

Spirit of the AMAZON By Gerardo Reichel-Dolmatoff

The WTO: *The New World Constitution Laid Bare* John Pilger: *The Hijacking Of Democracy* Noam Chomsky: *The Truth About Kosovo* Simon Fairlie: *Rejuvenating The Rural Economy*



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The Ecologist

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Editorials The Ecologist goes monthly

A sour readers will probably have noticed, *The Ecologist*, as of this issue, has shifted up a gear, moving from bi-monthly to monthly status. From now on, we will be producing ten, rather than six, issues a year, with the magazine appearing on the first day of every month, apart from during the August/September and January/February periods, when we will be producing combined issues.

Our move to monthly publication has also been accompanied by some small design changes. The news and campaigns section, which will now be able to focus even more effectively on the latest developments around the world, has been expanded and moved from the centre to the front of the magazine. We have also given some space to the return of a popular old friend, *Gulliver In Automobilia* (page 252), which will be a regular feature from now on.

This move is a reflection of the magazine's continued success and corresponding rise in circulation. But, such changes apart, *The Ecologist* will continue to carry out the task that it has set itself for almost thirty years: to challenge the basic assumptions which underlie a political and economic worldview that is causing untold damage to people and their environments across the world.

If you are a subscriber to the magazine, you will now be receiving ten, rather than six, issues of *The Ecologist* per year, although your subscription price will remain the same. If you are not yet a subscriber, then this is surely the ideal time to remedy that defect...

Is the Biotech Dream Crumbling?

By Paul Kingsnorth

his is not, I promise, just another attack on Monsanto. Readers of The Ecologist will already know more than they perhaps want to about the dubious activities of our gene-manipulating friends from Illinois - though continuing demand for The Monsanto Files (over 300,000 copies sold so far, in six languages, and no sign yet of demand slowing down) suggests there are many more out there hungry for the real story. No, this editorial simply raises a question which it might have seemed absurd to ask only a few months ago: is it possible that campaigners against biotechnology might actually win?

The anti-GMO movement is no longer confined to 'activists' – it has become a significant popular movement in its own right, and one of the biggest, fastest-growing and most remarkable environmental campaigns of recent years.

Consider the events of just the past few months. Despite staunch support from both British and American governments, biotechnology companies have come under sustained fire from environmentalists (radical and mainstream); from the media (virtually every national newspaper in the UK, for example, from both sides of the political fence, is now actively campaigning against GM crops); from independent politicians; from farmers; from doctors; and even from royalty (in Britain,



The six Genetix Snowball defendants outside London's High Court

the Prince of Wales has lashed out again at GM foods, embarrassing the government in the process.) Seed companies are dropping out of the GMO experiment for commercial reasons. Major supermarkets are dropping GMOs like hot potatoes. A caravan of Indian farmers is touring the industrialised world warning of the dangers of biotechnology.

In other words, the anti-GMO movement is no longer confined to 'activists' – it has become a significant popular movement in its own right, and one of the biggest, fastest-growing and most remarkable environmental campaigns of recent years.

But will it be successful? Is it really conceivable that the GMO bandwagon could be stopped in its tracks – even reversed? Again, a look at recent events suggests that a GMO-free world is perhaps not, after all, an impossible dream.

What may turn out, in the coming

months, to be the most significant development so far in the battle against biotechnology occurred in the High Court in London on 20th April. Six environmentalists from the GenetiX Snowball campaign, who are accused by Monsanto of deliberately uprooting their GM crops, successfully defended themselves against the corporation's attempts impose an injunction on them, which would have meant that any further action they undertook against the corporation would lead to a prison sentence. (There was a twist in the tale, too. Monsanto were also seeking an injunction against anybody who had been sent a copy of GenetiX Snowball's "Handbook For Action", a list which included the staff of The Ecologist, not to mention Tony Blair, the Pope and Queen Elizabeth II...)

Much to Monsanto's frustration, though, the judge at the two-day summary hearing ruled that GenetiX Snowball's defence was strong enough to warrant a

Editorials

full trial. The significance of this decision is potentially enormous. It means that Monsanto now face an expensive and exhaustive public trial, as they attempt to justify their case. In doing so, they will need to produce facts, figures and documents which they may have preferred to keep a secret. The trial, a date for which has not yet been set, could do the corporation as much damage as the fabled 'McLibel' case did to the reputation of Ronald McDonald and Co.

Meanwhile, still in the UK, one of the country's leading plant breeders last month dropped out of GMO trials, citing "vandalism" and dangerous "commercial risks" as their reason for doing so. CPB Twyford had been working on developing GM rape, and their pullout is a major blow for the biotech companies. There is also speculation that AstraZeneca (one of the world's 'big five' biotech companies, whose head office was recently invaded by activists dressed as mutant tomatoes) may be on the verge of selling off its biotech interests too.

Most remarkably of all, US newspapers reported in early June that the global GMO experiment may soon be challenged by the most unlikely enemy of all – market forces. Several newspapers noted the recent fall in Monsanto's share prices, and suggested that if current levels of consumer rejection of GMOs continues, food biotechnology may no longer be a realistic commercial proposition; a possibility which should make every activist's eyes light up with glee.

The UK, thanks partly to the recent BSE scare, is still proving Monsanto's hardest European nut to crack. Prime Minister Tony Blair, sounding more like a Monsanto's spokesperson with every passing day, is currently reeling from attacks on his government from all sides. English Nature, the government conservation body, has advised against allowing the commercial growing of GM crops. The government's chief scientist has called for a moratorium. The British Medical Association, which represents the country's doctors, is warning of health risks. All the country's major supermarkets are removing GMOs from their products.

The latest opinion poll in the UK, published at the end of May, shows that a stunning 96 per cent of the population continue to reject GM foods. Among them is the country's future King who, despite the government's attempts to shut him up, recently wrote a long article on the dangers of biotechnology. "Are we going to allow the industrialisation of life itself, redesigning the natural world for the sake of convenience?" he asked.

But the UK is by no means alone in its resistance. Across the world, this encouraging trend seems to be speeding up. In April, the seven largest grocery chains in six European countries publicly went 'GM free'. In the US, the third-largest corn processor has announced it will soon refuse to accept any GM corn that has not been approved by the European Union. In India, the Supreme Court has upheld a ban on the testing of GM crops, even as activists from 'Operation Cremate Monsanto' tour Europe and America to warn of the dangers of GMOs. In Brazil, one State has declared itself a 'GMO-free zone'.

And the bad news – at least for the biotech companies – doesn't stop there. In the magazine *Nature*, published in late May, a study which suggested that genetically-modified maize was killing off some of North America's most beautiful butterflies excited the press and disturbed the public. Pollen from the maize, which had been engineered to protect it against 'pests' also, perhaps unsurprisingly, killed off the larvae of the Monarch butterfly, which feeds on the plant.

More than 7 million acres of this maize were planted in the US last year. Any more studies of this sort, and the US public, still lagging behind its European counterparts in its awareness of the biotech debate, might begin to realise – despite the best efforts of Messrs. Clinton and Shapiro – that it is being used as an unknowing guinea pig in a corporate science experiment. Then, Monsanto will really be in trouble. Then, just maybe, we could see the biotechnology dream finally crumble around their ears.

The Rise of the 'New Democracy'

By John Pilger.

Democracy is a clear loser in the process of globalisation. With every step of trade deregulation, nations are signing away their powers of self-governance to unaccountable transnational corporations and investors.

The word 'globalisation' is often used in a positive sense to denote a 'global village' of 'free trade', high-tech marvels and all kinds of possibilities that transcend class, historical experience and ideology. According to one of its chief proponents, British Prime Minister Tony Blair, the very notion means that "the grand ideological battles of the twentieth century are over". What matters now, he says, are "recovery" and "growth", "competitiveness" and "flexible working"; all else is obsolete.

These terms could easily replace their equivalents in George Orwell's 1984, for their true meaning is the dictionary oppo-

site. Devoid of social and moral content, they point to the nightmare struggle to survive of ordinary people and to a class war waged at a distance by technocrats of the new world order.

Globalisation has its roots in the Bretton Woods agreement of 1944 which established the World Bank and the International Monetary Fund (IMF) as instruments of global US policy. The Asian Development Bank and the African Development Bank followed: 'international' institutions, in which capital subscription, not membership, determined influence. That is to say, Washington ran them.

Subsequently, Structural Adjustment Programmes, or SAPs, were dreamt up in the late 1970s when American, European and Japanese banks pressured poor countries to borrow petro-dollars accumulated following the boom in oil prices. Chile, under Augusto Pinochet, was the first to have its economy 'adjusted' by a group of economists trained at the University of Chicago under the laissez-faire cult leader Milton Friedman. The World Bank and IMF were proud of the results. This was puzzling. Chile's debt was higher than when the 'Chicago boys' took over. A country which, prior to Pinochet, had maintained a reasonable standard of living for most of its people, was ravaged. Industry was dismantled, the currency was devalued and the majority of Chileans were plunged into poverty.

By the time General Pinochet stepped into the shadows but not out of power, and a civilian government took over, 40 per cent of his people were so poor and their calorie consumption so low that hunger and malnutrition blighted most of them.

In the 1980s, under a plan devised by President Reagan's Secretary to the Treasury, James Baker, indebted countries were offered World Bank and IMF 'servicing' loans in return for the 'structural adjustment' of their economies. This meant that the economic direction of each country would be planned, monitored and controlled in Washington. Industry would be deregulated and sold off; public services, such as healthcare and education, would be diminished. Subsistence agriculture would be converted to the production of foreignexchange earning cash crops. 'Tax holidays' and other 'incentives', such as sweated labour, would be offered to foreign 'investors'. It was the surrender of sovereignty, and without a gunboat in sight.

In similar vein, the temporarily stalled Multilateral Agreement on Investment (MAI) negotiations represent the most important imperial advance for half a century. Once formulated, they will remove the last restrictions on the free movement of foreign capital anywhere in the world, while effectively transferring development policy from national governments to multinational corporations. So Colombia will have to repeal laws against the disposal of toxic and radioactive waste: Brunei, Pakistan and Brazil will no longer be able to stop foreign ownership of agricultural land and areas around national reserves and borders: Venezuela will have to surrender its national film, television and publishing industries to foreign interests. Effectively, they will legitimise the triumph of capital over democracy.

The temporarily stalled Multilateral Agreement on Investment negotiations represent the most important imperial advance for half a century. If successful, Colombia, for example will have to repeal laws against the disposal of toxic and radioactive waste: Brunei. Pakistan and Brazil will no longer be able to stop foreign ownership of agricultural land and areas around national reserves and borders.

In the age of the global economy, 'New Democracy' is now the way. "First and foremost," wrote the commentator Peter Gowan, "a New Democracy is run by strong capitalist proprietors funding the political process and offering electors a choice of leaders who share opinions on most things but have different styles of leadership... At the same time New Democracy makes it easier for multinationals to advance their influence and for the 'global' media to shape public opinion."

The Americanising of political, economic and cultural life is an essential part of the process. Since the Berlin Wall came down, a revision of John F. Kennedy's



Former EU Commissioner Sir Leon Brittan is an enthusiastic promoter of the 'New' (ie corporate) Democracy

famous utterance at the Wall in 1961 might be: "We are all Americans now." In the industrial countries American ideology has been so successfully reconstituted that cultural refugees are now hard to find. "America sets the tone for the world," says the voice over the opening titles of the movie That is a concise way of saying that the world is ruled by the institutions of money, which are the cathedrals of the American Dream. No relationship is now more important than that between a human being and his or her cash. You must be a consumer/customer. Railway passengers and hospital patients are consumers/customers. People who drink water are consumers/customers. Time, music, cultural heritage and the forests are there to be consumed. Moreover, consumers have rights which non-consumers do not share.

The rising number of poor people is the mark of a New Democracy; and Britain is the laboratory to the First World that Chile was to the Third. No modern ideological figure created more poor and more rich so rapidly than Margaret Thatcher. The UN Human Development Report for 1997 says that in no other country has poverty "increased as substantially" since the early 1980s, and that the number of Britons in "income poverty" leapt by nearly 60 per cent under her government.

Thatcher and her successors made Britain into a two-thirds society, with the top third privileged, the middle third insecure and the bottom third poor: a rigid class stratum copied by other former social democracies. So it made sense that she was among the first invited by Blair to Downing Street for 'consultations'.

The gravity of Blair's 'project' is not universally recognised, but I believe it will

be, as the managed adulation recedes and the government's extremism reaches beyond Thatcherism. The Blairites have become the political wing of the City of London and the British multinational corporations and, in natural order, the trusted servitors of European 'central bankism' and American economic and military hegemony. They are indeed more trustworthy and more 'modern' than the Tories, many of whom are still smitten by English nationalism, some even by paternalism. New Labour and its ermine-rack of lords and bankers and downsizers will not allow unprofitable spending on the relief of poverty. After all, the poverty that exists is a condition of their wealth, as it is of the affluence of the middle class.

In Britain, too, it is no longer possible to justify a vote every five years on the basis of lesser-of-two-evils. Like the United States, Britain has become a single ideology state with two principal, almost identical factions, so that the result of any election has a minimal effect on the economy and social policy. People have no choice but to vote for political choreographers, not politicians. Gossip about them and their petty intrigues, and an occasional scandal, are regarded as political news. Not surprisingly, popular participation in general elections – both here and in the US – has dwindled massively.

When in the 1950s, Aneurin Bevan described Parliament as "a social shock absorber placed between privilege and the pressure of popular discontent", he could not have imagined how close to the truth his statement would become.

John Pilger's latest book *Hidden Agendas* is published by Vintage, Random House UK, London.

Editorials A Place in the Country

By Simon Fairlie

How can we rejuvenate the rural economy without destroying the landscape? The answer lies in changing the planning system, to accommodate genuinely sustainable, low-impact development in the countryside.

S hould the overwhelming majority of us live in towns? In the UK, this has become a topical question ever since John Gummer, when he was Conservative Secretary of State for the Environment some three years ago, unveiled projections indicating that another 4.4 million homes would need to be built by 2016, and suggested that, in order to protect the environment, the majority of these should be sited in urban areas.

It is a question that may cause some difficulty for those of use who are concerned to protect the countryside from urban sprawl and yet who feel that the increasing separation of people from nature and natural processes is undesirable. Artificial food, unsustainable consumption, excessive packaging, traffic congestion, light pollution, violent crime, vandalism ... all these, and a host of related problems, can be viewed as symptoms of an urban disease. Should we not welcome the statistics which show that a majority of urban dwellers would prefer to move to a more "green and leafy" environment? Or should we support the view put forward by Friends of the Earth that this process of "counter-urbanisation" would further desecrate the countryside, and therefore we should "debunk the rural image" and "ensure that those returning to our higher density areas outweigh those leaving"?

This is hardly a viewpoint that those of us who are lucky enough to live in the countryside can advance without arousing suspicions of hypocrisy.

Here in Britain, the roots of this dilemma go back to the enclosures which removed a sizeable proportion of the rural population from the land in order to satisfy the demand for labour in the towns occasioned by industrialisation. But let us take up the story in the 1920s, when the increased mobility provided by the motor car allowed people with substantial urban incomes to seek out a place to live in the country. As Clough Williams-Ellis put it:

"Having made our towns with such careless incompetence, those of us who have the means to be choosers are calmly declining to live in them and are now proceeding with the same recklessness to disperse ourselves over the countryside, destroying and dishonouring it with our shoddy but all-too-permanent encampments."

Artificial food, unsustainable consumption, excessive packaging, traffic congestion, light pollution, violent crime, vandalism... all these, and a host of related problems, can be viewed as symptoms of an urban disease.

