including lindane, on vegetables and other food crops. Technically this practice is illegal – pesticides should only be used on crops for which they are approved – but farmers are not aware of the technicalities. However the government, NGO and private sector have highlighted this as a critical problem in Ghana.

Chocolate drop

The price of cocoa on the world market plummeted throughout the 1990s. Hit by low prices, farmers simply could not afford to buy pesticides resulting in an accumulation of unused lindane

'Divine, sensuous, indulgent, better than sex...' these are the sorts of words we have come to associate with our massive consumption of chocolate. Words like sexual abnormalities, aplastic anaemia, endocrine disrupting or just plain cancer simply don't evoke the same emotions. However, due to the continued use of the pesticide lindane in the production of cocoa, these are the very risks facing consumers and particularly producers of one of the world's most lucrative crops (for the confectionery industry and food multiples).

In Ghana, where cocoa is the main export crop, over six million people, mainly smallholder farmers, earn their livelihoods from its production. For years, these smallholders and large-scale plantations alike have relied on chemical control for insect pests and fungal diseases in cocoa. Mirid bugs, for example, are a major headache for Ghanaian cocoa growers – they can cause a loss of over 25 per cent of the country's national production – more than 100,000 tonnes.

Unable to afford losses on this scale, the Ghana Cocoa Board (Cocobod) has advised farmers to apply insecticides four times a year to prevent the damage. Lindane, and another pesticide, propoxur, are the most commonly used chemicals. Propoxur is classified by the WHO as 'moderately hazardous' – a class that the UN Food and Agriculture Organisation suggests should be avoided if possible in developing countries – and is a carbamate pesticide, which means that it attacks pests through the nervous system, and will also affect the human body's nervous system.

Although the pesticide's active ingredients are imported, Ghana established a plant to formulate lindane in the 1950s, at that time owned by the British agrochemical company ICI. The Chemico plant formulates lindane into the product Gammalin, and its production levels depend on orders from

and other cocoa pesticides. Nonetheless, Cocobod continued to order supplies according to their recommended application schedule. As a result over 1 million litres of Gammalin were estimated to be in store in July 2001.²

The situation is exacerbated by recent changes in the European Commission covering the Maximum Residue Limits (MRLs) on lindane – and other pesticides not approved for use in Europe (see box page 49). Effectively, no residues will be allowed. Therefore Chemico has stopped formulating Gammalin and Cocobod will not permit any further lindane application on cocoa from January 2002.

There is, however, an accumulation of lindane stocks in the country. The Environment Ministry tried to persuade Cocobod to dispose of these according to FAO guidelines. But Cocobod argued that Ghana could not afford to pay the disposal costs of \$4,000 per tonne and that the best option was to use the stocks by December 2001 via a mass spraying campaign conducted by the government. Rather than make these available through the market, and to avoid diversion to food crop use, the government has trained and equipped 25,000 rural workers as spray teams under Ministry of Food and Agriculture (MoFA) supervision. The teams have been spraying cocoa farmers' trees free of charge with insecticides for mirid control and fungicides against black pod disease, as part of a £6 million plan by the government to boost cocoa productivity.³

Several organisations are concerned about the spraying campaign, including PAN UK's partner, the Ghana Organic Agriculture Network (GOAN), whose cocoa-growing members have come under heavy pressure to accept the spray teams on their land – an action which would wipe out their hard work in producing cocoa without insecticides.⁴ The General

Why worry about lindane?

Agricultural Workers' Union (GAWU) recognises that, compared to the intensive, plantation-style cocoa system in neighbouring Cote d'Ivoire, Ghanaian smallholders use far fewer pesticides, but their limited use still poses high risks since farmers rarely practice safe use. Cocoa farmers often store pesticides under their bed for safekeeping, for example, and the union is aware of cases of obsolete cocoa pesticides being used for domestic purposes, such as head-lice treatment.⁵ Both GOAN and GAWU are worried about the health implications of the spray campaign for workers and farmers. The national press has also reported numerous problems associated with the campaign.⁶

Where next?

Next season, farmers will need to find new solutions for mirid bug control, but the main advice is still based on chemical pesticides. Ghana's Environmental Protection Agency has approved the use of imidacloprid and a pirimiphos-methyl/pyrethroid mix for 2002.⁷ Imidacloprid is also classified by WHO as moderately hazardous, and pirimiphos-methyl, while classified as only slightly hazardous, is an organophosphate pesticide, which can affect the nervous system.⁸ Added to this, these chemicals are more expensive, and many farmers will not be able to afford to use them, particularly in the current climate of low cocoa prices.⁹

Farmers need access to both safer and more affordable pest control strategies. The Cocoa Research Institute of Ghana (CRIG) has been researching biological, cultural, botanical and genetic alternatives for some years. Biological control does not yet look promising, and research into breeding resistant cocoa varieties may take years to bear useful results. More promising are the neem seed trials that CRIG has been running since 1999.¹⁰ The main constraints to neem use are supply and farmer awareness. Commercial neem oil products are available in Ghana but are expensive, and CRIG and GOAN believe that training is needed to encourage farmers to produce their own neem seed extract.

Sustainable alternatives will be a major benefit to the health and environment of farming communities in Ghana, but these solutions will require funds and planning to identify and implement. Unless substantial investment is made in farmer training and appropriate research and marketing support, farmers throughout West Africa will find it increasingly difficult to produce cocoa to European requirements. The time

Food – lindane residues ubiquitous

Lindane is fat-soluble and can accumulate through food chains. It is found widely in chocolate products, and has contaminated cereal grains, fish, meat, mushrooms, winter lettuce, butter, cheese, bread and milk.¹⁸ In 1996, lindane was found above legally permitted levels in milk and cheese, with nine out of 216 samples found to contain the maximum residue limit of 0.006 mg/kg.¹⁹ Government officials were at a loss to explain the cause. The residues were among the highest ever recorded in UK dairy produce. The Acceptable Daily Intake (ADI) for lindane determined by the international authority on food residues, Codex Alimentarius, is 0.001 mg/kg of body weight. For a 60kg adult, therefore, the maximum daily dose should not exceed 0.06 mg in total. The ADI was changed in 1997 from a previously less stringent figure of 0.008 mg/kg.

Data published by Codex Alimentarius shows that a person consuming an average local diet in any region of the world will exceed the ADI for lindane by between 3.8 and 12 times. The highest consumption of lindane in food occurs in Europe where a theoretical maximum daily intake of lindane in a typical European diet would reach 0.742mg, or 1237 per cent of the ADI.²⁰

An acute poison

Lindane is classified by the WHO as 'moderately hazardous'. Acute exposure to lindane mainly affects the central nervous system, with symptoms including vomiting and diarrhoea followed by convulsions. Exposures to small amounts by skin contamination or ingestion have led to headaches, nausea, dizziness, tremors and muscular weakness. Several cases of human poisoning by lindane have been reported. Children are significantly more susceptible to the toxic effects of lindane. In one case, a dose equivalent to 62.5 mg/kg proved fatal. In adults, doses above 300mg/kg ingested orally have proved fatal.²¹

Cancer

A US report cited one study that found significantly higher luteinizing hormone levels and slightly lower testosterone levels in male workers exposed to lindane in a manufacturing plant. In another study, women exposed to lindane during pregnancy had babies with

significantly reduced birth weights and lengths. An increased risk of non-Hodgkin's lymphoma was reported in a case-control study of farmers in Iowa and Minnesota who reported using lindane on crops and animals.²²

Endocrine disruption

The UK Advisory Committee on Pesticides has conceded that lindane can inhibit the formation of progesterone in studies on mice and increase the metabolism of testosterone in male rats.²³

Aplastic anaemia

In 1993 researchers in Florida, US, analysed 280 cases of aplastic anaemia and confirmed a link with pesticide exposure. The majority of these cases involved young men with a history of occupational exposure to pesticides, including lindane.²⁴

CHARGE

CHARGE, a condition that involves multiple congenital abnormalities, has been linked to exposure of women to lindane during early pregnancy. A statistically significant proportion of mothers of CHARGE children in the UK were found to have been exposed to pesticides in early pregnancy, of which lindane was one of the most prominent.²⁵

Fate in the environment

Lindane is highly volatile and application in a warmer climate such as Mexico may result in long-range airborne transport and deposition into a colder region such as Canada. During winter months, long-range transport of lindane is a dominant source of HCH isomers in Canada's Arctic (lindane is the synonym for the 99 per cent gamma isomer of HCH). HCH isomers have been found in marine mammals from this region including ringed seal, harp seal, beluga whale, narwhal and walrus at concentrations ranging from 62 to 515 parts per billion.²⁶

European countries are concerned that lindane in the atmosphere is later deposited by rain. In 1996, Danish researchers called for national monitoring of lindane after traces of the banned chemical were found in remote locations of the country. The Danish Office for the Environment established that the most likely source of the contamination was lindane use on fodder root crops and sugar beet in Germany.²⁷

scale and residue limits should not be dictated by European requirements, and forced on producer countries without shouldering responsibility for solutions. The chemicals used on cocoa were promoted by European companies and advice systems. The Ghanaian government and cocoa industry have spent considerable sums on improving production and they stress that if Europeans demand zero lindane residues, then they should contribute to the necessary changes in pest management strategies. ■

✎ Likewise, consumers need to be more aware of the knock-on effects of food-safety measures throughout the food chain, and be prepared to pay the cost. It is of some hope, therefore, that many consumers have demonstrated their willingness to buy organic and fair-traded chocolate at higher prices.

But in the end the responsibility must lie with the people making the big money out of cocoa – the chocolate manufacturers and retail conglomerates. Instead of demanding that cocoa-producing countries comply with lindane residue regulations – as European manufacturer Cacaobisco ordered Cocobod to do by letter in 2001¹¹ – the chocolate industry and the supermarkets that control retailing must invest some of their massive profits in implementing sustainable production methods.

Although small-scale cocoa production in West Africa is important for biodiversity and forest conservation, as the situation in Ghana shows, the producers need a fair price for their cocoa, and better guidance on pest management to make a break from the chemical treadmill. Smallholders are facing competition from large cocoa estates in Malaysia, for example, which require regular applications of pesticides, but are better placed to control residue limits. While this may meet European import standards, the pesticide sprayers employed on cocoa estates rarely receive safety training or protective clothing. On larger estates, such as those in Malaysia, workers can spend nine months of the year on spray activities. Chemicals drip on the skin, are inhaled and accidentally swallowed.

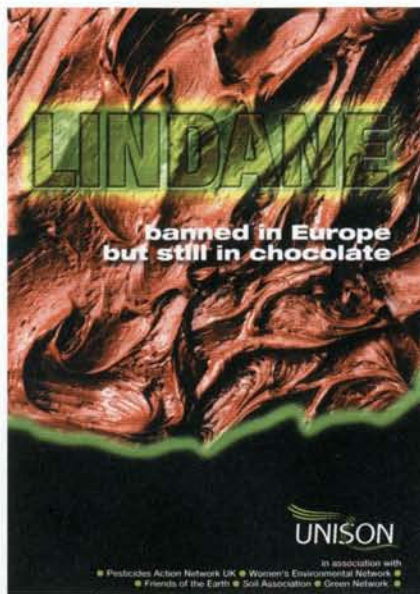
The Lindane Campaign is urging retailers and chocolate manufacturers to phase out the use of lindane, and to adopt responsibility through the supply chain for implementing safer and more sustainable cocoa production – at both smallholder and plantation levels. The Co-op has taken a lead by announcing earlier in the year that it will ‘ban’ lindane and 23 other hazardous pesticides.

Pesticide regulation needs to support better strategies for pest management. In Sweden, the government has successfully adopted a system based on comparative assessments, where regulators register the least toxic pest management, and brought about major reductions in both the quantity and risk of the pesticides used in the country.¹² Under comparative assessments, regulators can recommend biological and cultural techniques, and in doing so encourage a shift towards non-chemical pest management.

Food companies, retailers, regulators and consumers need to take responsibility for the impacts of production throughout the food chain. The costs of adopting more sustainable agricultural systems cannot be pushed down the chain onto those least able to bear them. If globalisation is to have any benefits, joint responsibility for production could be one – and it is important that whatever replaces pollutants like lindane, this must be the least toxic option.

Lindane campaign wins ban in UK and Europe

On 2 September 1998, 24 non-governmental organisations participating in PAN Europe, and representing environment, consumers and trade unions, signed a declaration calling for a ban on the production and use of lindane.¹³ Three months



later, the Austrian authorities produced a detailed monograph covering the health and environmental effects of lindane on behalf of the European Union. PAN UK gained access to this confidential report and publicised its recommendation that, in the absence of adequate data, lindane should be immediately removed from the market.

The EU circulated the Austrian report to relevant national ministers for comment. On 13 July 2000, the EU Standing Committee on Plant Health opted for a ban on lindane, with the voting support of the UK and other member states. The European Commission ratified the decision in December 2000, allowing a phase-out period for agricultural use to the end of 2001.

UK interest in lindane was kindled by a Channel Four *Dispatches* documentary in

1994 which suggested a link between exposure and breast cancer.¹⁴ Its presence in human milk has been reported around the world¹⁵ and residues are found in human body fat. The UK has one of the highest rates of cancer from breast cancer in the world, and in Lincolnshire, where lindane has been used extensively on sugar beet, the incidence of breast cancer is 40 per cent higher than the national average.¹⁶ There are concerns that rising breast cancer rates in Hawaii may be attributable to intensive pesticide use, including lindane.¹⁷

The UK Lindane Campaign Group – representing PAN UK, UNISON (the public service union), Friends of the Earth, the Women's Environmental Network, the Soil Association, Green Network and Breast UK – pressed the UK government to introduce a complete ban, organising a ‘Spot Lindane’ exercise in 1999. About 50,000 kg of lindane was then used in UK horticulture and agriculture, but the extent of its home and garden use was unknown. The campaign underlined the ease with which consumers could get hold of this dangerous product. Consumers were encouraged to report on lindane sales at their local DIY store, garden centres and other multiples, and their efforts revealed its easy availability.

The Lindane Campaign Group lobbied the UK Advisory Committee on Pesticides, which recommends to ministers whether pesticides should be banned. The committee repeatedly examined lindane and restricted its use, but avoided outright prohibition, until the EU decision to ban lindane intervened.

Lindane production has dropped, but it is still used in many countries, including the US, Mexico, and parts of Latin America, Africa and Asia. Romania is still a producer and exporter, and without a global ban on production and use, production will continue. In May 2001, over 100 countries signed an international Convention on Persistent Organic Pollutants (POPs) which aimed to eliminate the production and use of nine persistent organochlorine pesticides similar to lindane: most of the pesticides were made subject to an immediate ban – exceptions were made for DDT to continue as a public health measure to control mosquito vectors of malaria. Lindane has been recognised as a candidate POP, but was not included in the negotiations.

David Buffin, Stephanie Williamson and Barbara Dinham are members of the Pesticide Action Network UK – www.panuk.org
References on page 66.

FIXING ON THE FARM

THE BIOTECH INDUSTRY AND ITS SUPPORTERS ARE USING THE GOVERNMENT'S GM FARM-SCALE EVALUATION TO PERPETRATE A SCIENTIFIC FRAUD, ARGUE JONATHAN MATTHEWS AND STEPHANIE ROTH.

Up in the remote Scottish Highlands, a group of anti-GM protesters decided last August that rather than pulling up the crop, they would place it under the closest observation. Five months on, having successfully braved a Highland December while fighting off efforts to have them removed, those manning the Munloch vigil say that what they have been monitoring has proved more than interesting.

Visitors have been surprised to be shown how differently the GM winter oilseed rape is performing compared to the non-GM plants in the parallel part of the trial. While the conventional crop is thriving, as Green MSP Robin Harper told *Highland News*, 'it looked like the GM crop has grown about as high as a primrose'.

Aventis, the company whose seed is at the centre of the trial, dismisses claims that the stunted-looking plants are the product of genetic instability, arguing the difference is explained by the use of different varieties of oilseed rape. But Harper and the 'vigilantes' point out that, even if this were the case, such a failure to compare like with like would add up to a farm-scale farce.

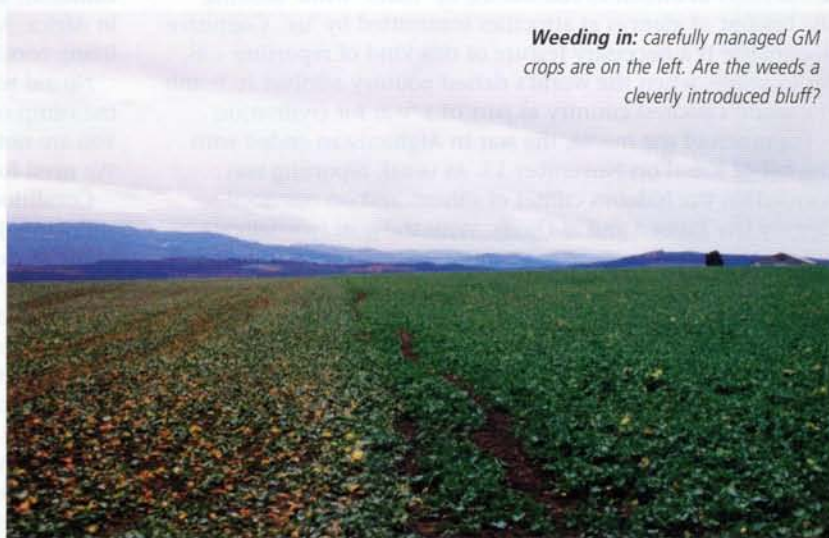
With the GM plants at Munloch only a quarter the size of the control crop, 'the latter has substantial leafage and a close canopy, thus restricting the amount of light available for weeds to grow,' explain vigil stalwarts Anthony Jackson and Nigel Mullan. This would make the slower-growing GM variety look better in terms of biodiversity but for reasons that have absolutely nothing to do with genetic modification. For Harper that confirms that the trials are an 'absolute nonsense and should be stopped'.

Some even suspect a still more disturbing explanation: that the GM seed may have been planted deliberately deeper, thus weakening crop vigour. Why? In order to encourage weeds.

This goes to the heart of the matter. Unless the trials provide no evidence that the growing of GM crops causes more damage to biodiversity than modern industrial farming (which has of course had a devastating impact on the environment!) commercial approval will be unsellable in a country where farmland and wildlife are so inseparable.

Thus, while herbicide-resistant GM crops have been hyped to North American farmers as a high-performing means of getting 'clean' weed-free fields, the covert goal of the UK trials has become the production of a bumper crop of British weeds! It's all becoming a case of bluff and double bluff.

The first clue as to what was afoot emerged back in 1998, when Monsanto began conducting press tours of GM crop trials run by scientists from the Institute of Arable Crops Research. The IACR scientists had allowed weeds to grow to an advanced stage amongst Monsanto's herbicide-resistant beet before being sprayed with Roundup. The herbicide, as intended, killed everything except the GM beet but the remaining hefty plant population rotted down to produce a deep mulch, which Monsanto claimed was supporting insect



Weeding in: carefully managed GM crops are on the left. Are the weeds a cleverly introduced bluff?

life that would in turn support other wildlife.

Large sections of the farming and general media were taken in: 'Genetically engineered crops can save farmers money, reduce chemical spraying and create a better habitat for birds and insects, scientists claimed yesterday', reported *The Times* under the title 'Modified crops help man and wildlife'.

When, nearly two years later, the relevant IACR study was finally published, it turned out that the delayed herbicide application produced heavy yield losses. In other words, letting the weeds grow late caused a yield penalty that farmers would be unlikely to accept. Despite this, late herbicide application, as pioneered at IACR, is exactly the kind of unrealistic approach which farmers currently involved in the farm scale evaluation are being advised to adopt.

The IACR researchers in question are among the senior scientists now overseeing the FSEs while the institute which allowed Monsanto to spin their industry-funded study two years ahead of publication is one of the principal scientific contractors carrying out the trials.

IACR has, needless to say, formed a string of partnerships with biotechnology companies. Indeed, attitudes at the institute are so corporate-friendly that one of the co-authors of a report to government on the trials' progress is among several IACR scientists who simultaneously work for CropGen, a biotech-industry financed pro-GM lobby.

Is it any wonder, then, that we're failing to get a realistic assessment of the risks of GM crops? Or that while 'independent' science is busy sacrificing the public good to private interests, it is down to the vigilant watchers at Munloch to bear witness out in the driving sleet and rain to what has all the appearances of a farm-scale fraud.

*Jonathan Matthews is co-founder of Norfolk Genetic Information Network (www.ngin.org.uk) which campaigns to draw attention to the abuse of science in support of genetic engineering. Stephi Roth is *The Ecologist's* news and campaigns editor.*

THIS KILLING SILENCE

WHY IS THE MAINSTREAM MEDIA IGNORING THE MASS DEATH OF AFGHAN CIVILIANS,
ASKS **DAVID EDWARDS**.

It is a long-standing tradition of 'free press' reporting to glare intensely at atrocities committed by 'them' while flashing the briefest of glances at atrocities committed by 'us'. Cognitive dissonance is a necessary feature of this kind of reporting – as, for example, when the world's richest country resolves to bomb the world's poorest country as part of a 'war for civilisation'.

For much of the media, the war in Afghanistan ended with the fall of Kabul on November 13. As usual, reporting was focused on the hideous crimes of others, and on our need to destroy the Taliban and al-Qaida. With the goal (partially) achieved, journalists declared another glorious humanitarian victory and moved on. Suddenly the war in Afghanistan was yesterday's news, although not for the civilians killed in the continuing bombardment. A different story – the price of our 'victory' for the people of Afghanistan – threatened to turn the spotlight on *our* crimes and so was ignored by our media, in accordance with the long-standing tradition. The sheer scale of what has been so casually passed over is extraordinary.

A careful reader of the press might discover that Afghan casualties of the bombing now exceed the loss of life on 11 September. But this 'collateral damage' represents a small fraction of the total horror inflicted on Afghanistan. On 16 September, the press reported that the US government had demanded that Pakistan stop the truck convoys of food on which much of the already starving Afghan population depended. In late September, the UN Food and Agricultural Organisation warned that more than 7 million people were facing a crisis that could lead to widespread starvation if military action were initiated, with a likely 'humanitarian catastrophe' unless aid were immediately resumed and the threat of military action terminated. Dominic Nutt of Christian Aid warned: 'It's as if a mass grave has been dug behind millions of people. We can drag them back from it or push them in. We could be looking at millions of deaths.'¹

It is interesting to imagine a coalition launching an attack to root out terrorism in, say, France on the understanding that some 7 million French civilians might lose their lives as a result. Remarkably, though the media communicated these aid agency warnings of impending mass death, and the need to pause bombing before the snows came, the story then simply disappeared.

How many *did* die when the snows came? How many of the 7 million *were* 'pushed' into the mass grave? Certainly our government – the 'moral crusaders' of Kosovo – showed no interest in raising such questions, for obvious reasons. Likewise, the fate of millions of innocents imperilled by state policy has been a matter of supreme indifference to our media. We can gain a sense of the moral health of our democracy from the minimal coverage that has emerged.

On 3 January, in a small article on page 14, *The Guardian* reported conditions facing 350,000 Afghan refugees in the Maslakh camp, 30 miles west of Herat city. Doug McKinlay described how 100 refugees were dying every day of exposure and starvation (a disaster on the scale of 11 September every month). The small size of the graves in the graveyards on the edge of the camp was 'clear evidence that most of the buried are children', McKinlay noted.²

Ian Lethbridge, executive director of the charity Feed the Children, said: 'I always judge everything by what I have seen in Africa. And this is on the scale of Africa. I was shocked at the living conditions of the new arrivals.'³

No aid was reaching these 350,000 people. One woman at the camp confronted McKinlay: 'You are just taking pictures. You are not here to help. We can't eat pictures. We are dying. We need food and medicine.'

Conditions outside the Maslakh camp were more horrific still. On 4 January, Christian Aid reported: 'Refugees arriving at Maslakh camp near Herat have described the 'calamity conditions' their families are now living in. Heavy snowfall is making it difficult to transport humanitarian supplies to the most vulnerable areas of the mountainous Ghor province of Afghanistan...'⁴

Hayat Fazil of Christian Aid's partner organisation NPO/RRAA (Norwegian Project Office/Rural Rehabilitation Association for Afghanistan) 'warned that rural villages are being neglected while refugee camps like Maslakh get the lion's share of aid.'

About these catastrophes the major broadcast media, ITN and BBC TV news, have had nothing to say so far this year. To my knowledge, the BBC's sole reference to the plight of Afghan refugees consists of a documentary filmed in November on the 5,000-plus refugees in Makaki camp⁵. Conditions in Makaki, though appalling, did not approach the horror of Maslakh and elsewhere. In the BBC's film, Dr Pauline Horrill of MSF reported three child deaths in Makaki over a five-day period.