Increasing opposition to the uncontrolled spread of ribbon development and suburbia led in 1947 to the Town and Country Planning Act which still provides the basis for our present-day planning system. The Act placed severe restrictions on



all forms of building and development in the countryside, other than those associated with agriculture, which was assumed to be beneficial to the rural environment. In one sense the Act was quite successful: it did stem the spread of suburbia and prevent the "Californication" of England's countryside. But in another sense it was a ghastly failure: it was powerless to stop the countryside being ravaged by the very force that was expected to be its saviour – agriculture; and it did not stop the process of counter-urbanisation.

The 'Green Revolution' in farming caused hedgerows to be torn up, woodlands felled, pastures ploughed up and wetlands drained on a scale unparalleled in English history.

Between 1947 and 1997, as agriculture and forestry became industrialised England lost three-quarters of its agricultural workforce. The 'Green Revolution' in farming caused hedgerows to be torn up, woodlands felled, pastures ploughed up and wetlands drained on a scale unparalleled in English history. As farmworkers lost their jobs, they also lost their houses and these were progressively bought up and converted by urban incomers with substantial earnings. If there were no more farmhouses or labourers' cottages available, then the incomers resorted to converting redundant barns. And as the agricultural economy collapsed under the weight of the counter-urban invasion, shops, schools, post-offices and vicarages closed down providing yet another niche for urban refugees. Meanwhile the sons and daughters of those who had once earned their living from the land were squeezed out of the rural property market and herded into 'social housing' in key villages or burgeoning towns.

A state of crisis has now been reached because, in the south of England at least, the reserve of available cottages, barns and redundant school buildings has more or less dried up, while the demand for a "green and leafy environment" has not. So where will the 4.4 million new homes go?

There is, of course, no immediate way in which all those who want to stake out a new home can do so in the countryside without a great deal more damage to the environment. Every effort needs to be made to improve the urban environment in a way that makes the city a more congenial and natural place to live; and every effort needs to be made to rediscover ways in which people (especially young adults) can share houses and so reduce demand.

But there is a way in which a small but significant proportion of the demand can

DYLAN GARCIA/STILL PICTUR

be accommodated in the countryside, and indeed should be because it is needed there.

Whether by coincidence or through some as yet unidentified feedback mechanism, industrial agriculture has come to a crisis at the same point in time as the process of counter-urbanisation which has fed upon it. Surpluses and subsidies can no longer be balanced. After the scandal of BSE and the scare of GMOs, the public has lost confidence, and more and more people are prepared to pay for what they perceive to be healthier food. Prices of conventionally-reared livestock have hit rock bottom, while locally produced organic meat has been unaffected. The past year has seen an impressive increase in the number of farmers converting to organic production, while box schemes for organic vegetables have proliferated and local councils have been competing with each other to attract local producers to their new 'farmers' markets'.

The progress of change in this direction is unlikely to be smooth – there are bound to be hiccups related to fluctuations in economic conditions and prices. But the overall tendency is clear: the public, and indeed virtually every interest group aside from the food industry itself, would like to see farming become more environmentally responsible, healthier, more locally based and less mechanised. People want to see more small-scale family farms, they want the countryside that is associated with this kind of agriculture, and a sizeable and fairly well-off proportion of the community is prepared to pay for it.

But the cost does not only mean paying a higher price for food. It also involves finding accommodation for the additional workers needed to maintain a more labourintensive system. At the moment an average farmhouse with about 20 acres of land in the South of England costs in the region of £250,000 - there is no way that a family deriving their income from organic vegetable production or a similar venture could hope to pay off the mortgage on such a property. The people who can afford to pay these prices are mainly middle-class urban refugees seeking the good life, who also happen to represent a significant proportion of the people creating the demand for better food and other rural goods. Even if it were politically acceptable, reclaiming these buildings for the agricultural economy could be counter-productive.

The only alternative is to build more dwellings and agricultural buildings. Such buildings will need to be appropriate to the landscape, of environmentally low impact, and sustainable as regards the wider global ecology. This is not a particularly difficult task. Generations of builders prior to industrialisation managed to do it without



Unsustainable development in the British countryside

even trying; and nowadays there are architects, engineers and builders all over the country drawing up designs for sustainable rural housing, workplaces and communities.

The main obstacle to this happening is the planning system which tends to go into a state of shock when presented with the prospect of another dwelling in the open countryside. Applications by prospective farmers, smallholders or forestry workers for planning permission on a bareland holding (i.e. a holding where the original buildings have been sold off separately) are usually greeted with suspicion, rather than encouragement. Instead of welcoming a project which aims to improve the management of neglected land and contribute to a thriving land-based local economy, planners question the need for the building, seek evidence of an income higher than that sought by the applicant or advise that the applicant commute to the holding from an unaffordable house in a nearby village.

While the planners are right to try to weed out bogus applications from speculators whose aim is to build a house in the countryside on an agricultural pretext and sell it for a handsome profit, they are not doing the rural economy or the environment any favours by discouraging the construction of low-impact homes and workplaces on sustainably managed holdings. The problem is that the planning system is at present ill-equipped to distinguish

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Fifteen Criteria for Rejuvenating the Rural Economy

From *Defining Rural Sustainability* published by The Land Is Ours

- Any new rural development project should have a management plan which demonstrates how the site will contribute towards the occupiers' livelihoods, and how the objectives cited in items 2 to 14 below will be achieved.
- The project should provide affordable access to land and/or housing.
- The project should provide public access to the countryside.
- The project should demonstrate how it will be integrated into the local economy and community.
- The project should demonstrate that no activities pursued on the site shall cause undue nuisance.
- The project should have a strategy for the minimisation of motor vehicle use.
- The development and any buildings associated with it should be appropriately sited in relation to local landscape, natural resources and settlement patterns.
- New buildings and dwellings should not be visually intrusive and should be constructed from materials with low environmental impact, preferably from locally-sourced materials.
- The project should be reversible, insofar as new buildings can be easily dismantled and the land easily restored to its former condition.
- The project should plan to minimise the creation of waste and to reuse and recycle as much as possible on site.
- The project should have a strategy for energy conservation and the reduction, over time, of dependence on nonrenewable energy sources.
- 12. The project should aim over time for the autonomous provision of water, energy and sewage disposal and should make no demands upon the existing infrastructure.
- Agricultural, forestry and similar landbased activities should be carried out according to sustainable principles.
- 14. The project should have strategies and programmes for the ecological management of the site, including:
 (a) improvement of soil structure;
 (b) conservation or enhancement of semi-natural habitat;
 (c) efficient use and reuse of water;
 (d) planting of trees and hedges.
- 15. The project should show that affordability and sustainability are secured, for example, by the involvement of a housing association, co-operative, trust or other social body.



between the one and the other. Planning Policy Guidance 7: The Countryside boldly proclaims that "sustainable development is the cornerstone of both the Government's rural policies and its planning policies". But there is no guidance in PPG7 or in any other government document as to how sustainable developments in the countryside can be identified, encouraged, monitored and secured.

In order to fill this policy vacuum, the Rural Planning Group of the land reform pressure group The Land Is Ours has recently published a report entitled Defining Rural Sustainability. The first part of this report outlines a set of 15 model criteria for assessing developments associated with sustainable land-based rural projects. These criteria cover social issues such as affordability and public access, the impact upon the local environment and wider environmental concerns such as energy use and transport (see the accompanying box for the full criteria).

The second part of the report provides three model local-plan policies which are designed to facilitate development on sustainably managed holdings without any radical departure from existing planning guidance. These policies are backed up by a number of model conditions and legal agreements which could be used to ensure that a sustainable development stays sustainable and which close up loopholes which might be exploited by speculative builders masquerading as sustainable developers.

Judging by the reaction to this document so far, the Rural Planning Group (now renamed Chapter Seven) is convinced that it is only a matter of time before these criteria and policies, or something like them, become incorporated into a planning system which nearly everyone agrees is sorely in need of a new vision.

When they are fully incorporated, the repercussions will be considerable. Building land will become more accessible and cheaper for those wishing to work, full- or part-time, in a land-based rural economy. This will help to underwrite sustainable farm and forestry holdings which might otherwise be marginal. People aiming to farm and build sustainably would therefore be able to pay somewhat over the odds for agricultural land and conventional farmers selling land would have an interest in seeking out buyers in the sustainable/lowimpact sector. Planners too would have an interest in seeing this sector expand since they would have considerably greater control over it than they do at present over conventional farms.

The more people there are working upon the land, the more shops, pubs, workshops, offices, schools, clinics, churches and other facilities there will need to be to service them.

Any substantial increase in the numbers of sustainably managed, labour-intensive agricultural units would have a knock-on effect on the rural economy. The more people there are working upon the land, the more shops, pubs, workshops, offices, schools, clinics, churches and other facilities there will need to be to service them; and if a burgeoning sustainable sector of the agricultural economy establishes successful mechanisms for restraining the use of the private car, then public transport will become more viable. Within this context, the counter-urban middle-classes seeking a place in the country will no longer be so dependent upon commuting to the city for their income: there will be a place for them, too, in a thriving and balanced rural community.

Defining Rural Sustainability: 15 Criteria for Sustainable Developments in the Countryside together with Three Model Policies for Local Plans can be obtained by sending a cheque made out to "Chapter Seven", 20 St Michael's Road, Yeovil, Somerset, price £5 or £3 to low-waged people, including p&p. It is also available on The Land Is Ours website: www. Oneworld.org/tho. Low-Impact Development, by Simon Fairlie, published by Jon Carpenter, is also available from Chapter Seven, price £10.

Cracking Down on Corporate Crime

By Russell Mokhiber.

'Cracking down on crime', is the top priority of most governments. Billions are spent annually on tackling criminals, but of those billions, little if any is spent on bringing corporate criminals to justice. Although it is corporate crime which most fundamentally affects society, transnational corporations are allowed to get away with murder. O nly the most myopic of observers would deny the obvious: that large, undemocratic corporations are the dominant institutions of our time and are inflicting a kind of damage on society that individuals acting alone could not conceive of inflicting.

From the destruction of inner city rail transit (General Motors was convicted of this crime in the 1950s and paid a \$5,000 fine) to unprosecuted and perhaps unprosecutable mass occupational homicide (125 workplace-related deaths an hour worldwide), pollution, corruption and the unconscionable tampering with life through genetic engineering – the list is endless.



Corporate crime: a child victim of Agent Orange.

And yet the dominant voices of society deny the evidence and proclaim the oppposite: that individual criminals inflict more damage on society than corporate criminals.

Charles Krauthammer, a *Washington Post* columnist and a corporate conservative has written, for instance, that "crime is generally an occupation of the poor." Richard Cohen, a *Washington Post* columnist and a corporate liberal believes that "young black males commit most of the crimes in Washington, D.C." James Glassman, another *Washington Post* columnist writes that the rich "don't commit the violent crimes that require billions to be spent on law enforcement."

And the American people, fed an unending stream of such garbage, are likely to agree.

Ask any American to name a crime and most likely he or she will say: burglary, robbery or theft. Most likely he or she will not say: corporate fraud, pollution, corporate homicide, price-fixing, or corruption of the government regulators.

Every year, the US Justice Department puts out a big fat book-length compilation of crimes statistics. It's called: "Crime in the United States". But by "Crime in the United States," the Justice Department means "Street Crime in the United States".

The Justice Department has no equivalent publication called "Corporate Crime in the United States". This despite the fact that there is an emerging consensus among corporate criminologists that corporate crime and violence inflict far more damage on society than all street crime combined.

The Federal Bureau of Investigation (FBI) estimates, for example, that burglary and robbery – street crimes – cost the nation \$3.8 billion a year. Compare this to the hundreds of billions of dollars stolen from Americans as a result of corporate and white-collar fraud.

Health care fraud alone costs Americans \$100 billion to \$400 billion a year. The savings and loan fraud – which former Attorney General, Dick Thornburgh, called "the biggest white collar swindle in history" – cost them anywhere from \$300 billion to \$500 billion. And then you have your lesser frauds: auto repair fraud, \$40 billion a year securities fraud; \$15 billion a year – and on down the list.

Recite this list of corporate frauds and people will immediately say to you: but you can't compare street crime and corporate crime – corporate crime is not violent crime.

But in fact, corporate crime is often violent crime.

The FBI estimates that 19,000 Americans are murdered every year by street criminals. Compare this with the 56,000 Americans who die every year at work or

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from occupational diseases. On-the-job deaths are often the result of criminal recklessness. They are sometimes prosecuted as homicides or as criminal violations of federal workplace safety laws. Environmental crimes often result in death, disease and injury.

And, the vast majority of corporate crime and violence goes undetected or unprosecuted for a number of reasons. Firstly, corporations tend to 'win' (with the help of generous research grants and the promise of endless job opportunities) the backing of most government and university scientists, and it is they who are charged with legitimising (often unsafe) products. Secondly, unlike all other criminal groups in the US, major corporations have enough power to define the law under which they live and to influence prosecutors not to bring criminal charges.

This point has been made over and over again, most recently in the book, *Toxic Deception: How the Chemical Industry Manipulates Science, Bends the Law and Endangers Your Health* by Dan Fagin, Marianne Lavelle and the Centre for Public Integrity (Common Courage Press, 1999), where the authors show how the chemical industry has overpowered the lawmakers and the police (euphemistically known here as "regulators") and forced dangerous chemicals onto the market.

Here's a case in point: The chemical companies are required by federal law to make any scientific findings available to the government if a chemical already on the market is found to pose a "substantial risk of injury to health or to the environment." *Toxic Deception* found that the



Corporate crime: industrial waste outlet.

industry frequently acted in "bad faith" in this regard. In 1991 and 1992 the despairing Environmental Protection Agency, knowing that there was little they could do to enforce the law, offered amnesty from big-money fines to any manufacturer that turned in health studies they should have provided under the law. In response chemical corporations turned over more that 10,000 studies showing that their products already on the market pose a substantial risk. In this way, corporations were able to avoid crippling fines.

Weak law, weak lawenforcement, no "crime."

There is a debate now raging among activists in the United States: what to do about an ever-expanding wave of unprosecuted corporate crime and violence? There are those activists who engage in battles against individual corporate predators, who seek to leverage power to change the ways of individual corporations, who seek to get regulatory reform legislation, who meet with corporations, who praise them when they do good and condemn them when they do bad. This has been the *de facto* model of activism for the past 30 years.

But there is a new breed of activist roaming the land. These activists believe that there is something fundamentally wrong with the large corporation itself. These activists believe that it is not what multinational corporations do wrong that is the problem – it is corporations that are the problem.

These activists believe large corporations as they exist today are fundamentally undemocratic and cannot be reformed. These activists question whether corporations should be considered legal persons with the same rights of you and me and other living human beings. They question the very nature of the corporation.

Hope for re-igniting a democratic campaign against dehumanising corporate power lies with this second camp led by Richard Grossman and his colleagues at the Program on Corporations, Law and Democracy.

For the past couple of years, Grossman and his colleagues have been travelling the country, encouraging activists of all stripes to begin asking fundamental questions about citizen control of corporations, to research the history of corporations, and to begin to question corporate control over the citizenry.

Grossman and his colleagues believe that instead of focussing on one corporate crime at a time, we must begin to question the legitimacy of the corporate form.

In each state where they are organised they are digging through the history books and finding that at the beginning of the corporate era more than 150 years ago we the citizens controlled corporations.

Through the corporate charter, citizens imposed full liability on shareholders for corporate wrongdoing (today, shareholder liability is limited), we limited the life span of corporations (today, they have unlimited life), and we revoked their charters when they did things we told them they couldn't (today, the corporate elites laugh at the possibility or corporate charter revocation).