The BBC's main rival has gone some way to reporting the misery in Afghanistan. On 9, 13, 22 and 26 January, ITN reported the story of Marjan the one-eyed lion in Kabul zoo. Marjan's 'battered image touched people around the world,' we were told on the 9th, 'his plight a symbol of maltreatment under the Taliban'. As a result, a team of vets had flown out to deliver 'much-needed help... treatment and food'⁶. The closing clip featured a happy Marjan chewing on a large piece of meat.

We could discover what was being eaten elsewhere in Afghanistan on that day in one of *The Guardian's* rare reports:

'The village of Bonavash is slowly starving', Ravi Nessman wrote. 'Besieged by the Taliban and crushed by years of drought, people in this remote mountain settlement have resorted to eating bread made from grass and traces of barley flour. Babies whose mother's milk has dried up are fed grass porridge. The toothless elderly crush grass into a near powder. Many have died. More are sick. Nearly everyone has diarrhoea or a hacking cough. When the children's pain becomes unbearable, their mothers tie rags around their stomachs to try to alleviate the pressure.'

'We are waiting to die. If food does not come, if the situation does not change, we will eat it [grass] ... until we die,' said Ghalam Raza, 42, a man with a hacking cough, pain in his stomach and bleeding bowels.⁷

Nessman related the story of Khadabaksh, a former farm labourer, who looked in despair at his four young daughters: 'Three weeks ago, his children had a mother and a baby sister. Both have died. Khadabaksh begs his neighbours for pinches of their small amount of home-grown barley so his family can



AP PHOTOS

Turf war: Afghan men hold up bread made of grass that they are forced to eat, in the town of Zari, the nearest outpost accessible by road in the mountainous region of northern Afghanistan.

make grass bread... "It is better to die in our house," he said, "not in some strange place with strange people."

About this, both ITN and BBC TV news have again had nothing at all to say so far this year and through the second half of December.

By contrast, readers will doubtless recall the TV images of thousands of refugees fleeing the fighting and bombing in Kosovo in 1999. ITN and the BBC repeatedly showed dramatic footage of whole hillsides covered in desperate refugees – with daily on the spot reports, interviews and investigation, detailed and emotive coverage of the human suffering was given.

Similarly, while we might consider *The Guardian* reports a sign of the paper's openness and independence, a comparison with reporting on other issues in 1999 tells a very different story. Since 11 September, *The Guardian* and *The Observer* have mentioned the catastrophe afflicting the 350,000 refugees at Maslakh five times – an average of once per month. By contrast, as of 27 January, the same papers had mentioned the story of prisoners held at a US camp at Guantanamo Bay 72 times that month – a suitably safe and trivial issue, compared to our responsibility for the mass death of Afghan refugees.

Also by contrast, between April and June 1999, *The Guardian* mentioned the plight of 65,000 Kosovan refugees stranded at Brace on Macedonia's border with Kosovo 48 times – an average of once every two days. The scale and intensity of the suffering then is dwarfed by that of Afghanistan now.

The vital difference is the direction in which the finger of blame can be pointed. Although much of the Kosovan human flood was in response to NATO's air campaign – independent monitors, and even the US State Department, reported that the mass exodus and increased atrocities began *after* the onset of bombing – the media chose to accept British and US claims that Serbian 'genocide' was to blame. As a result, during the Kosovo crisis, the plight of refugees was used as powerful propaganda justifying NATO's assault – politicians repeatedly drew attention to the suffering caused by the Serbs, describing 'the kind of ethnic cleansing we thought had disappeared after the Second World War', as NATO Secretary General, George Robertson, described it. The media were happy to do likewise. In Afghanistan, by contrast, it is clear that the 'war against terrorism' bears considerable responsibility for the calamity, for the disruption of food supplies, and for the mass suffering and death both inside and outside the Afghan camps. In a report in the *Sunday Telegraph*, Christina Lamb wrote of refugees in Maslakh: 'Most come from the northern provinces of Faryab,

Ghor and Sar-e-Pul as well as Ghazni in central Afghanistan, mountainous places to which the World Food Programme was giving food aid but stopped because of the bombing. Now their villages cannot be reached because the passes are cut off.'⁹

In the latest mention in *The Observer*, Suzanne Goldenberg writes that Maslakh was already in crisis last summer, but 'its population swelled after 11 September when international aid workers were evacuated from Afghanistan'.¹⁰

This is deeply embarrassing for the US and British governments, for the 'war for civilisation', and for the establishment media supporting them.

Politicians have not repeatedly drawn attention to the plight of refugees and, again, the media have been happy to follow their lead.

This standard pattern of obedience was repeated with even more dramatic clarity over East Timor.

Massacres that happened before, during and after NATO's 'moral crusade' in Kosovo were all but ignored by the press prior to the 30 August referendum. The subsequent hypocrisy of the West's moral crusaders in failing to respond, or even speak out, as atrocities committed by our Indonesian trading partners continued, also went unnoticed. Another example is the media's respectful silence over the mass death of Iraqi civilians, despite the resignation of high-level UN diplomats in 1998 and 2000 describing Western sanctions policy as 'genocidal'. New Labour's performance on this issue was not considered worth discussing by the media during last year's general election, for example.

The profound moral sickness afflicting our society is also revealed by the contrast between the passionate intensity and extent of coverage afforded US victims of 11 September compared to Afghan victims between 7 October and the present. In early January, US writer Ed Herman estimated that media coverage afforded to the death of Nathan Chapman, the sole US combat casualty, had exceeded coverage afforded to *all* Afghan victims of bombing and starvation. Noam Chomsky reports one reference to the Maslakh camp in the entire coverage of the US media. CNN Chair Walter Isaacson is reported to have declared that it 'seems perverse to focus too much on the casualties or hardship in Afghanistan'.¹¹

It is an understandable aversion, given that Afghans may well be losing their lives for no good reason at all. Professor Victor Bulmer-Thomas of the Royal Institute of International Affairs argues that increased security, measures against money laundering, and an increase in intelligence sharing around the world *are* degrading global terrorism. He also supports an approach that addresses the causes of disaffection in the Middle East, Saudi Arabia and Iraq. But the bombing, Bulmer-Thomas argues, 'has unfortunately given ammunition to many countries around the world, which is exacerbating the problem'. His conclusion is a sombre one for the grieving masses of Afghanistan: 'If anyone thinks that this temporary degradation of al-Qaida's capabilities through the elimination of terrorist training camps in Afghanistan somehow or other will reduce the risks of terrorist attacks in the future, I'm afraid they're wrong. Because terrorist training camps don't have to be in Afghanistan, they can be anywhere. And indeed the temptation now for al-Qaida will be to site the training of its operatives in Western Europe, Canada and even in the US.'¹²

David Edwards is co-editor of *Media Lens*, which provides regular Media Alerts at www.medialens.org

Reviews

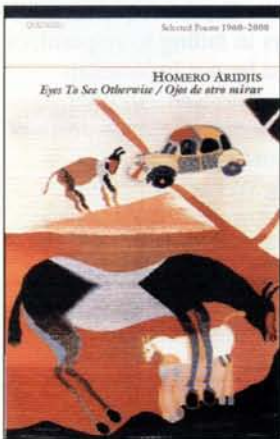
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This month: **Human Ecology** Gerald G Marten • **Eyes to see otherwise** Homero Aridjis • **Discounted Casualties** Akira Tashiro • **10 Reasons to Abolish the IMF & World Bank** Kevin Danaher • **Protect or Plunder?** Vandana Shiva • **CARtoons** Andy Singer • **How 2 Take an Exam...** Bertell Ollman • **The Selling of Free Trade** John R MacArthur

EYES TO SEE OTHERWISE (OJOS DE OTRO MIRAR)

SELECTED POEMS 1960–2000

by Homero Aridjis; selected and edited
by Betty Ferber and George McWhirter
CARCANET PRESS 2001/£12.95
ISBN: 1857545435



'The task of poets, and of holy men,'
Homero Aridjis has said, 'is to tell this
planet's stories – and to articulate an

ecological cosmology that does not
separate nature from humanity.'

Perhaps no other living poet has better
fulfilled that task, and certainly none has
so transmuted their words into deeds.
Mexico's Aridjis is a prize-winning author
of 30 books of poetry and prose,
translated into a dozen languages. He is
also the leading environmental activist in
Latin America, founder and president of
the Grupo de los Cien (Group of 100) –
the man responsible for saving Mexico's
sea turtles, monarch butterflies, and
Lacandón rainforest from annihilation.

Now, for the first time, a collection of
Aridjis's stunning poetry ranging over
four decades is available in *Eyes To See
Otherwise*. His work appears both in
Spanish and in English translation by
such contemporaries as WS Merwin,
Lawrence Ferlinghetti, and Kenneth
Rexroth. As Ireland's Nobel Prize-winning
poet Seamus Heaney says, 'Homero
Aridjis's poems open a door into the
light'.

Some have compared Aridjis's verse to
that of the Aztec poets, whose brilliant

images often mirrored flowers, trees, and
brooks. There are also echoes of Mexico's
mystic Nahuatl songs and the present-
day initiation hymns of the Huichol
Indians. The earth provides the palette of
his poetic landscape:

*'I remember... inexpressibly
the old tongue that speaks
with beasts and trees'.*

Aridjis was born in 1940 in the central
highlands region of Michoacán, where
every afternoon he would walk to a hill
near his home. During the winters,
thousands of migrating monarch
butterflies would alight on the oyamel fir
trees. Later, during 15-years that he lived
abroad as a teacher and a Mexican
ambassador to two countries, Aridjis
would make an annual pilgrimage home
to that hillside. As the trees were cut for
firewood, the presence of the butterflies
diminished. One of the first crusades of
the Group of 100 resulted in the
establishment of five protected monarch
sanctuaries – but illegal logging has
continued. In this volume, Aridjis evokes
not only the beauty of the 'winged tiger'
of his youth, but of the

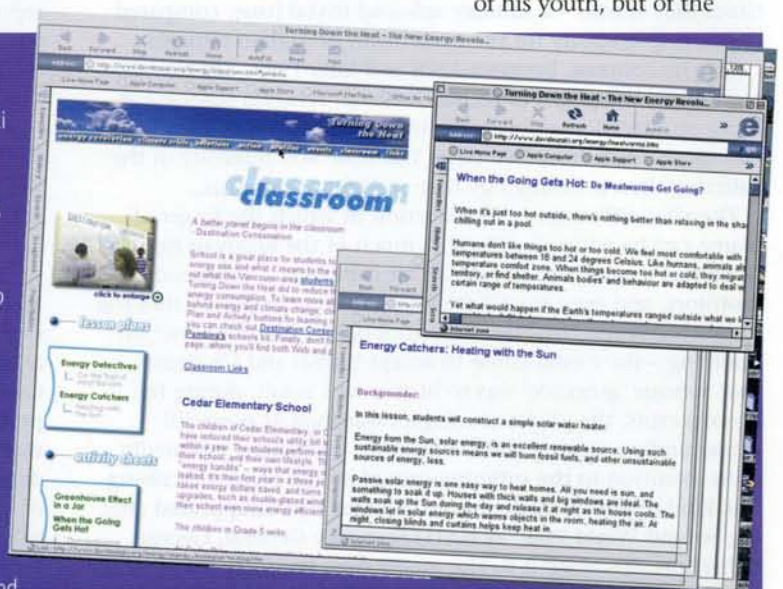
EcoKids

David Suzuki
is one of

North America's most
respected environmentalists (see *Profile*,
vol 31/7). As a one time guest on *Sesame Street* and

producer of numerous children's programmes focusing on
the environment, he also knows how to communicate difficult topics to
young audiences. To this end the 'classroom' pages on his 'Turn
down the Heat' website,
www.davidsuzuki.org/energy/classroom.htm, provide an excellent
introduction to the problems of global warming.

Children can read case studies describing how various classes
have made significant improvements in their own schools' energy
consumption levels. The children of Cedar Elementary School, for
example, have reduced their school's energy bill by 10 per cent in
less than a year, by implementing a series of simple steps such as
a Litterless Lunch Programme, writing on traditional blackboards and
ensuring that both sides of every sheet of paper are used.
The site also features lesson plans, including one that explains how
student can make a simple solar heater and another that tangibly



highlights the effects of greenhouse gases, while the links page
provides many further invaluable sites with information on climate
change and several other key issues.

coming of the chainsaw and man 'howling his needs and shoving fistfuls of butterflies into his mouth.'

He also pays tribute in two poems to the majestic grey whale. Not only was Aridjis instrumental in establishing a vast biosphere reserve in the Baja California peninsula, it was he who inspired a five-year-long and ultimately successful fight to protect this whale's last pristine birthing habitat at Laguna San Ignacio from a massive new industrial saltworks complex. In *The Eye of the Whale*, he evokes the lagoon as the place where 'God created the great whales and each creature that moves on the shadowy thighs of the waters.'

While the wonders of nature – and humankind's desecration of it – provide the book's central theme, *Eyes to See Otherwise* offers much more. There is a series of Self Portraits from his youth, and a long poem about his mother's death called 'The Amazement of Time'. He writes of his father and his daughters, of the Exodus story wrought in the time of the Spanish Inquisition, of Zapata and Montezuma. He describes in a powerful prose poem the wondrously terrible Aztec ceremonies of sacrifice: 'The wound is luminous, resplendent. Flames flare in his chest. His body, living red, is transparent, like a box of crystal lit from within.' Yet Aridjis also often evokes a lyrical eroticism, arising from the raw

material that is the earth: 'Love closes her eyes and the stars are lit like deer that know the direction of the wind... In her hands her trees her back I feel the light trembling on my shoulders.'

One of his inspirations is Dante, whom he sees as 'a moral poet who took an active role in his time.' Aridjis's wife Betty adds this caveat: 'I also think Homero would like to put certain people in various circles of hell.' In his bimonthly columns for Mexico's *Reforma* newspaper, Aridjis continues to expose schemes such as Mexico's current intent to develop the Baja region with a \$1.6 billion chain of marinas and tourist resorts that would threaten some of the world's most ecologically-significant wildlife reserves. Long a thorn in the side of the corrupt, Aridjis cannot even venture to certain parts of his country where 'the turtle poachers and illegal loggers recognise me; I am public enemy number one.' For a period in the late 1990s, after a series of death threats, his family had two government-appointed bodyguards. 'Always there has been, in these crusades, an element of danger,' Aridjis says matter-of-factly.

So it is not surprising that many of his strongest poems are apocalyptic in tone. 'The Prophecy of Man' envisions a future where 'clouds hung like grapeskins,' and

'trees shrivelled in the mountains,' and the sun is become 'a yolk thrown in the mud'. Another poem finds rivers 'reaching their mouth in lethal lakes/and the scarred sea that no longer loves them.'

'The Last Night of the World' is a fitful longing: 'In the shop windows of men, there were stuffed animals and plastic fruit, photographs of earth when it was still blue; of woods, long before their ruination.'

Yet, ultimately, Homero Aridjis stands before his creator with a warrior's commitment forged from a deep humility. His greatest satisfactions, he says, come in continuing private visitations with the monarchs, whales, and sea turtles: 'Perhaps you are alive because we did a little in your defence.' His life's philosophy echoes in a poem that ends: 'Being is the presence of light.'

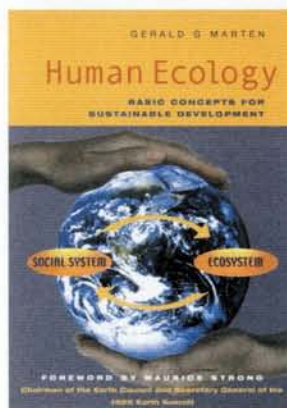
In his poem titled *Eyes to See Otherwise*, written in 1998, Aridjis writes of how: 'the eye is valued by the distance it covers outside it and the light it's capable of taking in.' With these words, a man who has been hailed as the conscience of Mexico encapsulates his own autobiography.

Dick Russell's third book, *Eye of the Whale*, was published in 2001 by Simon & Schuster.

HUMAN ECOLOGY

BASIC CONCEPTS FOR SUSTAINABLE DEVELOPMENT

by Gerald G Marten
EARTHSCAN 2001/£14.95
ISBN: 1 85383 714 8



As a publisher, Earthscan has led the way over the past decade in communicating principles of sustainable development. It is therefore fitting that they should

publish a nuts-and-bolts primer in human ecology – a discipline that the author, Gerald Marten, defines simply as being 'about relationships between people and their environment.'

The work opens with a rousing foreword by Maurice Strong, former Secretary General of the UN Conference on Environment and Development. 'While human ecology has proved its worth as an interdisciplinary approach for solving environmental problems,' says Strong, 'it has not yet attained a clear identity with an established body of theory. The time has come for human ecology to become a major scientific discipline in its own right.'

Marten proficiently lays out the groundwork for human ecology as a scientific discipline. His writing is well-pitched for a senior school, junior undergraduate or lay readership. Step by step, he provides a competent account of systems theory, human population dynamics, ecological metaphors of social systems, ecological succession, coevolution and ecosystem thermodynamics, culminating with the

factors that differentiate sustainable from unsustainable human development.

Overall, the book offers a systematic if sometimes rather basic grounding in what might be called the 'PRED' approach to human ecology – the notion that human ecology comprises the scientific study of Population, Resources, Environment and Development (or Technology, thus sometimes 'PRET').

This is helpful, as far as it goes. But this reviewer has problems with the limitations of such a paradigm. And this is not a criticism of Marten – it is a criticism of mainstream, dare I suggest, malestream academic mindsets who are perhaps more rooted in nature conservation backgrounds than in the less manageable realm of human development.

Allow me to illustrate with some examples. Marten's discussion about female infanticide in traditional societies presents as conventionally 'scientific'. It neutrally explains that 'girls have less social value than boys in many cultures' and that killing them obviously curbs reproductive capacity more effectively. ❖



LAMBS TO THE SLAUGHTER

EDUARDO GONÇALVES REVEALS THE FULL EXTENT OF THE UK NUCLEAR INDUSTRY'S EXPERIMENT ON ANIMALS.

than would male infanticide. But it completely fails to alert the reader to the gender constructions, indeed, the brutal sexism, that drives a process that is often more about perpetuating patriarchy's domination system than carrying capacity.

Similarly, it was disappointing to find organic farming defined as little more than 'harmony with nature' and 'providing food that is free of toxic chemicals'. The all-important benefits for quality of both soil structure and human culture go unsung. Equally disappointing is the reductionist simplification of world religions, for example: 'Judaism believed that God was not involved in the everyday details of what happened in the world.' Well, try reading the personified ecology of Job 36 or Psalms 104!

These are niggles, but they arguably highlight a more general problem with what we might call PREDA - the PRED Approach to human ecology.

PREDA presents a 'scientific' or rational discourse that falls short of being a holistic human ecology. It presumes that human ecology will come of age as it becomes recognised by the Powers that Be as a science, rather than seeing human ecology as a new epistemology - a new theory of knowledge - that is more than just science alone. As such, PREDA reinforces the enlightenment world-view that all we need to fix the world's problems is clear-headedness. It is Ecofix as only one step further on from Technofix - albeit an important step further on. However, it remains the kind of human ecology that leaves us, if we are not very careful, with the paradox of 'organic' food grown under supermarket conditions of industrial production.

Missing from PREDA is the engagement of Mythos and Eros as well as Logos in epistemology. As such, an approach like Marten's is a great starting point, but human ecology also needs to engage the feeling faculties of 'heart' and the sensual engagement of the 'hand' or body, as well as the thinking capacities of the 'head'. We need science, art and passion together!

This is why human ecology needs to be more than just Maurice Strong's 'major scientific discipline' (though thank you, Mr Strong, for helping put it on the map). This, indeed, is what differentiates human ecology from, say, 1970's human geography.

Science is vital. Without its Logos, for example, we'd never have known about the degradation of the ozone layer. But note, it was Mythos - poetic storytelling if you like - that usefully pictured this as

The nuclear industry may be infamous for its apparent disregard for human life, but its contempt for non-human species is an untold story. If you think animal experiments for cosmetic purposes are barbaric, then what has been done behind the closed doors of the nuclear citadel stretches the limits of credulity.

Almost every family member of the animal kingdom has passed through their secret laboratories' cages - rats and mice, sure, but also dogs, donkeys, sheep, horses, cows, goats, and the inevitable primates. Thousands of animals are still used, and killed, in British military 'trials' every year. As early as the 1950s, scientists at the infamous Porton Down biological warfare centre were pouring radioactive phosphorous onto the legs of rabbits, and injecting barium compounds under their skin. British scientists working with their American counterparts irradiated the testicles of beagle dogs at the University of Rochester.

By the 1980s, Britain's finest brains had graduated to bombarding pregnant primates with radiation: 'monkey foetuses were irradiated at a radiosensitive stage of forebrain development by localised gamma-ray exposure of the mother to 50-100 R (rads). A variety of tests of neuro-muscular activity at successive time intervals after birth showed measurable defects a few days after birth...'²

Other experiments took place in hospitals and public research institutes, such as trials in Oxford on live pigs that were given large doses of Strontium-90 radiation in order to induce 'visual changes ... in pig skin'.³ At the Atomic Energy Authority's secretive facilities at Harwell, monkeys have been injected with compounds following which bone parts are removed.

But the prize for the most bizarre experiments must go to the publicly paid bods at Aldermaston, Britain's nuclear weapons factory. With a little help from the Americans, dozens of them travelled to the middle of the Nevada Desert where they detonated live nuclear devices just yards from caged animals. The documents about these trials remain top secret, and the

government refuses to talk about them. So let me fill you in on some of the detail.

The first test, codenamed 'Operation Roller Coaster', took place at precisely 03.55 on 15 May, 1963. On one side of the desert stood a plutonium bomb the scientists had rigged up. A little further away downwind were thirty wagons, into which 84 donkeys, 84 dogs and 132 sheep had been herded.

The animals were crammed into and tied up to communal cages so that their heads faced the fallout path. At the given time, the bomb was detonated, and exactly one hour later scientists in protective clothing began the first 'sacrifices'. Some of the animals were bled dry, gutted and had their internal organs flown back to the UK. Others were shipped alive to Aldermaston's laboratories where tests would be carried out on them for several years after.

However, the inexperienced bods struggled to stun the dogs with the slaughterhouse captive-bolt pistols they had brought with them. Then there was the problem with the donkeys: their hind legs were shackled and they had to lift the animals with a five-ton crane before they could bleed them. As for the sheep, they had to be hung horizontally whilst being 'exsanguinated' because of their tendency to 'regurgitate some or all of the contents of the rumens' - which, the scientists feared, would distort their valuable data. So it was that 100 scientists at a cost to the taxpayer of £60 million (at today's prices) discovered that... radioactive dust from a nuclear bomb can get in your lungs. But don't waste your time or money on a stamp trying to find out more about these and other such illuminating 'research projects', because the government will simply say that such records 'have not been declassified and are exempt from release under Category 1 of the Code of Practice on Access to Government Information'. You'll just have to keep reading *Sick Century* instead.

Eduardo Gonçalves is a Portuguese investigative journalist.

References on page 66.

a 'hole in the sky'. And Eros - represented here by the dangerous effect of too much UV light on the skin - that generated the social motivation to cut CFC pollution.

Such an emerging paradigm of holistic human ecology requires balancing the science with insights from such challenging areas as feminism, spirituality

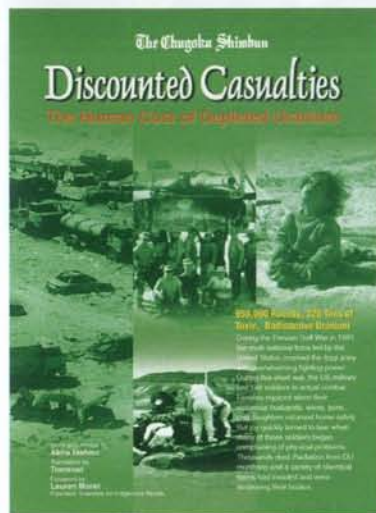
and social justice. And that's why this book can be considered only, as its subtitle claims, to be about 'basic concepts' in sustainability.

Alastair McIntosh is a fellow of the Centre for Human Ecology and author of Soil and Soul: People versus Corporate Power.

DISCOUNTED CASUALTIES

THE HUMAN COST OF DEPLETED URANIUM

by Akira Tashiro
 CHUGOKU SHIMBUN PRESS
 2001/\$12.00
 ISBN: 4885 173 019



In the current context, *Discounted Casualties: The Human Cost of Depleted Uranium* is not only relevant and timely but urgent. Written by Akira Tashiro, an investigative reporter for the Hiroshima daily *The Chugoku Shimbun* and focusing on the history and diffusion of depleted uranium (DU) munitions, the book takes us on a global odyssey from the US to the UK, through Iraq, Kosovo, and Okinawa.

Written for the general public, it begins with an overview. Crude uranium ore undergoes an 'enrichment' process to extract highly radioactive uranium-235, used for nuclear weapons and reactors. The by-product of this process is uranium-238 metal, or DU, of which more than half a million tonnes have been produced since the 1940s.