And back at the turn of the century, we understood the corporation to be fundamentally different from you and me – not something deemed to have the legal rights of a human citizen.

Here is Williams Jennings Bryan speaking to the 1912 Constitutional Convention in Columbus, Ohio. Ask yourself: Who today would speak in such a manner? (And Bryan was not alone – he reflected a healthy cultural distaste for corporate power.)

Grossman and his colleagues believe that instead of focussing on one corporate crime at a time, we must begin to question the legitimacy of the corporate form.

"The first thing to understand is the difference between the natural person and the fictitious person, called the corporation. They differ in the purpose in which they are created, in the strength which they possess, and in the restraints under which they act. Man is the handiwork of God and was placed upon earth to carry out a divine purpose. The corporation is the handiwork of man and was created to carry out a moneymaking policy. There is comparatively little difference in the strength of men. A corporation may be one hundred, one thousand, or even one million times stronger than the average man. Man acts under the restraints of conscience, and is influenced also by a belief in the future life. A corporation has no soul and cares nothing about the hereafter."

The corporate culture is a century or more in the making. It will take a while before we figure out how we got ourselves into this soup – from a situation where we controlled corporations, to where corporations are controlling us.

It will take a while longer to figure how to get out of it.

Russell Mokhiber is the editor of *Corporate Crime Reporter*, a legal weekly based in Washington D.C. He is co-author, with Robert Weissman, of *Corporate Predators: The Hunt for Mega-Profits and the Attack on Democracy* (Common Courage Press, 1999).

Seeds of Conflict

By Andrew Kimbrell

"Seeds are software. And we have the seeds." – Alfonso Romo Garza, owner of Empresas La Moderna, a Mexico-based seed company that controls 25 per cent of the global vegetable seed market.

Thirty-four-year-old Marvin Redenius is president of a small farmsupply dealership in Belmond, Iowa, USA. Redenius is also a man of principle and does not scare easily. Many are now seeing him as an unlikely hero who could single-handedly halt the increasing global corporate control of the world's seeds. It all started last year when his small company, Farm Advantage, resold corn seed 'belonging' to the biotechnology firm Pioneer Hi-bred International, and found itself being sued by pioneer for violating its patents.

Redenius and his lawyer decided to fight the Pioneer (now merged with DuPont) lawsuit, and this David v. Goliath battle is now sending shock waves through global agribusiness. What bothers the transnationals most about the suit is Redenius's straightforward defence. He claims that plant patents are invalid and illegal, because they contravene a law passed by the US Congress in 1970 which is still in effect and which expressly prohibits the

If Farm Advantage's defence is successful, companies such as Pioneer will no longer be able to seek patent-protection for plants. Moreover, the thousands of patents on plants already granted (including virtually all genetically engineered plant varieties) would be invalid.

patenting of any plants grown from seed. If Farm Advantage's defence is successful, companies such as Pioneer will no longer be able to seek patent-protection for plants. Moreover, the thousands of patents on plants already granted (including virtually all genetically engineered plant varieties) would be invalid.

Clearly, the international stakes in this suit are high. Today the world's top ten seed companies control approximately 32 per cent of the worldwide \$23 billion seed trade. Most often they establish economic



Could the days of patenting wheat be drawing to a close?

control of these seed varieties by patenting them. Patenting is also the key to biopiracy, as the major seed companies find and expropriate traditional indigenous varieties of seed, "improve" them, often by making minor alterations, and then patent and commercialise them. This eventually results in the large transnational corporations selling back the patented seeds to the communities that initially provided them. Biotechnology companies are also highly dependent on patenting to maintain absolute control over the use, sale and reproduction of their novel plant varieties.

The patenting of seeds, or any life form, is relatively recent. Over two hundred years ago the United States passed its first Patent Act. From that time until 1980, nearly five million patents were granted. None was for a life form. It was understood that life forms were "products of nature" that could not be patented. However, in 1980, a 5-4 decision in the US Supreme Court - the 'Chakrabarty case' changed the patenting-of-life picture in America, and consequently across the world. This unfortunate and misguided decision allowed for the patenting of a genetically-engineered bacterium, engineered by General Electric to eat oil. While the Chakrabarty decision was the first to allow the patenting of a life form, the decision was vague on how far the extension of life-patenting could go. It also explicitly noted that life forms could not be patented if the US Congress had provided otherwise.

The granting of full patent-protection for seeds in the USA began in 1985 when the US Patent and Trademark Office (PTO) unilaterally, and without Congressional approval, expanded the holding in Chakrabarty and extended full patent-protection rights to sexually reproducing plants (plants grown from seed). This PTO regulatory action seemed to openly contradict a law passed by the US Congress in 1970. At that time Congress enacted the Plant Variety Protection Act (PVPA) which provided a means for plant breeders to protect their new plant varieties grown from seed. However, the PVPA specifically rejected full patent-protection for these plants. Instead it enacted a significantly less monopolistic form of intellectual property protection - a plant variety certificate which provides numerous exceptions to the protection, including a farmer's exemption allowing growers to save and reuse seed and a researcher's exemption allowing plant breeders to use a protected plant variety to create new varieties.

The Farm Advantage case is the first to challenge the PTO decision on plantpatenting as an illegal usurpation of the powers of Congress. In the 13 years in which it went unchallenged, the PTO decision revolutionised plant-patenting, allow-

Today the world's top ten seed companies control approximately 32 per cent of the worldwide \$23 billion seed trade. Most often they establish economic control of these seed varieties by patenting them.

ing for companies such as Pioneer to obtain full Patent Act protection over their new plant varieties. Plant varieties could now be patented in exactly the same manner as different varieties of toaster or tennis racquet. The PTO now treated plants no differently from machines.

For over a decade the United States has been trying to globalise the 1985 PTO decision and force full plant-patenting on all the nations of the world. It sees this patenting push as key to ensuring international enforcement of US plant patents and for its ability to "pirate" and patent germplasm of developing countries. US pressure for plant patents may have reached an apex in 1994 during the Uruguay Round of negotiations of the

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General Agreement on Tariffs and Trade (GATT). Then, the United States insisted that the trade agreement provided intellectual property protection, including protection for plants. The resulting Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS), arrived at only after significant negotiations, was only a partial success for the United States. TRIPS did mandate the patenting

of microbes but (under Article 27.3[b]) allowed for nations to avoid patenting plant varieties, specifically allowing alternatives to such patent-protection.

Many countries have taken advantage of this Article 27 exception and passed legislation that provides alternative protection for plants. This raises the ire of the United States which continues to oppose this exception and exert significant pressure on the international community to allow for the patenting of seed varieties. The excep-



tion comes up for a mandated review in 1999 by the TRIPS Council. It is certain that the United States will strongly argue that this exception be eliminated.

With the future of 21st-century agriculture at stake, it is clearly time for the larger activist community to become involved in the fight against the patenting of seeds. The next months will be critical. Oral arguments in the Farm Advantage case, now at the Court of Appeal for the Federal Circuit, will probably take place this summer, with

The Next GM Threat: Frankenstein Forests

a decision in the case likely by late autumn. Meanwhile, the World Trade Organisation's ministerial meeting in Seattle in November 1999 will be conducting the five-year review of the plant-patenting provisions of TRIPS. The significance of these decisions for the future of agriculture, biodiversity and the small farmer, both in the United States and the world, is hard to overestimate. Increased

international grassroots pressure on legislators and regulators urging them to oppose plant-patenting, a series of organised court challenges to plant patents, new alliances between farmers and consumers against corporate control of seeds are some of the steps urgently needed if the agribusiness drive to patent the world's seeds is to be halted.

Andrew Kimbrell is Director of the International Center for Technology Assessment, in Washington D.C.

By Hugh Warwick

It had to happen: geneticists are turning their attention to trees. After all, compared to domestic flora and agricultural crops, trees are still largely untouched, so there is a great deal of room for 'improvement'. For example, while it has taken some 5,000 generations of traditional breeding to turn teosinte into maize, even the most altered trees lag some 4,996 generations behind. So imagine what a few decades of genetic tinkering could achieve...

But this is not something new. While newspapers have been full to bursting with the GM food furore, the new wave of 'foresters' have been quietly getting on with the business of preparing for the greatest ever change to our planet's trees. And it has gone way beyond the laboratory. There is already at least one test plot in the UK, there are the early stages of plantations in China and Brazil, and test plots in Belgium, France, Spain, US, Canada, New Zealand, Australia and Indonesia.

As the environmental movement wakes up to the coming threat of GM trees, it will see a potential disaster on the same scale as the recent introduction of GM crops.

So what can we expect if the future unfolds as the biotechnologists predict? Already they are working on speeding up the time it takes trees to reach maturity. Their slow growth rate has always been one of the stumbling blocks in any attempts to domesticate the tree. Achievements in traditional plant breeding have brought the rotation time for eucalyptus down from 15 to seven years. The geneticists hope to halve this again.

As the environmental movement wakes up to the coming threat of GM trees, it will see a potential disaster on the same scale as the recent introduction of GM crops.

Then, of course, there are the betterknown types of genetic tinkering: engineering herbicide tolerant trees, for example, and instilling an ability to produce pesticides, to be protected by terminator technology. But serious questions are already being asked. Will there be safeguards against the cross-pollination of engineered trees with their wild relatives? If terminator technology is not employed, how will the many and ingenious techniques that trees have evolved to spread themselves be contained? And what will the impact of genetically-modified plantations be on neighbouring forests? Will disenchanted insects just move onto the easier prey of un-engineered trees?

Some of the most sophisticated work is concentrated on altering the lignin content of trees. Lignin is the component in the cell wall that gives a tree the rigidity and toughness needed to withstand environmental stresses. It is also something that needs to be removed in the process of making pulp for paper. This part of the papermaking process is one of the most expensive in terms of energy and pollution, so engineering trees with less lignin could even carry with it environmental benefits. But many balk at the idea of industry tailoring the living tree to the needs of the end product: and I still have the alarming vision of what one campaigner described as 'wobbly trees'.

And, as with any biotechnology development, there are serious impacts for the environment. Even after a tree dies, it plays a role as an ecosystem in itself, forming a three dimensional structure for a myriad of micro-beasties. The lignin content of the wood slows the rotting process, and thereby increases the length of time it can maintain this vital role. It is also worth bearing in mind that lignin plays an important role in the tree's defences against herbivores – it makes the plant harder to digest. Will this mean that low-lignin trees become fast food?

The longevity of trees leads to all sorts of questions about their interaction with the environment. For example, the basic ecology of traditional forests – in particular the soil interactions – are very poorly understood. How will an altered tree further affect the environment? A field of maize is in the ground for one season. Even the fastest growing trees count their lives in years and may still take decades to reach maturity.

And this raises one of the key concerns. It is well recognised that the results of the technology that creates GM organisms are fragile. And one of the factors affecting this fragility is the stress the organism is placed under. Trees, many of which need to survive 30-80 years, are going to be exposed to the stresses and strains of the environment on a far greater scale than any crop, with unknown results.

The concerns arising about GM trees are heightened by the ubiquity of wood products. As the forestry industry is keen to remind us, trees, and their products, surround us every day of our lives. There are many edible tree products, such as fruit and nuts, which will raise the same health concerns as are currently being expressed about GM crops. Already there is a test field site of GM oranges in Valencia, Spain, and there are tests underway on papaya and walnuts in the US.

Another reason for concern was highlighted by the announcement on April 6th 1999 that Fletcher Challenge Forests, International Paper, Monsanto and the Westvaco Corporation are entering a "Forest Biotechnology Joint Venture to produce and market tree seedlings that will improve forest health and productivity for the forest market worldwide." The four companies will contribute \$60 million over five years to the joint venture. They will be working with the Genesis Research and Development Corporation Limited, a New Zealand biotechnology research company. The joint venture will also acquire forestry intellectual property from Genesis.

None of the participating investors have a particularly good environmental record, and the details of the joint venture should give more cause for concern. The stated aim is to make the improvements for the 'forest market'. There is not even a pretence at trying to improve the lot of people already affected by industrial tree plantations. And the focus for the research will initially be to develop eucalyptus and poplar species, Radiata pine, loblolly pine and sweetgum, all principal components of the pulp industry.

When the issue of forest biotechnology is looked at closely, it also becomes obvious that many of the most significant social and environmental problems besetting countries in the South can be linked to the rise of biotech trees. 'Traditional' intensive forestry has been impacting on the lives of local people for decades, and the spectre of GM trees will make the problems worse rather than solve them. Industrial tree plantations are already responsible for taking the place of forests and local people's land. These monocultures can never replace the value of forest that has been removed. They are planted with the simple goal of filling the insatiable need for pulp.

There may be some GM-tree applica-

Prometheus, having recieved the gift of knowledge from the gods, attempted to improve upon their work.

tions that could be of benefit to the poorer people of the world. For example, it is possible to increase the calorific value of wood, so that it generates more heat when burnt; this is highly significant as it is estimated that some 55 per cent of global

The most alarming connection that emerges from this biotech vision is its relationship with international trade rules

wood production is purely used for energy. But, as with GM crops, the technology is expensive, and it is unlikely that the results of the research will be given away. As ever, the issue of who controls the technology arises – and while global corporations control it in the interests of their profit margins, it is unlikely that any possible beneficial applications of GM technology on trees will be used. It is not just the pulp and paper industry that will reap benefits from the spread of GM trees: some other key investors are oil and automotive corporations. The Kyoto Climate Change Convention implies that the more trees you plant into the ground, the more oil you can take out of it. Under this logic, planting fast growing trees will allow oil companies to exploit oil reserves all the quicker and ease any 'carbon debts' run up by the car manufacturers as the roads gridlock.

But the most alarming connection that emerges from this biotech vision is its relationship with international trade rules. Come November, as the Millennium # Round of the WTO meets in Seattle, many 2 of the most vital regulations designed to protect the environment from the ravages of neo-liberalism will be under attack. For example, if the recent Global Free Logging Agreement [see The Ecologist Vol.29 No.3, p.181] is ratified, perceived barriers to free trade, such as national safeguards against the introduction of GM trees or invasive plant species will be outlawed. It will also make it easier for more land to be accessed by GM plantations. And it could see the demise of labelling initiatives such as the Forest Stewardship Council, which included in its founding principles the statement that the "use of genetically modified organisms shall be prohibited". While this passed by with little comment in 1994, it now seems prescient.

The first commercial plantations of GM trees have yet to get going. But if and when they do, they will herald a quantum leap in our relationship with trees. And the issues raised are far greater than just the trees themselves. The way that timber and pulp are produced around the world already raises many important ecological and social concerns and the arrival of a genetic component to this will not make these problems go away. Instead, the arrival of GM technology in our forests will just add yet more pressure to an already fragile world.

Hugh Warwick is a freelance journalist and editor of *Splice*, the magazine of the Genetics Forum.

To subscribe to Splice, contact Genetics Forum, 94 White Lion Street, London N1 9PF. Telephone: 0171 837 9229; Email geneticsforum@gn.apc.org; Website www.geneticsforum.org.uk

Further information about GM trees can be obtained from the Womens Environment Network (WEN) publication The Gene Files Resource and Action Pack. Available from WEN, 87 Worship Street, London, EC2A 2BE.

A new pressure group, GE Free Forests (GEFF) can be reached via email, at geffcoalition@hotmail.com.