In the 1960s, the US military noted that certain properties of DU – namely, its high density and flammability – might make it useful for projectiles. It could also be acquired free of charge from the Department of Energy. In the 1970s, production of DU munitions began. They were first used in combat during the Gulf War, and some 950,000 DU rounds were fired from tanks and aircraft during Operation Desert Storm.

Because the projectiles burn on impact, some of the mass vapourises and diffuses into the air as uranium oxide particles, small enough to be inhaled into the throat and lungs. Although the Pentagon apparently knew about the potential hazards of DU as early as the 1970s, no information or training was given to Gulf War soldiers. The result? Out of nearly 700,000 participating US troops, approximately 436,000 entered areas contaminated by DU shells. Thousands of veterans died in the years following the war, and many others fell ill to leukaemia, lung cancer, kidney and liver disorders, joint pain, and congenital birth defects.

In a series of harrowing chapters, Tashiro presents a drama played out on various stages. 'On the Wrong Side of a Superpower' tells the story of individual Gulf War veterans and their illnesses. One young veteran from New Mexico describes how 25 chunks of radioactive



shrapnel were removed from his body (the result of so called 'friendly fire') and how he later developed a bone tumour. A female veteran from California, exposed days after US forces destroyed thousands of vehicles on the 'Highway of Death' between Kuwait City and Basra (in southern Iraq), began suffering from headaches, sore joints, and extremely heavy menstrual bleeding in mid-1991. Yet another veteran, a native Oklahoman, apparently transmitted DU particles to his young wife through sexual contact. She now suffers from abdominal pains, miscarriages, and severe menstrual pains.

During the 1970s and 1980s, DU munitions were produced in a number of places in the US. 'The Threat in Our Backyards' examines the effects of DU production in suburban Concord, Massachusetts, a town in upstate New York,

and a factory in northeastern Tennessee. By weaving together the experiences of residents and workers exposed to DU and the work of environmental analysts, epidemiologists, and nuclear scientists, Tashiro invites readers to draw links between the sites of DU munitions production and increased rates of cancer, tumours, and birth defects.

'Heavy Burden for an Ally' examines the human costs borne by exposed British Gulf War veterans. Of the 53,000 British soldiers sent to the Middle East in 1991, approximately 30,000 were stationed on the front lines. Since then, nearly 500 veterans have died and 6,000 more complain of physical problems similar to those of their counterparts in the US.

But perhaps the most graphic chapter in the book is the penultimate, 'The Scars of War', set in post-war Iraq. The statistics presented by local health officials are staggering. Cancer rates have skyrocketed.

In Basra, the number of people who have died of cancer in hospitals has increased more than ten-fold since the late 1980s. Leukaemia, lymphoma, breast cancer, and birth defects, once rare, are now common in the south of the country. Cancer cases and congenital birth defects have increased from three to four times since the end of the Gulf War. Not only veterans, but women, children, and other civilians in Basra and Safan were exposed. There are reports that 20 per cent of the women in Safan between the ages of 25 and 40 have lumps in their breasts, in an area where nearly all residents have inhaled DU particles.

The chapter ends with a heartbreaking collection of photos of Iraqi children who were exposed to DU and have fallen ill with lymphoma, leukaemia, and other cancers. Their situation is made even more difficult as the result of economic sanctions. Radiation therapy, chemotherapy drugs, and other treatments are in short supply. And since contamination has settled in the soil, water, and plants of the region, it is likely that the effects will be long-lasting.

The book concludes with a chapter that analyses the environmental and legal implications of DU, and the growing global movement to ban it, with the final pages drawing our attention to the ongoing use of DU in recent military operations in the former Yugoslavia and firing ranges in Okinawa prefecture.

Discounted Casualties is a sophisticated and successful exploration of the biological and social impacts of DU, an artifact as essential to the 'New World Order' as the derringer was to the Wild West. It is sure to provoke indignation and outrage among its readers – and hopefully inspiration in these most calamitous of times.

Roberto J González is Assistant Professor of Anthropology at San José State University.

ROUND UP READER

As titles go, *Ten Reasons to Abolish the IMF and World Bank* (Seven Stories Press Open Media Series 2001 £4.99/\$6.95 ISBN 1583224645) is one of the less oblique. Nor does the book, by Kevin Danaher, co-founder of human rights organisation Global Exchange, fail to live up to its title's promise. In chapters such as 'Markets vs Democracy', 'The Market vs Nature' and 'Redefining Corruption', Danaher lays bare why these systems don't work, the damage they are doing and why they must be stopped. As he says on the back cover: 'We abolished slavery; we abolished Jim

international banking institutions that do more to prevent democracy than to promote it.'

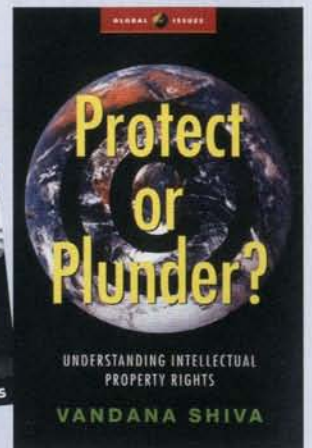
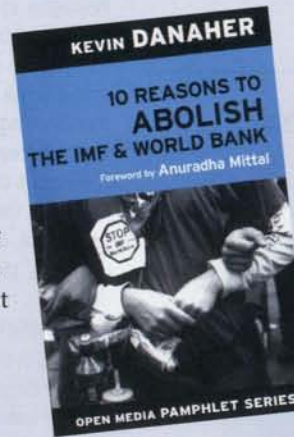
Like Seven Stories' 'Open Media Series', Zed Books' 'Global Issues' series has consistently tackled some of the more complicated issues in today's world in ways that are both accessible and informative. *Protect or Plunder? Understanding Intellectual Property Rights* by Vandana Shiva (Zed Books 2001 £9.99/ \$17.50 ISBN 1842771094) is no exception. Shiva, one of India's foremost environmentalists, demystifies concepts such as intellectual property rights, patents and TRIPS. She explains how they are being exploited by transnational corporations at the expense of communal knowledge, human and environmental health, and the independence of the world's

small farmers. In her conclusion she outlines the risk: 'In their expanded form covering all subject matter including life forms, patent laws will spell life and death options for India's two-third majority who derive their livelihoods from

biodiversity. The enclosure of our intellectual and biodiversity commons through patents is the ultimate colonisation. This colonisation is a threat to our survival.'

It is an irony of modern human existence that often the things without which we imagine we could not survive are in fact the very things that most threaten our survival. One of the best examples of this paradox is examined with great humour and insight in *CARtoons* by Andy Singer (Carbusters 2001 £4/\$6 ISBN 8023870203), which offers up a 'provocative look at our relationship with the automobile'.

Part journalism, part comic book, and littered with quotes by everyone from Ivan Illich to Adolf Hitler to Ralph Nader, *CARtoons* forces anyone reading it to rethink their dependence on the four-wheeled beast, and makes them laugh while they do.



DRIVE TO WORK / WORK TO DRIVE



Crow laws; we abolished child labour; we abolished the exclusion of women from voting; we abolished the 60-hour week; and we can abolish

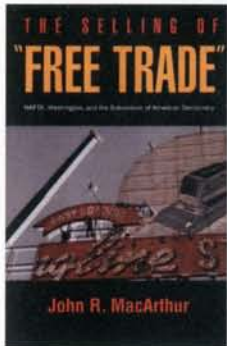
CARTOONS



THE SELLING OF 'FREE TRADE'

NAFTA AND THE SUBVERSION OF AMERICAN DEMOCRACY

Edited by John R MacArthur
UNIVERSITY OF CALIFORNIA PRESS
2001/\$16.95 ISBN: 0809085313



The author of this exposé of the bipartisan shenanigans that preceded the formation of the North American Free Trade Agreement (NAFTA) a decade ago is publisher of *Harper's Magazine*, the fiercely independent US periodical that recently celebrated its sesquicentennial. While in this narrative he sets his investigative sights squarely on NAFTA, it is by inference a denunciation of globalisation in all its various and spurious manifestations.

Rooted in the various mercantilistic theories of such early British free trade advocates as Cobden, Ricardo and Adam Smith, 'free trade' has today become a *carte blanche* for transnational corporations to exploit cheap labour, wherever they can find it. And with a net population gain of 90 million a year, mother Earth has no dearth of desperate souls willing to toil for slave wages. In the words of the author: 'By dressing up NAFTA in the garments of 18th-century economic theory and by promoting the false premise that it was about free trade, its proponents misled the... American workers.' Rather, it was 'an investment agreement designed to protect American corporations in Mexico,' with its non-existent pollution controls, cheap labour, and weak liability laws that insulate companies against law suits.

Bush senior pushed hard for the passing of NAFTA, motivated – according to MacArthur – by a desire to get back at the Mexican government for nationalising the country's oil production, a blow to him and his buddies in the oil business. Initially, the bill met solid opposition in Congress, especially from Richard Gephardt, leader

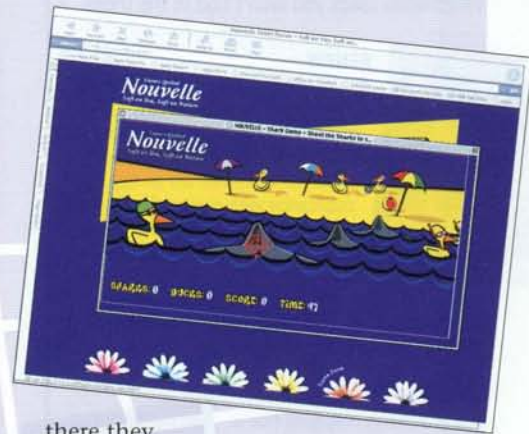
Ad Nauseam Soft in the head

Luxury toilet tissue brand Nouvelle, which prides itself on being 'Soft on you, soft on nature', has linked up with the Wildlife Trust in a new promotion. Launched in the UK in January, Nouvelle has promised to donate 'at least £10,000 to the Wildlife Trusts for important conservation work.'

But just how generous and environmentally beneficial is this donation? Under the scheme, customers collect and exchange 'on-pack tokens for a free bean badger [which is the Wildlife Trust's logo]'. For every bean badger claimed – the trusts receive 10p.

Take a closer look at the maths – to give £10,000 in 10p donations, you need to give away 100,000 bean badgers. And a double pack of Nouvelle costs £1.75 at your local Tesco supermarket. That's a lot of loo(t) for Nouvelle.

Customers wishing to learn more are encouraged to click on to the website www.softonyou.com. While



there they might fancy playing one of the eco-friendly games, such as 'save the ducks by shooting the sharks', in which you get to 'save the ducks... by shooting the sharks'. Very environmentally sound.

But then, environmentally friendly Nouvelle is actually owned by Georgia-Pacific, which According to the US Public Interest Research Group, was the second largest polluter in the US Timber industry in 1997 with over 21.3 million pounds in toxic releases. Additionally, Georgia-Pacific spent more than \$1 million in political contributions and spent another \$1.3 million to hire six lobby firms and thirteen lobbyists to push its agenda in the US Capitol.

of the Democratic Party in the House of Representatives. The son of a milkman, Gephardt was a staunch defender of labour for most of his congressional career. But he had dreams of running for president, and was not one to let moral inhibitions jeopardise his political ambitions. Realising that corporate lobbyists were a more bounteous source of campaign contributions than proletarian piggybanks, he had no trouble convincing himself that NAFTA was a pretty nifty idea after all.

As it happened, the bill was not approved on Bush senior's watch, but in 1993, when Clinton had taken over the Oval Office – largely thanks to his predecessors' bungling of the Gulf War. Fortunately for George W Bush, the Arkansas Democrat (aka Slick Willie) turned out to be a political opportunist with his finger in the air – when he or it were not otherwise occupied – to see which way the winds of fortune were blowing. So, with Clinton's presidential imprimatur, the treaty took effect in 1993 – labour be damned! In the first five years more than a thousand new maquiladoras

were established south of the border, and half a million US factory workers lost their jobs to Mexicans making less in a day than the minimum hourly wage in the US. Today more than one quarter of Mexico's labour force is engaged in this type of assembly work, which has replaced oil as the nation's leading 'export'. So much for the free traders' much touted 'level playing field'.

When you peel away the multiple layers of reassuring rhetoric and self-serving laissez-faire philosophising, NAFTA is to corporate America today what the slaves were to the plantation owners of yesteryear; instead of importing slaves to do menial work, the work is now shipped south of the border, where there is an abundance of people available to toil for slave wages. As a cynic with a penchant for bad puns might phrase it, and as MacArthur documents in this witty and well researched book: NAFTA is the greatest thing to come along AFTA the N-word became politically incorrect.