Thoreau's Country

Journey through a Transformed Landscape DAVID R. FOSTER



In 1977 David Foster took to the woods of New England to build a cabin with his own hands. Along with a few tools, he brought the journals of Henry David Thoreau. Foster was struck by how different the forested landscape around him was from the one Thoreau described more than a century earlier. Part ecological and historical puzzle, this book brings a vanished countryside to life

and offers a rich record of human imprint upon the land. Foster adds the perspective of a modern forest ecologist and landscape historian, using the journals to trace themes of historical and social change.

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Faces in the Forest

The Endangered Muriqui Monkeys of Brazil KAREN B. STRIER

WITH A NEW INTRODUCTION



The woolly spider monkey, or muriqui, is one of the most threatened primate species in the world. Because of deforestation in their natural habitat-the Atlantic coastal forests of southeastern Brazil-the muriquis are confined to less than 3 percent of their original range. This book traces the natural history of the muriqui from its scientific discovery in 1806 to its cur-

rent, highly endangered status. Karen Strier provides a case study of this scientifically important primate species by balancing field research and ecological issues. 21 halftones, 14 line illus. • \$16.95 paper

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What would Jonathan Swift's famous creation make of the infatuations of the modern world? This classic parody, written in Swiftian English, first appeared in The Ecologist in 1971. Times may have changed since then, but our obsession with motor vehicles has, if anything, deepened. Gulliver's travels in the Land of Automobilia will be a regular feature in future issues.

Gulliver in utomobilia

By Nicholas Gould

pon leaving Laputa, I passed into the Island of Automobilia, the People whereof are to a marvellous Degree busied with the Conveyance of Goods and Persons about the Kingdom. To this End, they are continually engaged in the Constructing of numerous and wide Roads. Whereon they are borne at great Velocity in Carriages all of iron: the which are propelled, without Aid of Horses, by the Combustion of a volatile Fluid (so my guide informed me, though I understood his Meaning but ill). These Carriages the infatuated Natives hold in such high Esteem, that they are blind to all the Evils attendant upon their Employment: for I was assured, that the Increase of Highways doth annually deprive the Realm of Cornland and Pasture equal to the tenth Part of a County: that their near Vicinity is rendered well-nigh intolerable by the Effusion of noxious Vapours and ceaseless Reverberaton of the inward Parts of the Engines of conveyance: and that these Molochs of the Highway devour annually, without Respect for Age or Sex, as many Persons as perished in the Engagements at Blenheim and Malplaquet. But all these Inconveniences are by the enthusiastic Populace deemed of very small Account, so be it only that Persons of ample Means may with all Expediency travel whithersoever Need or Whim demand.

I was informed also that there were anciently in this Land many noble Cities, diversified by the Splendour and Variety of their Edifices, both public and private; but of late the Rulers of the Kingdom have been at Pains to undo the work of their Predecessors, by laying waste a large Part of each City for the Passage and Housing of Carriages. The Streets in particular are become very Rivers of Death, Cocytus and Phylegethon infinitely reduplicated; so that Mothers fear to give their Children Leave to go abroad unattended, and aged and impotent Persons need but leave their Dwellings, to set their very Lives at Hazard. Thus for this unhappy Land is the Prophecy of Nahum fulfilled, which he spoke against Neneveh: "The Chariots shall rage ion the Streets, they shall jostle one against another in the broad Ways, they shall run like the Lightnings". And yet, this dolorous Fate is not the work of barbarous and hostile Invaders; rather is it devised by the government, and connived at by well-nigh the whole Populace, of this fevered and immoderate Nation.



NEWS & CAMPAIGNS by Lucinda Labes

Cloners stumped by nature

Dolly the sheep, the world's first clone, appears to be ageing prematurely. And elsewhere, attempts to clone monkeys are failing.

US Scientists at the Oregon Regional Primate Research Centre, the world's only laboratory attempting to clone primates – in this case, monkeys – are being defeated. The clones rarely survive past the 16-cell embryonic stage. And it is not just beginner's luck; cloners across the globe are failing in their attempts to produce

carbon copies of healthy animals. Even in the most highly respected laboratories, half of all cloned foetuses harbour serious genetic disorders, from which most die before birth. Others succumb just days or weeks after being born, dying suddenly and mysteriously after a seemingly healthy start.

Now scientists believe they have come up against nature's in-built resistance to cloning. They suspect that a competition played out on a molecular level by the mother and father's genes for presidency over the genetic makeup of the baby is a vital part of the reproductive process. This biological mechanism, known as imprinting, creates balanced male and female determinations within the embryonic cells. For example, male genes want the baby to be as big as possible, to ensure its continued survival past the womb. So they instruct the embryonic cells to make the woman provide a big placenta. But the female, who doesn't want to be robbed of all her nutrients, instructs the cells to make a smaller placenta.

Scientists believe that many of the defects that they have been finding can be explained by the inability of the cloning process to provide proper imprinting patterns. Dr James Robi, of the University of Massachusetts, tried to create 13 calf embryos. Of these, half had major genetic flaws, four died in the womb, one died at birth and two survived only briefly. Dr. Robi also discovered that most of the clones had severely abnormal lungs and enlarged hearts. Others had livers that were full of fat. But the most noticeable defect was the appearance of oversized placentas that were filled with fluid. Flaws like these, the likely consequences of single parent imprinting, kill both the embryo and carrier mother.

Last month, in a further blow to cloning laboratories, Dolly, the world's first cloned sheep, was discovered to be geriatric before her time. Although she looks perfectly healthy, abnormalities within her cellular make-up spell a grave future for the celebrity sheep. Scientists believe that Dolly, who should have been two years old last February, may actually be the same age, genetically, as the six-year-old ewe from whom she was cloned.

Trade Treaty Trickery

The EU and Mexico have agreed a farreaching, and potentially disastrous, free trade agreement.

The Global Agreement on Free Trade, Political Partnership and Co-operation was ratified by the European Parliament on 6 May this year without any transparency or popular discussion. This ominous treaty contains many of the central tenets of the notorious Multilateral Agreement on Investment (MAI).

Controversial measures like the liberalisation and deregulation of agriculture, forestry and intellectual property rights have been endorsed, and multinational corporations have no obligations to ensure set standards for workers' or indigenous people's rights.

Neither do investors have to guarantee that they will leave their host country in the same environmental and social condition in which they found it. Instead, the treaty provides companies with increased powers over local governments, which can be held accountable for any actions that are deemed a restriction of 'free' trade.

Very few people have even heard of this new treaty, let alone understand its implications. A coalition of NGOs from both Mexico and Europe have denounced the treaty, and the way it was negotiated.

Environmentalists Shame Unscrupulous Credit Agencies

Secretive financial agencies are funding development projects that more publicly accountable institutions dare not touch.

Export Credit Agencies like Japan's Export-Import Bank (Jexim) regularly fund projects that displace indigenous people, degrade tropical forests and pollute the atmosphere with greenhouse gases. But whilst large development fund organisations like the World Bank have adopted (nominal) environmental standards, ECAs are quick to approve bottom-of-the-barrel projects that fail to meet international guidelines. Now environmentalists are calling for action to regulate these unscrupulous organisations.

Take the Three Gorges Dam project in China. When the World Bank and the US export credit agency refused to provide funding for the environmentally and socially sensitive scheme, smaller, less reputable agencies queued up to take their place. Similarly, when thousands of outraged protestors convinced the World Bank to pull out of the Narmada Dam project in India, the German ECA Hermes was quick to take over.

In 1997, ECAs subsidised 10.4 per cent of world trade, over half of which went towards large infrastructure projects in developing nations. According to the IMF, 20 per cent of all developing nation debt is now owed to ECAs – a greater amount than that owed to the World Bank and IMF. And whilst the volume of trade facilitated by the multilateral institutions has remained fairly stable, between 1988 and 1996, ECA lending soared by 400 per cent.

In March, 45 NGO representatives met in Washington to discuss a comprehensive report on the credit agencies. They have called on G-8 leaders to implement uniform global lending standards for all OECD nations' export, credit and investment insurance agencies within the year.

For a copy of the report, A Race to the Bottom: Creating Risk, Generating Debt and Guaranteeing Environmental Destruction, please contact Bruce Rich, Environmental Defence Fund, US, bruce@edg.org, Tel. + 202 387 3500.

A Forest too Far

The logging industry is threatening endangered primates as never before.

The global logging industry has long been implicated in the wide-scale slaughter of forest wildlife. But as tree-felling continues to open up huge areas of formerly inaccessible forest, the slaughter of endangered species is accelerating.

In Central Africa, 'bushmeat' is being traded on an unprecedented scale. Every day, wild elephant, deer and endangered monkey carcasses are dragged down the new logging roads. In the Congo, communities based around 'open' forests are selling six times more wild game than villagers living beside untouched areas. Last year, Africa sold one million metric tons of bushmeat.

Because logging companies are often the only institutional bodies present in remote forest regions, the World Conservation Society is now urging them to encourage the responsible management of forest game. But loggers haven't just facilitated the wide-scale slaughter of forest mammals. Often, they are at the forefront of the abuse.

In Indonesia, loggers have infiltrated a 'protected' orangutan reserve in the Tanjung Puting National Park. Although companies have been cutting trees in the protected forests for some time, they used to do so under the cover of darkness. Now,



Orangutans at the Tanjung Puting rehabilitation centre, Borneo.

the whine of chainsaws can be heard throughout the day, as the destruction edges nearer to the world-renowned orangutan rehabilitation centres at Tanjung Harapan and Camp Leakey. Loggers have even started using the rehabilitation centres as loading bays for their timber. Many orangutans have recently fled in terror, and forest wardens are too frightened of encountering the aggressive loggers to carry out the centre's vital work properly. Locals are urging the international community to write to Indonesia's Minister of Forestry, Dr Muslimin Nasution, urging him to stop the logging in Tanjung Puting National Park. Fax the Minister on + 62 21 5700226.

Money for Nothing

A British farmer has been fined for failing to harvest crops that nobody wants

The European Union's ridiculous agricultural policies – which promote the spread of chemical monoculture farming and regularly produce vast food surpluses – were thrown into sharp relief last month when a British farmer, who earns £15,000 a year to grow a crop that nobody wants, was fined for not harvesting it.

For several years, the EU has paid Richard Goldsworthy to produce 100 tons of linseed fibre flax, which he is then ordered to destroy. This year, Goldsworthy decided to save himself the £1,300 cost of harvesting the crop by ploughing it in.

When EU inspectors discovered the deed, he was taken to court, charged with obtaining his subsidy by deceit. The judge, who described the case as "scarcely believable", fined him £1,500.

Goldsworthy, of Kilgetty, west Wales, is eligible for a one hundred per cent EU subsidy for his 72 acres of flax. In previous years, he had been ordered to destroy the crop because the 350-mile trip to a reprocessing plant in East Anglia was said to make it uneconomical.

A Welsh Farmers' Union spokesman commented: "There's got to be something wrong with an agricultural system that encourages people to bin their crops".

Pedal Power

Rickshaws are Appearing on the Streets of London

As The Ecologist reported in May 1998, rickshaws are beginning to make an appearance on European streets - where they are being seen as a novel answer to traffic congestion and pollution - even as they are outlawed as 'backward' in Calcutta. Last May, a fleet of Indian rickshaws was introduced to London, where planners hope they will cut traffic by up to a third. The rickshaws, which can carry two adults and a child, have been adapted for the Western user to include 21 gears, hydraulic disc brakes and halogen lights. A hooded parapet, hot water bottle and blanket will shelter passengers from the elements.

"Hopefully, the scheme will

develop into a full community taxi service", says Andrew Bambridge, of Cityside Regeneration, the company that is funding the six-month pilot project. The venture will be managed by Erica Steinhauer, who runs the British Rickshaw Network. Steinhauer battled for five years to get city authorities in Oxford to recognise the rickshaw as a legitimate form of public transport. The fruits of her labours - a 12-vehicle tourist service - now serves as a working model of the rickshaw's capacity to provide a convenient and environmentally friendly form of urban transport. For more information, contact: Erica Steinhauer, The British Rickshaw Network, 40 Cowley Rd, Oxford, OX4 1HZ, Tel: + 1865 251 620 Fax: + 1865 251 134.



Erica Steinhauer of the British Rickshaw Network.

Poisoned Seas

A recent report reveals that PCB poisoning of the oceans is even worse than previously thought.

PCBs (polychlorinated biphenyls) are some of the most toxic artificial chemicals in the world. These oily liquids are used as insulating fluids, sealants, waterproofers and coolants in a wide variety of electrical appliances. PCBs were developed in 1929 by the Swann Corporation, which was later taken over by Monsanto, the corporation which, as well as trying to foist biotechnology onto an unwilling world, is also responsible for most of the PCB poisoning on Earth today.

Because, unfortunately for the notorious "life science" company, PCBs turned out to be extremely dangerous. Like DDT, PCBs 'bio-accumulate' along the food chain in ever increasing concentrations of toxicity, and do not biodegrade. Even at low levels, PCBs disturb genetic traits, confuse the endocrine system and are highly carcinogenic.

When scientists discovered the dangers of PCBs in the 1960s, many countries banned their sale and production. Perhaps they hoped it would all end there. But a recent report in the journal *Environmental Pollution* suggests otherwise.

Whilst scientists had previously assumed that PCB contamination would be worst closest to production, the report reveals that, in fact, some of the wildest places on Earth are actually the most polluted.

Now, scientists believe that 20 per cent of all 1.2 million tonnes of PCBs ever produced are in the oceans, and dolphins, seals and whales are carrying such high levels that, when dead, they have to be treated as hazardous waste. The pollution is playing havoc with the mammals' sexual characteristics. Last year, the Norwegian Polar Institute found four polar bear cubs with both male and female sexual organs.

Because humans, like polar bears, are at the top of the food chain, the bears' physiological reaction has caused deep concern. Native Arctic women have been warned not to eat the customary diet of marine mammal blubber before they have children.

Just Say No to the WTO

NGOs are rallying the troops for the "Protest of the Century".

A seven-day campaign against the World Trade Organisation is being planned to coincide with the third Millenium Round meeting in Seattle, USA, next November. The No To WTO, which is being organised by the Seattle-based Network Opposed to the WTO, hopes to bring together 100,000 people.

Of the 100 cases that have so far come WTO, every single decision has favoured corporations. WTO rulings have seriously undermined the environmental health and safety standards of nation states, as well as infringing upon the rights of governments to act on the behalf of their own people or principles (see 'The WTO by Steven Shrybman in this issue)

Across America, local authorities have set their teeth against the prospective MAI agreement, which was developed under WTO auspices. Even the WTO meeting host-town, Seattle, has declared itself an MAI-free zone. And recently, the WTO came under further attack for the way in which funds are being raised for the Seattle conference. International companies have been invited to sponsor the event, in return for a chance to rub shoulders with the world's top politicians. The most generous corporate sponsors will be entitled to tickets for five to two receptions and a 'ministerial' dinner.

Although Boeing Company executive Ray Waldeman, who

insists that the fundraisers are not "selling access", Daniel Seligman, of the Sierra Club trade and environmental group in Washington, is not so sure. "Trade officials are going to be much more likely to listen to top corporate sponsors like Bill Gates than other interested parties. They don't want to bite the hand that feeds them." International NGOs haven't been sent any of the cash-for-abash invitations, Seligman points out. When the world's top 500 corporations are paying for major public policy

heads the host committee,



negotiations, affecting health, environment and labour standards, "you've got to raise fundamental questions about how neutral and legitimate it all is."

To take part in the No to WTO campaign, between Nov. 27 and Dec.3, please contact Network Opposed to the WTO – People for a Fair Trade Policy, 2343 NW 100th, Seattle WA 98177, www.tradewatch.org, ssoriano@igc.org, Tel: + 877 786 7980.

Tibetan Culture Faces New Attack

Tibetans face a further assault on their culture if the World Bank agrees to fund a \$40 million Chinese population transfer programme.

The Chinese government have asked for the World Bank's assistance in transferring 61,755 poor farmers to the Tibetan and Mongolian province of Qinghai. Free Tibet campaigners say the project would go against the financial institution's official policy of safeguarding the rights of indigenous minority peoples. The sudden influx of farming families, who are not Tibetan or Mongolian and do not understand the culture and language, would marginalise local people and threaten the "autonomous" status of their province. In accepting the Chinese as a potential trading partner within the World Trade Organisation, G-8 political leaders have turned a blind eye to Chinese human rights abuses. But there is no reason why the degradation of Tibet's peaceful, spiritual people should be of any lesser concern than the fate of the Kosovans. The Chinese population transfer would make a bad situation worse. Free Tibet campaigners are urging the World Bank to pull out of the relocation project.

To voice your concern, please write to James Wolfensohn, President, World Bank, as above, Fax: + 202 522 3031

To get involved, please contact Free Tibet Campaign, 1 Rosoman Place, London EC1R OJY, Tel: + 171 833 9958, Fax: + 171 833 3838 Email: tibetsupport@gn.apc.org.

Are They Angry, or are they just... Toxic?

Agricultural chemicals aren't just carcinogenic, they're making us aggressive. And micro-organisms in drinking water are proving a new danger.

A report in the journal *Toxicology and Industrial Health* says that continued exposure to low doses of water-borne weed killers, artificial fertilisers and pesticides, at levels comparable to US groundwater, cause significant changes in the way we behave. The study, which took medical researchers at the University of Wisconsin in the USA five years to complete, is one of the first to explore the effects of combinations of agricultural compounds.

Scientist Warren Porter's team discovered that combinations were far more likely to cause thyroid imbalances than individual chemicals. The thyroid controls the body's metabolic rate. People who have a fast metabolism tend to be more nervous and aggressive than those with a slow metabolism. Combinations of frequently-used chemicals were found to make the thyroid hyperactive, causing increased irritability and aggression.

Another study, carried out in the Yaqui Valley, Sonora, Mexico, came to a similar conclusion. Elizabeth A. Guilette and her colleagues observed the behavioural, learning and physical differences between children bought up in the valley basin, where pesticides are liberally sprayed, and those who live in the foothills, where families don't use sprays at all. They found that the pesticide-exposed children were noticeably more aggressive than the children from the foothills.

A recent spate of violence from America's young has left people wondering what the problem is. Is it the breakdown of communities, religion, families? Is it violent TV? Few have questioned the role that increasing doses of man-made chemicals have to play.

But some say we should be more concerned about toxic water-

borne micro-organisms. The American Society for Microbiology has found that micro-organisms cause up to 900 deaths and 900,000 cases of illness in the US every year. But whereas maximum concentrations standards have been set for over 70 different chemicals, only one microorganism – the coliform bacteria – is regulated. The ASM says that coliform, which is supposed to act as a general indicator of microbial presence in water, is a poor representative. They have called on the US Environmental Protection Agency to carry out extensive research into

Agency to carry out extensive research reflective ways to improve the microbial quality of US drinking water. A press release of the ASM report can be viewed at http: //www. asmusa. org/pcsrc/h20 quality. htm Dr Porter's study on chemical

combinations was published in Toxicology and Industrial Health, Vol. 15, Nos. 1 and 2 (1999), pp. 133-150.

Dam Them All

A Turkish dam project will drown one of the Earth's oldest human settlements. Meanwhile, China's large dams are already crumbling.

The Ilisu dam project in south-east Turkey is coming under increasing fire from environmentalists, historians and locals, all of whom claim that the project will be a disaster. The \$1.52 billion hydroelectric project, which will hold back the headwaters of the Tigris, will submerge one of the oldest settlements on Earth.

Hasankeyf contains rare cave churches, ancient bridges and historic monuments. Ironically, because of its status as a heritage site, local entrepreneurs have never been allowed even to build a tourist hotel in the town. Yet in a remarkable U-turn, the government gave the go-ahead, back in 1982, for the settlement to be drowned forever beneath the waters of a reservoir which many say is unnecessary. Funding is currently being agreed with 15 different countries. Perhaps unsurprisingly, few considerations have been given to the 20,000 locals who will have to be resettled. Although the government is offering generous compensation, the valley's inhabitants just want to keep their homes. "People here don't want the money", insists Ali Abdullah Tatus, who grew up beside the Tigris. "We want to stay here".

The project could also be a recipe for international conflict. The Turkish dam will divert the Tigris as it enters Syria and Iraq, in direct contravention of the globally-binding 1997 UN Convention of the Non-Navigable Uses of Transboundary Waterways. This states that, where water resources are diverted, neighbouring states must be given prior-notification, significant harm must be avoided and all water conflicts peacefully resolved. The Ilisu project fails on all three counts.

"It wasn't meant to be like this", wrote Fred Pearce, in a recent issue of the *New Scientist.* "Big dams are supposed to be yesterday's technology".

China's tottering hydropower industry is a case in point. In March, the *China Daily* reported that the government planned to repair 33,000 dams and dykes at an estimated cost of £2.4 billion, saying that they were "poorly built". The work would be finished by 2010, but government officials were already wondering where funding would come from. Not from the Chinese people themselves, presumably, who are already paying a special supplement on their electricity bills towards the Yangtze's Three Gorges project. The dam, which will be the biggest hydroelectric project in the world, is yet to enter the second stage of its development.

Recently, surprisingly frank articles in the *People's Daily*, which has been called the mouthpiece of the Chinese government, have questioned whether the Three Gorges dams are needed at all. Already, the project is predicted to cost three and a half times more than the original \$8 billion estimated. And the enormous 410-mile reservoir created by the dam will displace an incredible 3 million people.

The Chinese government claims to have re-located 160,000, but sources inside China say that the real figure is under half of that. No one wants to move from the villages that their families have lived in for generations. Moreover, much of the land staked out for resettlement lies on steep mountain plateaus, where high exposure and erosion provides unsuitable conditions for farming. To make matters worse, promised compensation is getting "lost" in corrupt local bureaucracies.

New Zealand Dairy Boycott

Activists across Asia and the Pacific have vowed to boycott all New Zealand dairy products if cattle farmers start using Monsanto's recombinant Bovine Growth Hormone (rBGH).

Approval for the use of the controversial geneticallyengineered hormone, which has produced disastrous results in the US, is to be put before New Zealand's Animal Remedies Board this month. International studies have shown that injecting cows with rBGH causes a much greater incidence of mastitis, lameness, sores and short life

spans amongst cattle. Drinking the milk has been linked to higher rates of prostate and breast cancer in humans. Despite this, NZ regulatory bodies will not carry out independent human clinical trials before making their decision.

In a formal statement, citizen movements in Malaysia, the Philippines, Indonesia, Japan, Korea and India – who are part of the Asia and Pacific Pesticide Action Network – have pledged to boycott all New Zealand dairy if use of the growth hormone is approved. NZ Food Minister, John Luxton, described the activists as "factually modified".

Secondhand Hazards

Despite global agreements on toxic exports, hazardous Western chemicals are still being palmed off onto developing countries.

The 1995 amendment to Basel Convention on Toxic Waste Exports banned the export of toxic wastes from OECD to non-OECD countries. But loopholes are appearing in the treaty allowing banned pesticides to be exported to the South.

Since the pesticide DBCP was banned from the United States in 1979, for example, more than 25,000 workers from banana and pineapple plantations in the Philippines, Costa Rica and ten other countries have sued manufacturers and employers over its continued use. They say it has made them sterile. So far, the payout has reached £52 million.

But DBCP "is just the tip of the iceberg", reports *The International Journal of Occupational and Environmental Health* this month. Adjunct Professor of Tufts University in the US, Barry S. Levy, believes there may be hundreds of other chemicals like DBCP out there; "chemicals that are known hazards, banned or restricted in this country and then shipped abroad."

The UN is now working on a globally binding pesticide convention.



Supported by Triodos Bank, Holden Meehan and Rathbone Neilson Cobbold

Victory for French Road Protesters

Last French wild bears no longer threatened by road tunnel.

In a remarkable victory, French road protestors have successfully blocked the completion of a £200 million road tunnel across the Vallee D'Aspe national park in the Pyrénées, which is home to the last of France's wild bears. The campaigners, who have been battling with local authorities for 15 years, say the noise and pollution from up to 1,000 lorries a day would have completely destroyed the bears' habitat.

The protests were led by an activist known as "the Indian", who has been arrested 8 times over the course of the protest. Only days before the conservationists' final triumph, Eric Pététin was caught slashing a lorry's tyres and digging a trench across the newly widened road.

Russia faces 'New Chernobyl'

Decaying nuclear submarines threaten new nuclear disaster.

Russia's decaying nuclear submarine fleet is threatening the world with a 'Chernobyl in slow motion', says Russia's Deputy Atomic Energy Minister, Nikolay Yegerov.

Some of the submarines, which are literally collapsing at their moorings, are being kept afloat by refilling their buoyancy tanks with pressurised air. "Who knows how long this can go on?" said Valery Alexeyev, a dock-yard official.

With the Russian economy teetering on the brink of collapse, funding to decommission the country's Northern Submarine Fleet is coming from abroad. The US and UK have both sent contributions, and Norway, Sweden and Finland, which are in the front line for any radiation contamination, have given aid as well. However, much of the funding is yet to be found.

An antique nuclear reactor in the same region of Russia's Kola peninsula is also causing concern. Safety experts believe that its two oldest pressurised-water reactors, built in 1973, should be closed immediately. Appeals to the EU for aid have failed. "We are in despair", said the plant's chief engineer, Vassily Omeltchuk.

The Kola peninsula is now one of the most polluted and volatile regions in the world.

Concerned European citizens should write to their MEP to ask what steps the EU are taking to help Russia decommission its dangerous nuclear submarine fleet.



THE COMPASSIONATE REVOLUTION Radical Politics & Buddhism

David Edwards

"David Edwards brings both incisive thought and humanity to all his work. In The Compassionate Revolution, his analysis of the modern media as the handmaiden of corporate power, and therefore antihuman, is essential reading." - John Pilger David Edwards shows how our capitalist system is dependent on the promotion of the

any cost in terms of human suffering; hatred of foreign obstacles to

profit; and ignorance of the cosy link between Western corporations and Third World dictators. Western dissidents need to recognize the truly revolutionary potential contained in the Buddhist conviction that "compassion is the basis and cause of all happiness". The antidote to exploitative social systems is rational awareness rooted in unconditional kindness and compassion for all. To the extent that we hate the architects of exploitation, we promote the very forces on which exploitation depends. Green Books 256pp with bibliog. and index 216 x 138mm ISBN 1 870098 70 6 £9.95 pb

FREE TO BE HUMAN: Intellectual Self-Defence in an Age of Illusions David Edwards

"A wise and acute analysis of the way our minds are controlled..." – Howard Zinn

Building on the work of writers such as Chomsky and Herman, David Edwards shows how the propaganda system distorts our understanding of political, personal and spiritual issues, ensuring that we remain passive, conformist, confused and uninformed—and willing to accept the irrational

values of corporate consumerism. He argues that we need to master the arts of 'intellectual self-defence', in order to become able to challenge the 'necessary illusions' of a system that subordinates people and planet to the drive for profit. Green Books 288pp 216 x 138mm ISBN 1 870098 56 0 £9.95 pb

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"A unique, extraordianry and profoundly challenging book" – John Gray, TLS

"An intellectually rigorous and emotionally compelling ecological world-view." - Bill McKibben, author of The End of Nature

The Way is Edward Goldsmith's extended critique of the modernistic approach to understanding and acting on the world, based on the promotion of economic development and world trade. He argues that we need to learn instead from the world-views of traditional societies, where human welfare is seen as being best served by main-

taining the critical order of the cosmos (encompassing society, the natural world and the world of the gods). In many archaic societies, a word existed for the 'path' or 'way' that had to be followed in order to achieve this goal – the R'ta for instance of Vedic India (later the Dharma), and the Tao of the Chinese. Whereas, with us, major problems are interpreted as evidence that economic development has not proceeded far or fast enough, for such a society they indicated instead that it had diverted from the 'way', disrupting thereby the critical order of the cosmos.

A truly ecological world-view, as the author sees it, must necessarily be based on the world-view of primal society, whose members, significantly enough, were the only people who knew how to satisfy their real needs without annihilating the living world on which we totally depend for our welfare, indeed for our survival

Edward Goldsmith is a campaigner and scholar. He has written or edited 17 books and a host of articles, and is the founder of *The Ecologist* (1969), of which he is still the editor. He is a recipient of the Right Livelihood Award, also known as the Alternative Nobel Prize in Stockholm (1991).

550pp with glossary, bibliog. & index ISBN 0 9527302 2 7 £28.50 (hb) ISBN 0 9527302 3 5 £16.50 (pb). Ecologist readers can order *The Way* direct from the publishers at the special price of £25.00 (hb) or £15.00 (pb), post free.

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BE HUMAN

Vegetarianism and veganism, despite claims made by adherents, are neither healthy nor natural diets. Indeed, only in the twentieth century, with the advent of vitamin pills and supplements, has it been possible to follow a strictly vegan diet without dying of malnutrition. Contrary to popular myth, a diet with a very low fat and cholesterol content is extremely dangerous, and meat and dairy products are not the main cause of heart disease and cancer – which are practically unknown in traditional meat-eating societies. **By Dr Stephen Byrnes**.

A long with the saturated fat and cholesterol scares of recent decades has come the notion that vegetarianism – and its more extreme form, veganism – are the healthiest dietary options. It seems as if every health expert and government agency is urging people to eat fewer animal products, and consume more vegetables, grains, fruits and legumes. Along with these exhortations have come a flurry of assertions and studies supposedly proving that consuming animal products is associated with sickness and death. Campaigners also claim that widespread adoption of a vegetarian or vegan diet would improve the global environment and reduce famine and hunger.

Yet many of these claims cannot be substantiated, and some are simply false and dangerous. As a practitioner who has dealt with several former vegans, I know full well the dangerous effects of a diet devoid of animal products. I hope that this article will debunk some of the common myths associated with vegetarianism and veganism, and highlight the dangers of animal product-free diets.

MYTH 1: Meat consumption contributes to famine and depletes the Earth's natural resources

It is often argued that cows and sheep require pasturage that could be better used to grow grain for starving millions in poor countries. Additionally, claims are made that raising livestock requires more water than raising plant foods. But both arguments are illogical and simplistic.

The pasturage argument ignores the fact that a large portion of the Earth's dryland is unsuited to cultivation. The open range, and desert and mountainous areas, yield their fruits to grazing animals, not to arable crops. Unfortunately, the bulk of commercial livestock is not range-fed, but stall-fed. Stall-fed animals do not ingest grasses and shrubs (like they should), but are fed an unnatural array of grains and soybeans – which could be eaten by to humans. The argument here, then, is not that eating meat depletes the Earth's resources, but that commercial farming methods do. Such methods also subject livestock to deplorable living conditions where infections, antibiotics, steroids and synthetic hormones are common. These all lead to an unhealthy animal and, by extension, an unhealthy food product.