Gard Binney is an Ecologist columnist.

Magazine Rack

Worthwhile reads you won't find in the shops



RENEW

is a quarterly magazine promoting technologies for a sustainable future with a strong focus on energy, but also covering housing and the conservation of natural resources. It's an inspiring publication with plenty of case studies of people 'switching' while covering all details involved; ie cost, contacts etc.

ReNew, PO Box 2002, Lygon St Nth, Brunswick East, VIC 3057, Australia; tel: +61 3 9388 9311 or visit www.ata.org.au.

BUSINESS ETHICS

is a bi-monthly magazine that is all about corporate social responsibility. It addresses the right issues and approaches the subject from a solid angle.

Business Ethics, PO Box 8439, Minneapolis, MN 55408, US; tel: +1 612 879 0695 or visit www.business-ethics.com.



ACRES USA

is a monthly publication on organic and sustainable farming. Its strong point is that it features practical, hands-on information as well as addressing more critical issues that need discussion. Good updates on what's happening on the GM-front in the USA/Canada.

Acres USA, PO. Box 91299, Austin, TX 78709, USA; tel: +512 892 4400 or visit www.acresusa.com.



OUTSIDER

is the monthly newsletter of Minority Rights Group (MRG), the international NGO working to secure rights and justice for ethnic, religious and linguistic minorities worldwide, and to promote co-operation between communities. It's a good update on some of the latest legal human rights and political questions concerning minorities. Also check out MRG's reports – a good, informative read.

Minority Rights Group International, 379 Brixton Rd, London SW9 7DE, tel: +44 (0)207 978 9498 or visit www.minorityrights.org.



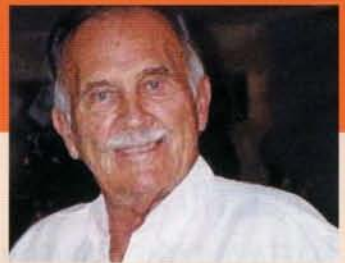
NOMADIC NEWS

is published twice a year by the Indigenous Information Network. It's *raison d'être* is to promote, protect and empower indigenous people. With a focus on Africa it raises issues and details cases studies one would otherwise be less likely to come across.

Nomadic News, PO. Box 74908, Nairobi, Kenya; tel: +254 2 729607 or email iin@iin.co.ke.



En Garde...



EMBRACED BY THE FRIGHT

ONE MAN'S NEAR DEATH EXPERIENCE AND ENCOUNTER WITH BEELZEBUB – THE UNTOLD STORY

As a writer I am used to rejection, but in my wildest dreams I never imagined that I would be turned down by the Devil and denied admission to Hell. Not wanting to be taken for a raving lunatic, I never told anyone about this strange episode before. But after *Embraced by the Light*, the account of Betty Eadie's roundtrip to heaven and tête-a-tête with Jesus Christ, made the bestseller list, I think it is safe to reveal that I once had a similar experience. For not only was the author free to come and go as she pleased and cash in her royalty cheques – nobody seriously suggested that she ought to be locked up in the looney bin.

As not many people have gone either to Heaven or Hell and lived to tell about it, who is going to contradict me? And I wouldn't be surprised if more readers wanted to find out what Hell is like.

Well, let me tell you...

It all happened some thirty years ago. I was working as a surveyor for a lumber company in the rainforests of Costa Brava, when my old malaria started acting up. As Doc had gone to town for some R&R – or 'hore y' hore as the hacheros called it – and I was out of quinine, I asked the local shaman for a dose of his magic all-purpose elixir, which was said to cure most ailments known to man, including snake bites and impotence.

Maybe the shaman OD'd me, but the next thing I remember after he had done his mumbo-jumbo routine and blown some powder up my nose with a toucan quill, was lying on my cot and staring at this blazing fire that kept coming closer and closer, until the flames singed my eyebrows and I was sweating like a fat Finn in a sauna. Just as I was about to roll out of my cot to take cover, Beelzebub materialised in the middle of the flames. They immediately subsided into a faint glow, which can best be described as an infernal emanation or hellish halo. Mustering my last vestiges of machismo, I greeted the awesome apparition:

'The Prince of Darkness, I presume?'

'I'm surprised you recognized me in this silly hardhat and the Wellingtons. The Van Dyke beard is a dead give-away, I suppose. But I'd be much obliged if you would call me Lucifer. After all, everybody knew me as the Light Bearer before I was kicked downstairs – without justification, I might add!'

'Yes, you do look a fright! And I'll be glad to address you any way you like. But what the devil – I mean, que pasa aqui? I fully expected to go to Hell someday, but what's the big rush? Can't you give a chap some advance notice – a little

time to sort out his affairs? No disrespect, sir, but this cleric I know says there's no going back from Hell; it's strictly a one-way trip.'

'For once your cleric friend got it right, son, but you're not in Hell yet. This is just the anteroom or purgatorium, where you expiate your sins. I have no clue why you were sent here; my job is just to ferry you across the River in case your soul is found to be beyond redemption.'

I must admit I was a little surprised at finding myself in purgatory. I'm not a bad sort, really. Maybe it was the job. I hadn't been too keen on taking it in the first place, but the pay was good and I thought 'What the heck, if I don't take it, somebody else will'. (Exculpatory rationalisation, a shrink might call it.) Besides, Globalumber had soft-soaped me with their spiel about how Costa Brava needed to boost its GNP, so as to provide better housing for its indigenous population. Of course I didn't buy that, but there was no question the world needed a lot of plywood for concrete forms, as well as paper pulp for printing celebrity bios, Gothic Romance novels, and books about how we're turning planet Earth into planet Dearth.

'I'm no angel, but I don't think I'm a candidate for Hell, either,' I said. 'Clearcutting the forest may not be such a hot idea, but a fellow has to eat.'

'Well, if you'll pardon the pun, it's clear to me that you are not cut out for the Devil's work,' Satan retorted, fixing me with a stiletto gaze. 'At heart, you're nothing but a sentimental greenie, and I'm going to recommend that the charges against you be dropped – provided you hop on the next chopper out of here, and never return.'

'That's a done deal' I said, happy to have the Devil as advocate. I extended a clammy hand to shake his, but rapidly withdrew it as the Evil One was once again engulfed in a blazing fire. Almost instantly the flames subsided, and before me stood the shaman, his face crinkled in a savant smile. Relieved, I fell into a deep and dreamless slumber. When I awoke next morning, my brow was cool and my brain was clear. I quickly packed my duffelbag and caught the next flight out of there.

* * *

In the ensuing three decades one third of the world's virgin forests have been clearcut – with disastrous consequences for the environment. In retrospect, I'm glad I had no part in this suicidal undertaking – even if forests are not nearly as effective in neutralising CO₂ emissions as scientists once believed.

Gard E Binney



Word unheard lifts the mask on Carnival

The generally accepted root of the word Carnival is the Italian 'Carne Vale', meaning 'goodbye to meat'. It is traditionally celebrated in the days leading up to the last day before Lent, Shrove Tuesday (Shrove is the past tense of the verb shrive – to confess one's sins).

However, there is an alternative interpretation, which although not accepted by the stuffy old OED, is well worth entertaining. Rather than the Christian renouncing of worldliness (which, after all, actually takes place a day later, on Ash Wednesday), the root of Carnival is believed to be the Latin phrase Carrus Navalis, which translates as the 'cart of the sea'. In the past these ship-like chariots, the forerunners of today's 'floats', were pulled through the streets in spring festivals across the world, celebrating fertility and the return of life.

In Babylon, a magnificently decorated ship on wheels, pulled by the faithful, was brought to the temple of the god Marduk. Similar vessels were part of the rites honouring the Egyptian goddess Isis. In India, at the annual festival of Jagannatha, who is the incarnation of the Hindu god Krishna as 'the Lord of the World' and the root of the word 'juggernaut', the god's image is dragged through the streets on a giant chariot. And the tradition was still known to be present in Europe in 1133, when Abbot Rudolph of the Benedictine Abbey of St Trond in Eastern Belgium described a spring festival, during which a peasant drove his vehicle, 'a ship on wheels', to Tongress, cheered on his way by the crowds.

However, in the Middle Ages the Christian church began to exert its might through the



Philanthropy or Villain-trophy?

Every month, *The Ecologist* keeps you updated on what corporate responsibility really means. This month, come fly the eco-friendly skies with British Airways.

You don't get to be 'the world's favourite airline' just like that. It takes diligence, reliability and those nice little menus that manage to rewrite the homogenous fare that is airline food as 'Penne arabiata with a sun-dried tomato jus' (Pasta in red sauce again, then.) But if you really want to be the silver lining on cloud nine, then you need to show how much you care about the world. After all, 2002 is the year of Ecotourism. Then again, it was National Chip Week in the UK last month, so what's in a name?

Cash, mainly. Oh and prestige, greenwash, and an unmerited position as an arbiter of social responsibility. Take British Airways, for example. The company has, for some years now, run an annual award scheme called the 'Tourism for Tomorrow Awards', through which it recognises the sterling work of some committed environmentalists (or opportunistic travel companies, depending on your point of view) and in so doing gets to hold itself up as a globally committed corporate citizen.

Could this be the same BA that is campaigning religiously for the 'opening of the skies'? Or the company that, in the fallout from 11 September, has been making a concerted advertising drive (£5.3 million pounds) to position itself as the businessman's choice – which basically means fewer seats on a plane, more profits for BA, all at the expense of more pollution per person

carried?

Under the promotion, members of the airline's executive club who have not flown since the attacks on the US on 11 September will be offered 5,000 free air miles if they travel between 21 January and 31 March. The www.chooseclimate.org website puts this, and any other flight you might choose to make, into an easily understandable context:

'In 1995, 6 billion people on the planet emitted 6 billion tonnes of carbon into the atmosphere as CO₂ by burning fossil fuel – ie one tonne per person on average. The oceans can only absorb about 2 billion tonnes of carbon annually, and trees absorb less than one tonne. So to stabilise the concentration of CO₂ now, we need to cut emissions by about 60 per cent, to 0.4 tonnes of carbon per person per year. In comparison, [the free 5,000 miles offered to business travellers] would emit 0.24 tonnes of carbon per passenger, ie your total sustainable carbon emissions budget for all purposes (including heating, cooking, lighting, local transport, etc) for 0.6 years. And that's just the CO₂: the total warming effect... is about three times greater.'

Furthermore, if airplane fuel was taxed in the same way as petrol in the UK, the flight would have cost an extra £215. But, somehow it remains tax-free. And that's just the way BA likes it.



repression of earlier, more earth-based religions, and the Carrus Navalis became seen as a symbol of licentiousness. This culminated in 1494, when Sebastian Brandt, Professor of Law and Poetry at the University of Basel, Switzerland, published *Das Narrenschiff* (The Ship of Fools), in which he describes all manner of fools and their individual vices. It is around that time that the Italian

etymology began to be used.

Although the Carrus Navalis root is not universally accepted, what it represents, namely the marginalising of nature and religions that celebrate it is irrefutable. The Heathen ('People of the Heath') and the Pagans ('People of the Countryside') have been the objects of civilising ('making a member of a city') missions for centuries.

REUTERS

THE Exchange

The Exchange is a noticeboard for environmental and ethical services and needs, open to all. Entries are FREE for individuals and NGOs, charities and campaign groups. For businesses and educational institutions, the cost is £54 per listing, including a year's free subscription to the magazine. Repeat listings are £20 per issue, £10 extra for a boxed ad. Please send entries – no more than 40 words long – together with cheques where necessary made payable to *The Ecologist*, to Sally Snow, The Ecologist, Unit 18, Chelsea Wharf, 15 Lots Road, London SW10 0QJ, or email sally@theecologist.org. For more information, call Sally on +44 (0)20 7351 3578. Free listings are allocated first-come first-served, and we reserve the right to refuse any entry. *The Ecologist* does not necessarily endorse the products, organisations or services listed.

APPEALS

URGENT! £15,000 needed to fund 'Judicial Review' against Secretary of State who gave the go-ahead for an out of town, PFI college relocation on 50 acres Grade 1 land, Canterbury, Kent. No Environmental Impact done, contravenes PPG13 and goes against wishes of local people. Cheques to PACE Judicial Review Fund, c/o Dr Meaden, 33 St Stephens Road, Canterbury, Kent CT2 7JD.

Self-funding MSc student seeks any support available to finance fieldwork research into Costa Rican rural women's participation in the sustainable development process. Email helentemple@yahoo.com

ANCIENT WOODS UNDER THE HAMMER – PLEASE HELP!

Nearly half of the UK's ancient woodland that remained in the 1930s has been lost. Help us now before it is too late for this rare and irreplaceable habitat.

To support the Woodland Trust's campaign, call freephone 0800 026 9650 or donate online via

a secure website www.woodland-trust.org.uk/appeals.

CALL FOR PAPERS

Beyond Anthropocentrism, University of Exeter, 16-17 July. Papers are invited which address various aspects of this theme. Abstracts sent by 29 February to beyond-anthropocentrism@exeter.ac.uk or telephone the School of English on +44 (0)1392 264251 for more information.

International Symposium on Renewable Energy, Walt Disney World, Orlando, Florida, 4-8 August 2002. Visit www.doce-conferences.ufl.edu/isree8/ or email Sheinkopf@fsec.ucf.edu for details. Deadline for abstract 1 March.

CAMPAIGNS

Shrimp Action

Are you aware of the serious environmental and social problems that current methods of tiger prawn and shrimp farming can cause? visit:

www.shrimpaction.org

Please help!

UK company Thames Water has set up a website in association with Water Aid. If 2 million people click on it, they will donate £150,000 to provide safe drinking water for 10,000 people in Africa and Asia. www.givewater.org

Visit www.wdm.org.uk for the latest news on the World Development Movement's campaigns. We tackle the root causes of poverty, winning positive change for the world's poorest people.

Scottish Genetix Action – home to the campaigns of Scotland's anti-GM organisation. Briefings, news, reports, actions. Bookmark it as your guide to the GM campaign in Scotland. Visit: www.scottishgenetixaction.org

People & Planet is the national student network campaigning to end world poverty, defend human rights and protect the environment. To find out more about our campaigns, visit www.peopleandplanet.org. Our current campaigns include **Stop ESS0 and Green electricity**.

22-28 April is Real Nappy Week focusing attention on the environmental effects of nappies and promoting a fair choice. The Real Nappy Project is currently inviting applications for Real Nappy Week Awards. Email nappies@wen.org.uk for an application form or visit www.wen.org.uk

COURSES

Master's Degree Programme in Peace and Conflict Studies, University of Tromsø, Norway. The programme aims at international recruitment of students, with students from Nordic and non-Nordic countries. All literature, teaching and student work will be in English. Admission is limited. Visit www.adm.uif.no/studie/foreign/english/Basic.htm for information.

Birkbeck, University of London

As London's leading provider of part-time university courses, Birkbeck offers a broad range of subjects at a variety of levels. For further details of our short courses, certificates, diplomas, undergraduate degrees, and postgraduate taught and research opportunities, call 0845 601 0174.

Opening 26 May 2002 **Durrell School of Corfu**. A unique meeting point of the arts and sciences. School will host lectures and seminars by an international faculty of scholars and experts. Assistance with booking accommodation given, also limited number of scholarships available.

Further information:
USA: Anna Lillios, lillios@pegasus.cc.ucf.edu;
Canada: James Gifford, gifford@ualberta.edu;
Europe: Richard Pine richardpine@eircom.net;
Corfu: Hilary Whitton Paipeti.corfiotm@otenet.gr;
Durrell School of Corfu, PO Box 445, Corfu 49100, Greece.

World Institute for Development Economics

Research (WIDER) Research Programme for 2002-2003 has been announced. The new research programme covers 14 topics divided into 3 categories – microeconomic and distributional issues under the broad theme of Inequality and Poverty; macroeconomic trade and finance topics under the general heading of Globalisation, Finance and Growth; various new initiatives. Project descriptions are available on website www.wider.unu.edu/research/research.htm

Bat Conservation Trust. Three-day

foundation course for environmental professionals. Various venues and dates from May-August. Contact The Bat Conservation Trust, 15 Cloisters House, 8 Battersea Park Road, London SW8 4BG; telephone 0207 627 2629; email: gsargent@bats.org.uk

Low-Impact Living Initiative is offering a range of residential weekend courses in 2002, on practical environmental topics such as biodiesel, compost toilets and solar hot water. Contact us or visit our website for more details. Tel: 01296 714184; email: lili@lowimpact.org; website: www.lowimpact.org

Green and Away. Europe's only eco-friendly tented conference centre. We host conferences and events for organisations wanting environmentally-friendly facilities and a wonderful atmosphere. The wind and the sun provide our power and our food is local and / or organic. Visit www.greenandaway.org

DIARY DATES

27 February - 1 March, Zurich, SWITZERLAND **BioSquare 2002, Bringing the Global Life Sciences Community Together**. This international forum aims to provide more and easier opportunities for business development and research executives from the pharmaceutical, nutraceutical, food, agricultural and financial industries to meet with biotechnology companies. Bayer, Roche, Novartis, Genzyme, GlaxoSmithKline, Genzyme, Serono, Dompe, Danone Dupont, Novozymes – they'll all be there. Contact: E.B.D. Group, telephone: +1 (760) 930 0500; fax +1 (760) 897 2299; email biosquare@ebdgroup.com, website: www.ebdgroup.com/biosquare

23-24 February London, UK **Plan Colombia – Opening the Way to the Multinationals**. Conference in London and the AGM of the Colombia Solidarity Campaign. Call +44 (0)7959 923 448 or email colombia_sc@hotmail.com

27 February, Plymouth, UK **Climate Change and the Environmental and Coastal Resources of the South West**: a small business focussed Workshop. This is just one of a series of free workshops being held by the Centre for Climate Change Impact Forecasting (C-CLIF) throughout the region. To find out more, call C-CLIF on 01752 232378 or



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log on to www.c-clif.co.uk. Funded by the European Social Fund.

Spring 2002, UK
Gaia Research is organising a series of events targeting **building designers and cost professionals**. Each is intended to provide useful and practical guidance on how design teams can create more sustainable buildings. For more information, contact Sandy Halliday on 0131 558 7227; email gaiasandy@aol.com or search for CPD at www.GaiaGroup.org

3-4 March, SWITZERLAND.
Referendum first on whether the country should become a member of the UN and secondly on the "Yes to Europe" initiative.

Edinburgh, UK
Centre for Human Ecology Spring 2002 Lecture Series.
5 March. **Education: Role and responsibility.** Stephen Sterling.
12 March. **The Illusion of Growth: Monetary reform as an essential step towards sustainability.** Richard Douthwaite.
19 March. **Decay and Change: Biodiversity – where do we go from here?** Professor Aubrey Manning.
All lectures take place on Tuesdays at 6.30pm, Centre for Human Ecology, 12 Roseneath Place, Marchmont, Edinburgh. Tickets on the door £3.50 (£2.50 concessions). Tel: 0131 624 1972; email: info@che.ac.uk; website: www.che.ac.uk

4-15 March, San Jose, COSTA RICA
2nd Session of the UN Forum on Forests. The meeting includes a high level ministerial segment. For more information contact Mia Soederlund on +1 212 963 6208, or visit www.un.org/esa/sustdev/forests.html

5 March, Newcastle, UK
Curtis Auditorium, Newcastle University, 5.30pm.
The Future of Global Stock Exchanges. Lecture by Clare Furse, Chief Executive of the London Stock Exchange. Visit www.ncl.ac.uk/press.office/lectures/

5-7 March, Glasgow, UK
Tackling Inequalities: building sustainable communities. Forum designed for those whose work or interests are concerned with promoting the public's health, professionals and non-professionals. Research sessions, workshops, poster exhibition. Visit www.ukpha.org.uk or telephone 0870 010 1932 for details.

6 March, London, UK
The Alternative Food Economy: Myths, Realities and Potential. Organised by RGS-IBG, 1 Kensington Gore, London SW7 2AR. Telephone Events on 0207 591 3100 to register, or to receive full details. Alternatively, email events@rgs.org for full programme and registration form.

6 March, London UK
Strengthening the roll of the UN, Arms control and sustainable development. Call the 'Lobby Coalition' on +44 (0)207 7930 2931 or email pdyson@una-uk.org

7 March, London, UK
Global Warming and Extinctions; can we sustain biodiversity? Talk by Dr Richard Leakey, Royal Geographical Society, 7pm. Tickets £15 (£25 with reception) from Friends of Conservation, Riverbank House, 1 Putney Bridge Approach, London, SW6 3JD; tel: 020 7731 7803; fax: 020 7731 8213.

7-10 March, Wels, AUSTRIA
World Sustainable Energy Day. Telephone +43 732 65844382 or visit www.esv.or.at

8 March, GLOBAL
Stop the world and change it. Global Women's Strike. Women (and men who support us) are invited to join actions wherever you are. Visit <http://womenstrike8m.server101.com> (English and Spanish).

8 March, GLOBAL
United Nations Day for Women's Rights and International Peace.

8-10 March, Tamil Nadu, INDIA
Seed Savers Workshop. Auroville, Tamil Nadu.

Aim is to form effective network of Seed Savers. For details, email annadana@auroville.org.in

8-10 March, Bury St Edmonds, UK
Hengrave Hall, nr. Bury St. Edmonds. **Science, Soul and Society.** For more information, contact Hilary Norton on +44 (0)208 4703365 or visit www.greenspirit.org.uk/sss

9 March, Stratford upon Avon, UK
Rally for a GM free Future. Speakers, information, organic food, entertainment activities and plenty of opportunities to get active. Includes demo at the current trial of winter oilseed rape in Long Marston. Transport available. Stratford upon Avon Town Hall from 11.30. For more information call 0207 272 1586.

9/10 and 16/17 March, Dana Point, USA
The celebration of the migration of the California Gray Whale culminates in a two-weekend festival. More than 100,000 visitors expected. Huge variety of activities. Visit www.festivalofwhales.org

11 March, San José, COSTA RICA
The World Bank's Round Table on Forestry in conjunction with the 2nd UN Forum on forests. Contact: Kanta Kumari, GEF Secretariat; tel: +1 202 473 0508 or email: kkumari@worldbank.org

12-13 March, Washington DC, USA
International **Electronic Products Recovery and Recycling** conference. Visit www.nsc.org/ehc/epr2.html or telephone +1 202 293 2270

13-15 March, Vancouver, CANADA
Globe 2002. Trade fair and conference on business and the environment. Themes include Johannesburg, Globalisation in the 21st Century, Energy – the North American Reality, Climate Change etc. For more information, visit www.globe2002.com or telephone +1 604 775 7300.

14 March, Dorset, UK
Kingston Maurward College, Dorchester, 7.30

pm. Talk by Martin Wolfe **'Vegetables in Clover'**. To book a place, telephone the college on 01305 215 025. For further information, telephone 01747 811900. Entry is £2 for members of Wessex Organic Movement, £3 non-members.

14-15 March, Rio de Janeiro, BRAZIL
Quantum Leap is currently working with UNEP's Financial Initiative to organise an NGO-Bank meeting prior to the **UNEP Financial Services Initiative Annual Roundtable**. For more information, contact Michelle Chan-Fischel at mchan@foe.org

14-20 March, Quito, ECUADOR
The Permanent International Camp for Social Justice and the Dignity of the Peoples is a space of civil resistance that seeks to articulate a wide array of persons, organisation and movements that together reject Plan Colombia, the FTAA and the neo-liberal globalisation in all of their manifestations. Visit www.camp-ecuador.de.uv

15 March, GLOBAL
International Day Against Police Brutality. Visit www.appleonline.net/justiceuk/jus.html

15-16 March, Barcelona, SPAIN
First **EU Council Summit** under Spain's presidency

16-23 March, Kyoto, JAPAN
World Water Forum. A Ministerial conference will be held during the event, where Ministers will work toward framing and adopting a political declaration concerning global water problems(!) Visit www.worldwaterforum.org or telephone +81 3 5212 1645

18-22 March, Monterrey, MEXICO
International Conference on Financing for Development. Bringing together high-level representatives from governments, the UN, global trade and finance organisations. Call Harris Gleckman on +1 212 963 4690 or visit www.un.org/esa/ffd

23 March, Brighton, UK
A day of all things sustainable. Learn more and network with local projects and producers. St Mary Magdalene Primary School, 10am – 5pm. Entry by donation (suggested £5). Contact Val (01273 239418), Alex (01273 685831) or magoose@ntlworld.com

25-27 March, Washington DC, USA
Earth Technology Forum. Climate change, ozone depletion, policies, solutions – all sponsored by the International Climate Change Partnership (sic) in co-operation with both the US Department of Energy and the Environmental Protection Agency, Industry Canada and Environment Canada plus UNEP, UNDP and the World Business Council for Sustainable Development as well as over 80 industry groups – honest crowd, in other words. Visit www.earthforum.com or call +1 703 807 4052.