MYTH 2: Vitamin B12 can be obtained from plant sources

Of all the myths, this is perhaps the most dangerous. Vegans who do not supplement their diet with vitamin B12 will eventually get pernicious anaemia, a fatal condition, as well as nervous and digestive system damage. Claims are made that B12 is present in certain algae, tempeh (a fermented soy product) and Brewer's yeast. All of them are false. Like the niacin in corn, the B12 present in algae is not available to the body. Tempeh, though a healthy food, does not contain B12. Further, the ingestion of too much soy increases the body's need for B12. Brewer's yeast does not contain B12 naturally; it is always fortified from an outside source.

Vegans who do not supplement their diet with vitamin B12 will eventually get pernicious anaemia, a fatal condition, as well as nervous and digestive system damage

The only reliable and absorbable sources of vitamin B12 are animal products. Though present in lesser amounts, milk products do contain B12. Vegans, therefore, should consider adding dairy products to their diets. If dairy cannot be tolerated, eggs, preferably from free-range hens, are a virtual necessity.

That vitamin B12 can only be obtained from animal products is one of the strongest arguments against veganism being a 'normal' way of human eating. Today, vegans can avoid pernicious anemia by taking supplemental vitamins. If those same people had lived just a hundred years ago, when vitamin supplements were unavailable, they would have died. In my own medical practice, I recently saved two vegans from death from anemia (iron and B12) by convincing them to eat generous amounts of dairy products.

MYTH 3: The body's need for vitamin A can be met by plant foods. Vitamin D can be obtained by exposure to sunlight

Vitamin A is principally - and usable, full-complex vitamin D entirely - found in animal products. Plants do contain betacarotene, a substance that the body can convert into vitamin A, and the impression given by some vegetarian sources is that betacarotene is as good as vitamin A. This is not true. First, the conversion from carotene to vitamin A can only take place in the presence of bile salts. This means that fat must be eaten with the carotenes. Additionally, infants, people with hypothyroidism, gall bladder problems, diabetes, or infants either cannot make the conversion or do so very poorly. Lastly, the body's conversion from carotene to vitamin A is not very efficient: it takes 4-6 units of carotene to make one unit of vitamin A. What this means is that the sweet potato (containing about 25,000 units of beta-carotene) you just ate will only convert into about 4,000 units of vitamin A (assuming you ate it with fat and do not have a thyroid or gall bladder problem).

Relying on plant sources for vitamin A is not a wise idea. This

is why good old fashioned butter is a virtual must in any diet. Butter from pasture-fed cows is rich in vitamin A and will provide the intestines with the fatty material needed to convert vegetable carotenes into active vitamin A. Relying on sunlight for vitamin D is equally unwise. Even in tropical areas, where people are exposed to a great deal of sunlight, native diets are rich in vitamin D from animal foods. Vitamins A and D are all-important in our diets, as they help the body to use proteins and minerals.

MYTH 4: Meat eaters have higher rates of heart and kidney disease, cancer, obesity, and osteoporosis than vegetarians

Such stupendous claims are hard to reconcile with historical and anthropological facts. All of the diseases mentioned are primarily twentieth century occurrences, yet people have been eating meat and animal fat for thousands of years. Furthermore, several native peoples around the world (including the Innu and the Maasai) have traditional diets very rich in animal products, but do not suffer from the above-mentioned maladies.

Several studies have supposedly shown that meat consumption is the cause of heart disease, cancer and bone loss, but such studies, honestly evaluated, show no such thing. For example, studies supposedly proving that meat consumption among the Innu caused high rates of osteoporosis failed to note other dietary factors that contribute to bone loss – refined sugar consumption, alcoholism and a junk food diet, for example. More careful and unbiased researchers who examined Innu who followed their traditional diet and avoided the alcohol, sugar, and ice cream of their 'modernised' relatives, showed no incidence of bone loss.

It is usually claimed, too, that vegetarians and vegans have lower cancer rates than meat eaters, but a 1994 study of California Seventh Day Adventists (who are largely vegetarian) showed that, while they did have lower rates of some cancers (e.g. breast), they had significantly higher rates of several others (brain, skin,uterine, cervical and ovarian).

MYTH 5: Saturated fats cause heart disease and cancer, and low-fat, low-cholesterol diets are healthier

As noted above, diets of native peoples the world over are rich in saturated fats, and heart disease and cancer are primarily modern diseases. Saturated fat consumption, therefore, cannot logically cause these diseases. As with the poorly-done studies of the Innu, modern day researchers fail to take into account other dietary factors of people who have heart disease and cancer. As a result, the harmful effects of refined sugar and vegetable oil consumption get mixed up with animal fat consumption.

A recent study of thousands of Swedish women showed no correlation between saturated fat consumption and increased risk of breast cancer. The study did show, however, a strong link between vegetable oil intake and higher breast cancer rates. The famous 'Framingham Heart Study' carried out in Massachusetts, USA, is often cited as proof that dietary cholesterol and saturated fat intake cause heart disease and ill health. Involving about 6,000 people, the study compared two groups over several years at five-year intervals. One group consumed little cholesterol and saturated fat, while the other consumed high amounts. Yet Dr. William Castelli, the study's director, is quoted in the *Archives of Internal Medicine* (July 1992) as saying,

"In Framingham, Massachusetts, the more saturated fat one ate, the more cholesterol one ate, the more calories one ate, the lower the person's serum cholesterol... we found that the people who ate the most cholesterol, ate the most saturated fat, ate the most calories, weighed the least and were the most physically active." [emphasis added]

It is true that the study showed that those who weighed more and had higher serum cholesterol levels were more at risk for heart disease; but weight gain and cholesterol levels had an inverse correlation with dietary fat and cholesterol intake.

In a similar vein, the US Multiple Risk Factor Intervention Trial compared the mortality rates and eating habits of 12,000+ men. Those who ate less saturated fat and cholesterol showed a slightly reduced rate of coronary heart disease (CHD), but had an overall mortality rate much higher than the other men in the study. The few studies that indicate a correlation between saturated fat reduction and a lower CHD rate also clearly document a sizeable increase in deaths from cancer, suicide, violence and brain haemorrhage.

Conversely, there are many health benefits to saturated fats, depending on the fat in question. Coconut oil, for example, is rich in lauric acid, a potent anti-fungal and anti-microbial substance. Coconut also contains appreciable amounts of caprylic acid, also an effective anti-fungal. In general, saturated fats provide a good energy source for the vital organs, protect arteries against damage by the atherogenic lipoprotein (a), are rich in fat-soluble vitamins, help raise HDL levels in the blood, and make possible the utilisation of essential fatty acids.

MYTH 6: Vegetarians live longer and have more energy and endurance than meat eaters

Surprising as it may seem, some prior studies have shown that the annual allcause death rate of vegetarian men was slightly *higher* than that of non-vegetarian men (93 per cent vs. 89 per cent) and that the same was true of women (86 per cent vs. 54 per cent). Dr Russell Smith, author of an authoritative study on heart disease, showed that as animal product consumption *increased* among some study groups, death rates *decreased*. Such results were not obtained among vegetarian subjects.

It is usually claimed that predominantly meat-eating peoples are short-lived, but the Aborigines of Australia (who traditionally eat a diet rich in animal products) are known for their longevity. Similarly, the Russians of the Caucasus mountains live to great ages on a diet of fatty pork and whole milk products. The Hunzas, also





known for their robust health and longevity, eat substantial portions of goat milk, which has a higher saturated fat content than cow's milk. In contrast, the largely vegetarian inhabitants of southern India have the shortest life spans in the world.

Dr. Weston Price travelled around the world in the 1920s and 30s investigating native diets. Without exception, he found a strong correlation between diets rich in animal fats and athletic ability. Special foods for Swiss athletes, for example, included bowls of fresh, raw cream. In Africa, Dr. Price discovered that groups whose diets were rich in fatty fish and organ meats like liver, consistently carried off the prizes in athletic contests, and that meat-eating tribes always dominated peoples whose diets were largely vegetarian.

MYTH 7: The 'Caveman' diet was low fat and/or vegetarian

Our Neolithic ancestors were hunter-gatherers, and two schools of thought have developed as to what their diet was like. One argues for a high fat- and animal-based diet supplemented with seasonal fruits, berries, nuts, root vegetables and wild grasses. The other argues that primitive peoples consumed small amounts of lean meats and large amounts of plant foods.

Once again, such notions of a 'low-fat diet' are hard to reconcile with what we know of modern day hunter-gatherer societies. Present-day African tribes readily consume the fatty portions of animals, especially organs such as brains, liver and tongue. The Aborigines, another hunter-gatherer society, also have a diet rich in saturated animal fats.

Stefansson reported that the Innuit and North American Indian tribes would worry when their cache of caribou was too lean: they knew sickness would follow if they did not consume enough fat. Canadian Indians would deliberately hunt older male caribou and elk, for these animals carried a 50 lb slab of back fat on them which Indians would eat with relish. Native Americans would also refrain from hunting bison in the spring (when the animals' fat stores were low due to scarce food supply during the winter), preferring to hunt, kill, and consume them in the autumn, when they were fattened up.

On his journeys, Dr. Price never once found a totally vegan culture. Anthropological data support this: across the globe, almost all societies show a preference for animal foods and fats. Price also found that those peoples who, out of necessity, consumed more grains and legumes had higher rates of dental decay than those who consumed more animal products. Archaeological evidence supports this finding: skulls of prehistoric peoples who were largely vegetarian have teeth containing caries and abscesses (and show evidence of tuberculosis).

MYTH 8: Saturated fat consumption has increased in the 'developed' world in the 20th century, with a corresponding increase in heart disease and cancer

Statistics do not bear such fancies out. In the US, for example, butter consumption has plummeted from 18 lbs per person a year in 1900 to about 5 lbs per person a year today. Additionally, North Americans, urged on by government health agencies, have reduced their intakes of eggs, cream, lard and meats. A survey of cookbooks published in the last century shows that people ate plenty of eggs and saturated fats. For example, in the Baptist Ladies Cook Book (Illinois, USA; 1895), virtually every recipe calls for butter, cream, or lard. Recipes for creamed vegetables are numerous as well. A scan of the Searchlight Recipe Book (Capper Publications; 1931) has similar recipes: creamed liver, creamed cucumbers, hearts braised in buttermilk. British Jews, as shown by the Jewish Housewives Cookbook (London; 1846), had diets rich in cream, butter, eggs, and lamb and beef tallows. One recipe for German waffles calls for an entire pound of butter. A recipe for Oyster Pie from the Baptist cookbook calls for a quart of cream and a dozen eggs.

It does not appear, then, that saturated fat consumption has gone up in this century. What has gone up is consumption of margarine, lifeless, packaged 'foods,' processed vegetable oils, pasteurised/homogenised milk and refined sugar. These are more likely culprits in our modern epidemics of cancer and coronary heart disease.

MYTH 9: Soya products are adequate substitutes for meat and dairy products

The billion-dollar soy industry has profited immensely from the anti-cholesterol, anti-meat gospel of current nutritional thought. Whereas not so long ago soy was an Asian phenomenon, now soy products proliferate in the US and European markets. While the traditionally-fermented products of miso, shoyu, tempeh, and natto are definitely healthy in measured amounts, the bevy of hyper-processed soy 'foods' are not. Non-fermented soybeans are extremely high in phytic acid, an anti-nutrient that binds to minerals in the digestive tract and carries them out of the body. Vegetarians are known for their high rates of iron and zinc deficiencies. Soybeans are also rich in trypsin inhibitors, which hinder protein digestion. Textured vegetable protein (TVP), soya 'milk,' and soya protein powders, popular vegetarian meat and milk substitutes, are fragmented foods made by treating soybeans with high heat and alkaline washes to extract the bean's fat content or to neutralize their potent enzyme inhibitors. These practices completely denature the bean's protein content, rendering it very hard to digest. And MSG, a neurotoxin, is routinely added to TVP to make it taste like the various foods it imitates.

On a purely nutritional level, soybeans, like all legumes, are deficient in cysteine and methionine, vital sulphur-containing amino acids. Soybeans are also lacking in tryptophan, another essential amino acid. Furthermore, soybeans contain no vitamins A or D, required by the body to assimilate and utilise the bean's proteins. It is probably for this reason that Asian cultures that do consume soybeans usually combine them with fish or fish broths (abundant in fat-soluble vitamins), or other fatty foods.

MYTH 10: The human body is not designed for meat consumption

Some vegetarian groups claim that since humans possess grinding teeth like herbivorous animals and longer intestines than carnivorous animals, this proves the human body is better suited for vegetarianism. This argument fails to note several human physiological features that clearly indicate a design for animal product consumption. First and foremost is our stomach's production of hydrochloric acid, something not found in herbivores. Furthermore, the human pancreas manufactures a full range of digestive enzymes to handle a wide variety of foods, both animal and vegetable. While humans may have longer intestines than animal carnivores, they are not as long as herbivores; nor do we possess multiple stomachs like many herbivores, nor do we chew cud. Our physiology definitely indicates a mixed feeder, or an omnivore, much the same as our relatives, the mountain gorilla and chimpanzee (who have been observed eating small animals and, in some cases, other primates).

MYTH 11: Animal products contain harmful toxins.

A recent vegetarian newsletter claimed the following:

"Most people don't realise that meat products are loaded with poisons and toxins! Meat, fish and eggs all decompose and putrefy extremely rapidly. As soon as an animal is killed, self-destruct enzymes are released, causing the formation of denatured substances called ptyloamines, which cause cancer."

This article then went on to mention Mad Cow Disease, parasites, salmonella, hormones, nitrates and pesticides as toxins in



Plant foods alone cannot supply all the body's needs.

animal products.

If meat, fish and eggs do indeed generate cancerous "ptyloamines," it is strange that people have not been dying in droves from cancer for the past million years. Such nonsensical claims cannot be supported by historical fact. Hormones, nitrates and pesticides are present in commercially-raised animal products (as well as commercially-raised fruits, grains, and vegetables) and are definitely things to be concerned about. However, one can avoid these chemicals by taking care to consume free-range, organic meats, eggs, and dairy products.

Parasites are easily avoided by taking normal precautions in food preparations. Pickling or fermenting meats, as is customary in traditional societies, always protects against parasites. In his travels, Dr. Price always found healthy, disease- and parasite-free peoples eating raw meat and dairy products as part of their diets. Similarly, Dr. Francis Pottenger, in his experiments with cats, demonstrated that the healthiest, happiest cats were the ones on the all-raw food diet. The cats eating cooked meats and pasteurised milk sickened and died and had numerous parasites. And salmonella, it is worth pointing out, can be transmitted by plant products as well as animal.

BSE, or 'Mad Cow Disease' is probably not caused by cows eating animal parts with their food, a practice which imitates nature, as cows eating fresh grass consume insect larvae and eggs. British organic farmer Mark Purdey has argued convincingly that cows that get BSE are the ones which have had a particular organophosphate insecticide applied to their backs (see notes to Myth 1), or who have grazed on soils lacking in magnesium, but containing high levels of aluminium.

MYTH 12: Eating meat or animal products is less 'spiritual' than eating only plant foods

It is often claimed that people who eat meat or animal products are somehow less spiritually evolved than those who do not. Though this is not a nutritional or academic issue, people who do include animal products in their diet are often made to feel inferior in some way. This issue, therefore, is worth addressing.

Several world religions, and their founders, placed no restrictions on animal consumption: the Jews eat lamb at their most holy festival, Passover; Muslims celebrate Ramadan with lamb before entering into their fast; Jesus Christ, like other Jews, partook of meat at the Last Supper (according to the canonical gospels), etc. Some forms of Buddhism do place strictures on meat consumption, but dairy products are almost always allowed. Similar tenets are found in Hinduism. As part of the annual Samhain celebration, Celtic pagans would slaughter the weaker animals of the herds and cure their meat for the oncoming winter.