25 March – 5 April
3rd Preparatory Session for the 2002 World Summit on Sustainable Development. UN Headquarters, New York, USA. Expected to produce a first draft of a 'review' document and elements of the Summit Programme. Contact Andrey Vasilyev, +1 212 963 5949 or visit www.johannesburgsummit.org

30 March – 5 April, Findhorn, UK

Restore the Earth! Conference jointly hosted by Trees for Life and The Findhorn Foundation, dedicated to highlighting and catalysing positive steps to return the planet to sound ecological health. Visit www.findhorn.org/restore for more information.

3-5 April, Imperial College, London, UK
Institute of Chartered Foresters conference. Includes on 3 April 'Sustainability and profitability are incompatible' – Oxford-style debate, open to the public. Speakers Charles Secrett and Ben Gill. For further information, contact Neville Elstone on 0131 225 2705 or visit www.charteredforesters.org

4 April, London, UK
Digging Deep Down Under – Australian Conservation Today, by Dr Denis A Saunders and Dr Joe Benshemesh. 7pm at the Royal Geographical Society, London. Free admission, but ticket only. Contact Earthwatch, telephone 01865 318813; Email info@earthwatch.org.uk

6-19 April, Europe.
Resistance is Fertile!
In April 2002, the UN circus of government delegates, technical experts and business lobbyists will be contemplating the state of the world's biodiversity resources over hors d'oeuvres at the Sixth meeting of the Convention on Biological Diversity (CBD). The CBD will soon have two legally-binding international protocols – the Biosafety Protocol and 'The Law of the Seed'. Neither has the power to stop the spread of GMOs, protect farmers' rights or stop finite resources being plundered for profit – once again demonstrating the UN's lack of political will and power. Fortunately another reality is possible! During these weeks, other voices will call for radical change in agriculture and international trade, for reclaiming our genetic resources (free the seed!), against GMOs and patents on life and against the corporate control of food and agriculture. To find out more about Resistance is Fertile! email rif@gn.apc.org or write to rif, c/o ASEED Europe, PO Box 92066, 1090AB, Amsterdam, The Netherlands or www.resistanceisfertile.org

12-15 April, Washington DC, USA
World Bank Action Summit. It's time to get the World Bank out of oil, gas and mining, and the World Bank Action Summit 2002, aims to do just that. For more information see www.ssc.org or www.seen.org

17 April, Hanover, GERMANY
BASE 3rd International Investment forum for Sustainable Energy. For more information, visit www.energy-base.org/forum02

17-19 April, Washington DC, USA
Hyatt Regency on Capitol Hill. 'The Future of Wealth on Earth: Opportunities and Risks for Investors, Corporations and Activists in a Changing Global Climate.' Visit www.ceres.org

22 April, worldwide
Earth Day is fast approaching. We look forward to hearing what you are planning for Earth Day so that we may share details of your work with the world. Please email us at worldwide@earthday.net.

27 April, Oxford, UK
Earthwatch Open Day. 10am-5pm at Oxford Brookes University, Gipsy Lane, Headington, Oxford. Tickets: Earthwatch members £7.50; Non-members/guests £10.00; Student concession £7.50. Coffee breaks and lunch are included. All proceeds are in aid of the Earthwatch research and education programme. Contact Earthwatch, telephone: 01865 318813; email info@earthwatch.org.uk

27 April, London, UK
Scientists for Global Responsibility 10th Anniversary Conference. Can Scientists be Trusted? Friends Meeting House, Euston Road, London NW1. For details, telephone 07771 883696 (9am-1pm) or visit www.sgr.org.uk

14th IFOAM Organic World Congress.
CANADA **Cultivating communities.** Victoria, BC, Canada, August 2002. For information, visit www.cog.ca/ifoam2002.

30-31 May, Guildford, UK
The Surrey European Management School (SeMS) invites you to participate in its 5th International Conference on the Dynamics of Strategy. Entrepreneurship, Corporate Social Responsibility and Globalisation. See www.sems.surrey.ac.uk/semsnew/Conference/ConferenceIndex.asp

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The Green Machine. The first healthy food and drink vending machines for schools. A range of products meeting high criteria, nutritionally and ethically, which taste good enough to be popular with children. For details, contact David Berny, 75-85 Summertown, London, SW17 0BQ. Tel: 020 8971 0055; Email: david@organnatural.com

Green Building Store. Building products for safe, sustainable homes. Windows, doors and conservatories, natural paints and wood finishes, timber preservatives, recycled insulation, stainless steel guttering, eco paint stripper, tubular skylights and much more. On-line Mail Order. Telephone 01484 854898. Visit www.greenbuildingstore.co.uk

The Green Stationery Company is the complete green office supplier. Offer the largest range of green office products in the UK as well as the full range of discounted standard supplies. We are a mine of information on green purchasing and committed to sustainable development. Visit www.green.stat.co.uk

One Village has launched on-line shopping for craft-made articles for the home from community organisations such as workers co-operatives in India, Bangladesh and other countries. Rugs, lampshades, containers, duvet covers, etc. Information pages too. Go to www.onevillage.org

Farmers Markets
These markets enable local producers to sell their own produce to local people at a realistic price. The National Association of Farmers' Markets exists to promote the sustainability of

existing markets and assist in the setting up of new ones. To find out where your nearest market is, send a large sae to NAFM, South Vaults, Green Park Station, Bath, BA1 1JB or visit www.farmersmarkets.net

Emmaus
A national charity offering homeless people long-term work and accommodation. They raise funds by refurbishing and recycling donated goods, saving approximately 3,000 tonnes of waste from domestic tips every year. To find out where your nearest branch is, visit www.emmaus.org.uk

Fairly-traded organic cotton t-shirts
Stylish, fairly-traded organic cotton t-shirts and envelope re-use labels in aid of our campaigns for a fairer world. Call the World Development Movement on 020 7738 3311 or visit www.wdm.org.uk

HOLIDAYS

Extreme Holidays. the new UK tour operator that organises surfing, windsurfing and kite surfing holidays in the Canary Islands, **will donate £5 to Surfers Against Sewage (SAS)** for every booking it takes during the month of March.

To let. Andalucia. Beautiful cottage in the Alpujarras mountains. 3 double bedrooms. Walking, skiing, fantastic views, peaceful surroundings. Swimming pool. The coast is 65km; Grenada 75km; Orgivia 15km. The nearest airport is Malaga. English spoken. Contact: helennissen@cs.com; telephone 0114 250 7645 or 00 34 958224116.

Walking, pony trekking, wining, dining, swimming and above all relaxing and spending quality time with your friends, your family, your children and your pets; this is all possible next summer at **Les Cagermes, in the French Dordogne**, a 17th century farm, ready to welcome you for the holiday of your life. Visit www.lescagermes.com for further details.

Ananda – Sustainable development and tourism in India. Community-based projects combining tourism with individual, social and ecological development; bringing together people of different cultures to exchange knowledge, restore the environment and support sustainable ways of living. Visit www.anandaproject.org

JOIN

Environmental Law Foundation. A UK charity whose purpose is to help secure environmental justice for all. ELF empowers communities and individuals through advice, assistance and support. It influences the environmental agenda through events, publications and consultation. Contact ELF on +44 (0)20 7404 1030 or email info@elflaw.org

Woodland Heritage

A registered charity concerned with the way that our woodlands are managed. Wood is our one and only renewable, natural resource. Forestry is man working in partnership with nature. For a free copy of our journal, please call 01428 652159

Kingfisher

Lancashire; under 35, interested in the countryside and environment, and like to extend your social scene? Kingfisher is a new social group in the Pendle and Fylde areas. Details from John, telephone 01253 626268 or visit www.kingenv.org

envocare the information web site that promotes care of the environment

Would you like to improve the environment without a lot of fuss?
Visit the site designed to provide the information:

www.envocare.co.uk

Hundreds of descriptions, tips, suggestions and links are provided on a diverse range of subjects including:

- Recycling • Care with Hazardous Waste • Recycling and Buying PCs & Cartridges • Electrical & Electronic Equipment
- Ethical Financial Investment • Composting Organic Waste
- Climate Change & Kyoto • Alternative & Renewable Energy
- Environmental Educational Courses • And There's More

The site offers serious commentaries on selected topics. There's space for news and contributor's articles and loads of photo backgrounds to download.

You can send virtual cards and obtain help on buying reference texts.
And there's still more.

QUESTIONS AND ANSWERS

What would happen if everyone on Earth becomes vegetarian? Will it upset the ecological balance?

Bijoy Mishra

PROJECTS

Wild Trout Trust Conservation Award 2002.

Sponsored by Classic Malts. Entry deadline 15 April. We will consider entries of any magnitude, but particularly projects that have benefited the wider environment, from invertebrates to otters. Please see www.wildtrout.org for more information, or write to: Wild Trout Trust Conservation Award, 92-104 Carnwath Road, London SW6 3HW.

Cannabis and hemp. I propose a meeting in central London to bring together the teachers of the tribes; promoters, news, media and people who have access to helping lift the lid on the true facts.

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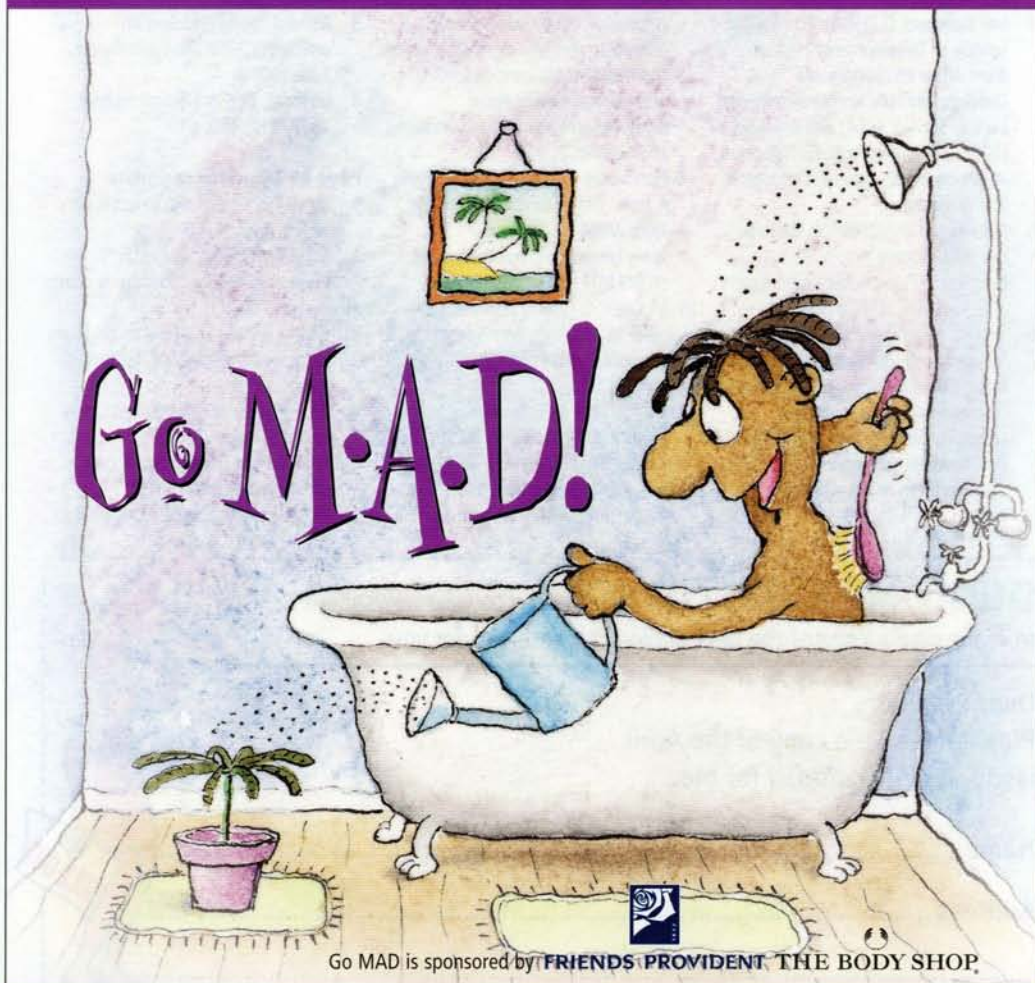
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A different version of this paper was first presented at the University of Vermont Environmental Program Symposium during October 2001. The writer is grateful to the following people for their ongoing conversations, commentaries, and support related to this work: Rob Gordon, Chuck DeBurlo, Deborah McLaren, David Barkin, Juan Jose Consejo, Julie Trupke, Crescencio Resendez-Hernandez, and members of the International Forum on Indigenous Tourism.

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