Nevertheless, it is often claimed that, since eating meat or eggs involves the taking of a life, animal food consumption is almost tantamount to murder. Leaving aside the religious philosophies that often permeate this issue, what appears to be in dispute is an understanding of the life force and how it works. Modern peoples (vegetarian and non) have lost touch with what it takes to survive in our world – something native peoples never lose sight of. We do not hunt or clean our meats, we purchase steaks and chops at the supermarket. We do not toil in rice paddies, we buy bags of brown rice, and so forth.

When Native Americans killed a game animal for food, they would routinely offer a prayer of thanks to the animal's spirit for giving its life so that they could live. In our world, life feeds off of life. Destruction is always balanced with generation. This is a good thing: unchecked, the life force becomes cancerous. If animal food consumption is viewed in this manner, it is not murder, but sacrifice. Modern peoples would do well to remember this.

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Kosovo: The Truth According to Noam Chomsky

Linguist and political commentator Noam Chomsky gave this interview recently, in which he attempted to cut through the NATO bluff about the war in Kosovo, and expose the truth about the motives of the West.

Interviewer: Let's define some of the language we are hearing around this war. Can you comment on the use of the terms 'humanitarian crisis', 'genocide', and 'ethnic cleansing' as they are being applied to Kosovo?

Noam Chomsky: Well, for starters, the concept called 'humanitarian crisis' has a technical meaning, which does not have much to do with what might reasonably be assumed to be the defining criteria of the term. The technical meaning of humanitarian crisis is a problem somewhere that threatens the interests of rich and powerful people. That is the essence of what makes it a crisis. Now, any disturbance in the Balkans does threaten the interests of rich and powerful people, namely, the elites of Europe and the US. So when there are humanitarian issues in the Balkans, they become a 'humanitarian crisis'. On the other hand, if people

The technical meaning of humanitarian crisis is a problem somewhere that threatens the interests of rich and powerful people.

slaughter each other in Sierra Leone or the Congo, it's not a humanitarian crisis. As a matter of fact, Clinton just refused to provide the relatively puny sum of \$100,000 for a peace-making force in the Republic of the Congo, which might well have averted a huge massacre. But those deaths do not constitute a humanitarian crisis. Neither do the many other deaths and tragedies to which the US directly contributes: the massacres in Colombia, for example, or the slaughters and expulsions of people in south-eastern Turkey, which are being carried out with crucial support from Clinton. Those aren't humanitarian crises. But Kosovo is a crisis because it is in the Balkans.

Now, the term 'genocide', as applied to Kosovo, is an insult to



Civilian train in Kosovo accidentally bombed by NATO.



Indicted war criminal Slobodan Milosevic and supporters.

the victims of Hitler. In fact, it's revisionist to an extreme. If this is genocide, then there is genocide going on all over the world. And Bill Clinton is decisively implementing a lot of it. If this is genocide, then what do you call what is happening in the south-east of Turkey? The number of refugees there is huge; it's already reached about half the level of Palestinians expelled from Palestine.

If it increases further, it may reach the number of refugees in Colombia, where the number of people killed every year by the army and paramilitary groups armed and trained by the United States is approximately the same as the number of people killed in Kosovo last year.

'Ethnic cleansing', on the other hand, is real. Unfortunately, it's something that goes on and has been going on for a long time. It's no big innovation. How come I'm living where I am instead of the original people who lived here? Did they happily walk away?

Int: So human rights abuses in Kosovo are termed a 'humanitarian crisis' by the world's most powerful state. But how did we get from that to all-out war?

NC: Well, let's look at the situation from the US point of view: There's a crisis, what do we do about it? One possibility is to work through the United Nations, which is the agency responsible under treaty obligations and international law for dealing with such matters. But the US made it clear a long time ago that it has total contempt for the institutions of world order, the UN, the World Court, and so on. In fact the US has been very explicit about that. This was not always the case. In the early days of the UN, the majority of countries backed the US because of its overwhelming political power. But that began to change when decolonisation was extended and the organisation and distribution of world power shifted. Now the US can no longer count on the majority of countries to go along with its demands. The UN is no longer a pliant, and therefore no longer a relevant, institution. This proposition became very explicit during the Reagan years and even more brazen during the Clinton years. So brazen that even right-wing analysts are worried about it. There is an interesting article in the current issue of *Foreign Affairs*, an establishment journal in the US, warning Washington that much of the world regards the US as a "rogue super-power" and the single greatest threat to their existence. In fact, the US has placed itself totally above the rule of international law and international institutions.

There is an interesting article in the current issue of Foreign Affairs, an establishment journal in the US, warning Washington that much of the world regards the US as a "rogue super-power" and the single greatest threat to their existence.

NATO at least has the advantage of being pretty much under US domination. Within NATO there are differences of opinion, so when there was a question last September of sending unarmed NATO monitors into Kosovo, every NATO country (with the possible exception of Britain) wanted the operation authorised by the UN Security Council as is required by treaty obligation. But the US flatly refused. It would not allow the use of the word "authorise". It insisted that the UN has no right to authorise any US action. When the issue moved on to negotiations and the use of force, the US and Britain, typically the two warrior states, were eager to use force and abandon negotiations. In fact, continental European diplomats were telling the press that they were annoyed by the sabre-rattling mentality of Washington. So NATO as a whole was driven to the use of force, in part, reluctantly. In fact, the reluctance increases as you get closer to the region. So England and the US are quite enthusiastic, others quite reluctant, and some in-between.

Int: Why was the US so eager to use force?

NC: The reason is obvious. When involved in a confrontation, you use your strong card and try to shift the confrontation to the area in which you are most powerful. And the strong card of the United States is the use of force. That's perhaps the only realm of international relations where the US has a near monopoly. The consequences of using force in Yugoslavia were more or less anticipated. The NATO Commanding General Wesley Dark stated that it was entirely predictable that the bombing would sharply increase the level of atrocities and expulsion. As indeed it did. The NATO leadership could not have failed to know that the bombing would destroy the quite courageous and promising democracy movement in Serbia as indeed it did; and cause all sorts of turmoil in surrounding countries as indeed it has, though still not at the

Irradiating Kosovo

If and when the refugees return to Kosovo, they will not only face devastated homes and Serbian hostility. They will also, in many places, be breathing in radioactive uranium dust from NATO's latest military toys.

American scientist and radiation expert Hari Sharma released a study last month showing that about 45,000 people affected by the Gulf War – Western soldiers, Iraqi soldiers and civilians – are likely to end up with fatal cancers as a direct result of the Allied use of depleted uranium, or DU, ammunition during that war. Depleted Uranium is also thought to be responsible for the mysterious 'Gulf War Syndrome' that many veterans of the conflict are suffering from today.

Five hundred thousand people are thought to have been exposed to airborne dust from exploded DU rounds during the Gulf War, radioactive traces of which still show up in urine samples from Allied veterans of the conflict and Iraqi civilians. NATO is now using DU weapons carried by A-10 and 'Warthog' tank-killing aircraft to attack Yugoslav armoured vehicles.

Depleted uranium ammunition was born of a grim, sophisticated battle of wits between designers of weapons developed to destroy armoured vehicles, and designers of armour. In our own era, this has reached such a point of complexity that the precise composition of tank armour is often a state secret, as it is on the U.S. 'Abrams' main battle tank. When DU weapons were introduced before the Gulf War, they seemed like a solution to several problems. The nuclear industry liked them because they were a way to dispose of otherwise troublesome waste. Armies liked them because they were cheap and chewed holes in enemy tanks. During the Gulf War, tank crews liked DU because it made them unguestioned masters of the battlefield.

But Hari Sharma argues that exploding DU rounds produce a potent radioactive aerosol that is inhaled by friend, foe and civilian alike and persists in the environment Uranium is highly pyrophoric, and once it catches fire it keeps burning till it's all gone. In that process, a very fine powder is produced, – a mixture of uranium dioxide and uranium trioxide. These particles become aerosols and travel in the air for long distances. If people are around, the particles are inhaled and end up in the lungs.

Some say that the use of DU violates international treaties. Bev Delong, President of Lawyers for Social Responsibility, says that a 1977 protocol to the Geneva Convention prohibits means of warfare that

"If you are going to use depleted uranium in warfare, it's better to drop an atom bomb and kill 30,000 people instantaneously rather than killing them over 20 or 30 years".

for many years after battle has ceased. The key to understanding how that happens is to look at what occurs after a DU round is fired.

Armies chose depleted uranium for antitank rounds because uranium's density – almost twice that of lead – transmits kinetic energy to an armoured vehicle better than any other substance that has been used. If a tank is hit accurately, the impact, intense fire and spall, (or fragments of the tank's inner lining) flying around inside it, will kill the crew. And DU rounds destroy tanks much more reliably than anything used previously.

But DU is also extremely damaging to those who come into contact with it.

cause widespread, long-term and severe damage to the natural environment. The bits of armament that are lying around Iraq are still presumably emitting radioactivity; that could be considered long-term, she says. And Kosovo may go the same way.

Sharma says that "NATO is trying to save Kosovars, but if they leave Kosovo filled with depleted uranium, it's not a happy situation. They [would be] poisoning them. If you are going to use depleted uranium in warfare, it's better to drop an atom bomb and kill 30,000 people instantaneously rather than killing them over 20 or 30 years". – Patrick Cain

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same level of crisis as Turkey or other places.

Nevertheless, it was necessary, as the Clinton foreign policy team kept stressing, to preserve the credibility of NATO. Now, when they talk about credibility, they are not talking about the credibility of Denmark or France. The Clinton Administration doesn't care about those countries' credibility. What they care about is the credibility of the United States. Credibility means fear: what they are concerned with is maintaining fear of the global enforcer, namely, the US. And that's much more important than the fate of hundreds of thousands of Kosovars, or whatever other consequences are incurred. So the US and NATO have helped to create a humanitarian catastrophe by knowingly escalating an already serious crisis to catastrophic proportions.

Int: Some people say that unless American soldiers start being shipped home in body bags, there will not be a serious anti-war effort in the US. What is your assessment of that?

NC: I don't agree with that at all. I mean, look at the history. During the 1980s there was overwhelming opposition to US atrocities in Central America. As a matter of fact, opposition was so strong that the Reagan Administration had to back off and resort to using international terrorist networks like the Contras to carry out its policies. And there were no Americans in body bags then. Today there's strong opposition to US support for Indonesian slaughter in East Timor, and there are no American body bags. If you look at the opposition to the Vietnam War, Americans were of course being killed, but that was by no means the decisive factor. I think that the notion that only dead American soldiers will inspire a peace movement – in other words, that people are motivated only by self-interest – is US propaganda. It's intolerable for the propaganda system to concede that people might act on moral instinct, which is in fact what they do.

Int: *How do you reconcile that view with the fact that, according to polls at least, the majority of Americans would support an escalation of the war, for example, through the deployment of NATO ground troops?*

NC: You have to keep in mind what these people are hearing. The public is getting its marching orders from Washington. And these orders are to disregard all other atrocities, even ones much worse that Kosovo, especially in places where the US is involved. Focus your attention only on this disaster and pretend to yourself that the crisis is all about one evil man who is carrying out genocide. This is what we are being told by our media day and night. It's effective. Most people accept the marching orders. Then they say we've got to do something, like send ground troops.

The Pentagon and the European forces are strongly against it, mainly for technical reasons. I mean, it would be a catastrophe. Sounds easy to send ground troops, but think about it. First of all, it would not be easy to get them in, and would most probably take months to get them ready. It would mean facing a major guerrilla war that would probably level the whole region. That's what happens when you send in ground troops and cause greater catastrophes. It would simply escalate the atrocities.

Int: What steps do you think people who oppose this war should take now?

NC: There is no question that people of conscience must take action against this. What can we do to end this war? Same thing as always, there's no magical trick. It requires education, explanation, organising, demonstrating, exerting pressure... all things that we know. And this is very hard to do; it's not like flipping on a light switch. It takes work. \Box

This interview was first printed in The Activist peace magazine, in June 1999.

Excrement Happens

For centuries, society has been faced with a problem: what to do with the vast volumes of human waste produced by its population. Treated properly, human excreta can be a natural and beneficial fertiliser. But today, across the industrialised world, we are paying the price for two centuries of a 'get rid of it' approach to human wastes – and our soil is being poisoned as a result. **By Peter Montague**.

How It All Began

Humans began to lead a settled life, growing crops to supplement hunting and gathering, only about 10,000 years ago. For all time before that, humans "deposited their excreta – urine and faeces – on the ground, here and there, in the manner of all other land creatures."¹ The soil and its communities (including plants, small animals and micro-organisms) captured almost all of the nutrients in animal excrement and recycled them into new components for soil. In this way, the nutrients were endlessly recycled within the soil ecosystem and largely kept out of surface water.

As a result, what we call 'pure water' is low in nutrients, particularly the major nutrients nitrogen and phosphorus. Because these conditions have existed for a very long time, life in lakes, rivers and oceans is accustomed to the relative absence of these nutrients. Over the past couple of billion years, life has flourished in this low-nutrient environment, growing complex and interdependent in the process – an aquatic condition we call 'clean' and 'healthy'.

When a body of water is suddenly inundated with nutrients – especially nitrogen and phosphorus – things change drastically. One or a few organisms flourish and begin to crowd out the others. We can all recall seeing a body of water that is pea-soup green from overgrowth of algae. Such a water body is clearly sick, choked, its diversity vastly diminished.

Today, much of the surface water of the planet is in a state of ill health because of misplaced nutrients. And a main contributing culprit is misplaced human excreta.

East and West: Conflicting Views on Sewage Management

Long ago, human civilisations split into two camps regarding the management of excreta. Many Asian societies recognised the nutrient value of 'night soil' (as it became known). For several thousand years, and up until very recently, Asian agriculture flourished by recycling human wastes into croplands.

The opposing camp, particularly in Europe, had ambiguous feelings about human waste – was it valuable fertiliser or was it a nasty and embarrassing problem to get rid of?

In Europe, a pattern evolved: the first stage was urinating and defecating on the ground near dwellings. As population density increased, this became intolerable and the community pit evolved. For privacy, this evolved into the pit privy or 'outhouse' – a structure for privacy atop a hole in the ground. Despite what many people may think, the pit privy is not environmentally sound – it deprives the soil of the nutrients in excrement, and by concentrating wastes it promotes pollution of groundwater by those same nutrients.

Before the advent of piped water in the late 18th century, Euro-



Algal blooms in the oceans are often a result of sewage pollution.

pean towns stored excreta in cesspools (lined pits with some drainage of liquids) or in vault privies (tight tanks without any drainage). The 'night soil' was removed by 'scavengers' and was either taken to farms, or dumped into pits in the ground or into rivers. In general, Europeans never developed a clear and consistent perception of the nutrient value of excrement, as Asians had done.

In ancient Rome, the wealthy elite had indoor toilets and running water to remove excrement via sewers. Later, European cities developed crude sewer systems – usually open gutters but sometimes covered trenches along the centre or sides of streets – though they had no running water until the 18th or 19th century. The putrefying matter in these stagnant ditches did not move until it rained – thus the name 'storm sewers' – and many cities prohibited the dumping of human wastes into them.

The Birth of the Modern Sewage System

With the advent of piped water, things changed dramatically. In the USA, the first waterworks was installed in Philadelphia in 1802, and by 1860 136 cities were enjoying piped water systems. By 1880, the number was up to 598. With piped water, per-capita water use increased at least 10-fold, from 3-5 gallons per person per day or even more.

But as with every new technology, the piping of water brought new and unforeseen problems of its own. Water piped into homes had to be piped out again, and this caused cesspools to

overflow, increasing the problems of odours and of water-borne diseases. To solve these problems, cesspools were connected to the cities' crude sewer systems which ran along the streets. The result was epidemics of cholera. In Paris in 1832, 20,000 people died of cholera. Around the world, the combination of piped water and open sewers has consistently led to outbreaks of cholera.

To solve this problem, engineers designed closed sewer systems, pipes using water as the vehicle for carrying away excrement. This solution engendered a debate among engineers: some wanted to return sewage to agricultural land, others argued that 'water purifies itself' and wanted to pipe sewage straight into lakes, rivers and oceans. By 1910, the debate was over and sewage was being dumped into water bodies on a grand scale. This decision – taken for short-term reasons – was to prove extremely damaging in the long run.

Industry Changes the Rules

In the cities, the cholera epidemics abated. However, cities drawing their drinking water downstream from sewage discharges began having outbreaks of typhoid, caused by the emptying of sewage into clean water. This engendered another debate: whether to treat sewage before dumping it into water bodies used for drinking, or whether to filter drinking water. Public health officials favoured treating sewage before dumping it; sanitary engineers favoured dumping sewage raw and filtering water before drinking. Again, the engineers prevailed, again largely for reasons of ease and convenience. And again, this created unforeseen problems.

As cities began to filter and disinfect their drinking water, typhoid began to abate. But throughout the 20th century, as the West industrialised rapidly, industry developed a huge demand for low-cost waste disposal. Because sewers already existed, and because the public was paying for them, they were the obvious places for dumping industrial waste. As the pressure for greater waste disposal capacity increased, industrialised nations allocated vast sums of money to construct centralised sewer systems to serve the combined needs of homes and factories.

But sewers had been designed for natural human wastes, not industrial chemicals, and as industries began to use them as giant drains for their poisonous wastes, new and virulent dangers emerged. The nutrients in the excrement became mixed with industrial wastes, many of them toxic. So by the 1950s, essentially every body of water receiving piped wastes was badly polluted with a combination of excessive nutrients and toxicants. This led to a new demand: to treat wastes before dumping them into water. Thus began the 'treatment' phase of the 'get rid of it' approach to



The advent of modern sewers, in the 19th century, changed everything.

human waste; the latest stage in the adulterating of a clean, natural and even beneficial waste product by unnatural poisons.

The Failure of Sewage Treatment

The first stage in the process of modern sewage treatment is 'primary treatment' – screening out the dead cats and other 'floatables' from the sewage. All other nutrients and toxic chemicals remain in the waste water that is discharged to a river or ocean. Next comes 'secondary treatment' which speeds up the biological decomposition of wastes by forcing oxygen into them, by promoting bacterial growth, and by other means. This is an energy-intensive process and therefore expensive. Unfortunately it, too, leaves many of the nutrients and toxic chemicals in the discharge water.

This two-stage treatment process ends up by creating a new form of combined nutrients and toxins known as 'sludge'. Sludge is the de-watered, sticky black "cake" created in large quantities by modern sewage treatment plants. It contains everything that can go down the drains in homes and industries and which a treatment plant is able to get back out. In the US Federal Register of November 9, 1990, the US Environmental Protection Agency (EPA) describes sludge this way:

"The chemical composition and biological constituents of the sludge depend upon the composition of the wastewater entering the treatment facilities and the subsequent treatment processes. Typically, these constituents may include volatiles, organic solids, nutrients, disease-causing pathogenic organisms (e.g. bacteria, viruses, etc.), heavy metals and inorganic ions, and toxic organic chemicals from industrial wastes, household chemicals, and pesticides."

Industry is currently using 70,000 different chemicals in commercial quantities; any of these may appear in sludge. About 1,000 new chemicals come into commercial use each year, so any of these, too, may appear in sludge. A description of the toxicants that may be found in sludge would fill several books. The US General Accounting Office has reported – not surprisingly – that municipal sludge regularly contains radioactive wastes (from both medical and military sources).²

With hundreds of sewage treatment plants now producing toxic sludge in mountainous quantities, the next question was, what in the world to do with it? For many years, coastal cities had dumped sewage sludge into the oceans, where it created large "dead zones" that could not support marine life. New York dumped its sewage sludge 12 miles offshore; when that place developed obvious contamination problems, the dumping was moved to a spot 106 miles offshore, where, to no one's surprise, contamination soon devel-

oped. Other communities dumped their sludge into landfills, where it polluted their groundwater. Still others incinerated their sludge, creating serious air pollution problems, then landfilled the remaining ash or simply heaped it on the ground for the wind to disperse.

In 1988, the US Congress, in line with other government authorities across the industrialised world, outlawed the ocean dumping of sewage sludge. At this point, many communities faced a real waste crisis. There was no safe (or even sensible) place to put the mountains of toxic sludge that are generated every day by centralised sewage treatment systems.

It was at this point in history that US EPA – feeling tremendous pressure to 'solve' the sludge disposal problem – discovered that sewage sludge is really 'night soil' after all – the nutrient-rich product that has fertilised crops in Asia for several thousand years. The EPA, the latest in the long line of authorities tackling a serious problem in a short-sighted way, decided that the expedient thing to do with sewage sludge was to plough it into the land. Shortly after 1992, when the ban on ocean dumping went into effect, the EPA renamed toxic sludge 'beneficial biosolids', and began aggressively campaigning to sell it to the American people as fertiliser.³

The Official Poisoning of the Soil

The increasingly complicated methods of dealing with human wastes and industrial wastes combined had thus, in the USA, come full circle. The fertiliser value of human wastes had been officially recognised. What had been officially unmentioned was that the 'night soil' being spread on the fields typically contained thousands of industrial poisons. The EPA had overlooked, perhaps deliberately, two important differences between modern sewage sludge and unadulterated human waste.

Firstly, most of the nitrogen in human waste is in the urine and is water-soluble, so it is not captured in the sludge. Therefore, if sludge is going to substitute for commercial fertiliser, you have to use a lot of it to get enough nitrogen. And, secondly, when you add a lot of sludge to soil, you are also adding a lot of toxic metals and a rich (though very poorly understood) mixture of organic chemicals and, very likely, radioactive wastes as well.

In sum, ploughing sewage sludge into soils is almost guaranteed to harm many of those soils as time passes.⁴ And as we know from the ancients who poisoned their soils with irrigation salts, a nation that poisons its farmland is a nation that doesn't have a long-term future.

Rethinking the Sewage Problem

It is time that we in the West began to think again about how we deal with human waste. The present systems were not designed to produce useable products and therefore the design of present systems is the root of the problem.

I would suggest that three policy goals are needed. Firstly, where possible, the individual should practise 'sewer avoidance' – stay off or get off centralised sewer systems. Secondly, governments should promote low-cost, on-site resource-recycling technologies, such as composting toilets, that avoid polluting water and preclude wasting resources. Thirdly, water should be priced right – i.e. higher than at present – so that the market works to keep it clean, rather than contaminates it with excreta.⁵

None of this is as difficult as it might sound. For individual households, for example, real solutions are already available. An excellent new book by David del Porto and Carol Steinfeld, The Composting Toilet System,⁶ will dispel any fears you may have that composting toilets are a step backward. And with microflush toilets and vacuum-flush toilets now readily available, you can compost your household wastes into an odour-free product that is entirely satisfactory as agricultural fertilizer. And for larger buildings, the technology already exists for manufacturing building-



For decades, industrialised countries have dealt with their sewage problem by pouring untreated wastes into the sea.

scale waste systems based on 'anaerobic digesters', which produce methane gas and fertilizer. As human waste expert Abby Rockefeller said recently in an interview, "Surely, human ingenuity can do this."

The challenge before us is clear: we must find ways, such as those above, to deal with human wastes in a way that allows their potential to be realised. At the same time, we must keep those

Toxic industrial wastes should be managed by the industries that make them, not dumped into the environment that sustains all life.

wastes apart from the industrial poisons they are currently mixed with. It is time that industries realised that dumping their toxic byproducts into the nearest sewer will never be a sustainable way of dealing with them. Toxic industrial wastes should be managed by the industries that make them, not dumped into the environment that sustains all life.

You may say that none of this is 'realistic' – that we can't do any of it because we've been doing it another way for 100 years. But ask yourself what kind of people would dump their excreta into their drinking water in the first place. And what kind of people, faced with workable, cheaper, more environmentally sound alternatives would continue to insist that soiling their food, water and environment is still the best way of dealing with a problem that many of us prefer not to think about, in the hope that it will go away?

This article is based in large part on the excellent work of Abby Rockefeller, President of the ReSource Institute for Low Entropy Systems, 179 Boylston St., Boston, MA USA 02130; telephone (617) 524-7258. Un-referenced facts and sources are from her original work.

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The World Trade Organisation: The New World Constitution Laid Bare

When the Canada-US Free Trade Agreement was concluded in the 1980s, President Reagan described it as the "economic constitution of North America." Recently the Director General of the WTO, Renato Ruggiero, used similar language to describe the WTO. But the WTO is a constitution for corporations. Its rules take little or no account of people or the environment. This article explains why the WTO is such a threat. **By Steven Shrybman**.

WHAT IS THE WTO?

The World Trade Organisation (WTO), was established on 1 January 1995, and represents the culmination of an eight-year process of trade negotiation, known as the Uruguay Round.¹ 135 countries now belong to the WTO, and more continue to join.² The WTO is based in Geneva, and is administered by a secretariat which also facilitates ongoing trade negotiations, and oversees trade dispute resolution.

The WTO represents the most important element of an international corporate strategy to codify the rules upon which a global system of investment, production and trade depend. While this agenda is fundamentally the project of the world's largest corporations, it also enjoys broad support from many governments. Their enthusiasm is founded on the faith that sustained, marketdriven, growth will bring wealth and economic stability to their nations. Absent from this faith, of course, is any notion of ecological limits, or of the need to address how the proceeds of growth will be distributed. Also missing is any real evidence to support the grand claims of those promoting liberalised trade and investment rules.

THE WTO AND THE GLOBAL ECONOMY

The WTO represents a watershed in the process of establishing a truly global economic order. Because it lays out a comprehensive set of rules intended to guide all aspects of global economic activity, the WTO will undoubtedly exert a profound influence over the future course of human affairs. Indeed it is not unrealistic to regard the WTO as representing effective world government for the first time in human history. There are several reasons that justify such an assessment.

To begin with, we really do now live in an integrated global economy. Multinational corporations control more than one third of the world's productive assets, and the organisation of their production and distribution systems has little to do with national or even regional boundaries. Decisions about locating factories, sourcing materials, processing information or raising capital are made on a global basis, and any particular product may include components from several countries.³ The growing dimensions of global economic integration are also apparent in the rapid growth in international trade itself, which routinely exceeds that of even the world's most robust economies. To consolidate these processes of globalisation, the rules upon which it depends needed to be codified in binding international agreements – hence the WTO.

Another factor that explains the importance of the WTO con-

cerns the way in which it has extended the reach of trade rules into every sphere of economic activity. Historically, trade agreements were concerned with the trade of goods – for example manufactured goods and natural resource products – across international borders. But under the WTO, international trade agreements have been dramatically extended to include investment measures, intellectual property rights, domestic regulations of all kinds, and services. In other words, a great many areas of government policy and law that have very little, if anything, to do with trade per se. This explains why it would now be difficult to identify an issue of social, cultural, economic or environmental significance that would not fall within the ambit of these new, and very expansive, rules of "trade".

Because it lays out a comprehensive set of rules intended to guide all aspects of global economic activity, the WTO will undoubtedly exert a profound influence over the future course of human affairs. Indeed it is not unrealistic to regard the WTO as representing effective world government for the first time in human history.

But arguably the most important source of WTO authority and influence stems from the powerful enforcement tools it has available to ensure that all governments respect the limits on their authority imposed by its trade rules. Any government found in breach is vulnerable to sanctions that are too severe for even the wealthiest nation to ignore. For example, in the first trade complaint to be resolved under the WTO, US Clean Air Act Regulations were deemed to violate WTO rules. In consequence, the US was given two options – remove the offending provisions of its environmental statute or face retaliatory trade sanctions to the order of \$150 million a year.

While previous trade agreements allowed for similar sanctions, they could only be imposed with the consent of all GATT members, including the offending country. Now, WTO rulings are automatically implemented unless blocked by a consensus of WTO members. Moreover, under the rules of 'cross-retaliation', sanctions can be applied to any aspect of the offending country's international trade – or, in other words, where it will be felt the most.

The convergence of these factors explains why the WTO is

likely to emerge as the most important international institution ever to have been created.

A Bill of Rights for Multinational Corporations

Many have described WTO rules as an international bill of rights for multinational corporations. To appreciate why the WTO might be described in this way, consider the negotiation process that created it.

Because international trade has in the past been considered an arcane subject relevant only to commercial interests, trade negotiations have traditionally been conducted by trade ministers with no apparent awareness that other societal values might be at stake. For example, when the Canadian Conservative government of Brian Mulroney was asked what, if any, environmental assessment of the impending free-trade agreement with the United States had been carried out, it responded somewhat incredulously that its trade deal was entirely a commercial agreement and that the environment had not even come up once4 - a truly astonishing assessment about an agreement that dealt explicitly with energy, agriculture, environmental standards, forests and fisheries. Moreover, even as the ambit of trade negotiations grew to encompass many more spheres of economic activity, such as services or investment, no meaningful effort was made to include others in the negotiation process.

Thus, when government consulted on trade matters, it looked exclusively to the business community; that is, large corporations with a substantial stake in international trade. Trade advisory committees, with very few exceptions, represented exclusive clubs for multinational corporations.

Another important norm of trade negotiations is secrecy. Because of the strategic nature of the interests at stake, trade negotiations have always been conducted behind closed doors, with little being revealed until negotiations are virtually concluded. Not only is there no public input or accountability, but many governments – particularly those from developing countries – are also left guessing about negotiations which take place almost exclusively among a few key players.

When trade agreements finally do emerge, they are presented as an intricate and complex set of strategic, compromises that will unravel should amendments be proposed. In this way, the normal processes of parliamentary or congressional debate are superseded. Rather, law-makers are presented with a virtual ultimatum – accept the entire package of trade proposals or suffer the consequences of being isolated in a global economy. It would be difficult to conceive of a less democratic means of negotiation.

Because trade agreements are negotiated in this way, they reflect a myopic preoccupation with the interests of large corporations and reveal virtual indifference to the impacts of these commercial interests on other societal goals, such as environmental protection, democratic processes, workers' rights, or cultural integrity. If the WTO regime can accurately be considered an economic constitution for the planet, it is most certainly one that has been written by, and almost entirely for, the world's largest corporations.

The Agenda: Freeing Corporations from Government Regulation

The goal of the WTO is to deregulate international trade. To accomplish this (and with one important exception), WTO rules seek to limit the capacity of governments to regulate international trade – or otherwise "interfere" with the activities of large corporations. In fact, WTO agreements represent little more than extensive lists of policies, laws and regulations that governments cannot establish.

Some of these prohibit measures intended to regulate international commerce, such as controls on trade in endangered species or bans on tropical timber imports. But many others prohibit reg-



The WTO allows pollution control regulations to be overturned in the name of free trade.

ulations that might only indirectly influence trade, such as recycling requirements, energy efficiency standards or food safety regulations. Yet other rules go even further by prescribing government measures that have nothing to do with trade at all – for example, prohibitions against government efforts to regulate the activities of foreign investors.

The Challenges Ahead

Because the primary goal of WTO law is to limit government lawmaking and regulatory authority, serious problems will now arise for progressive environmental law and policy – which of course depend on such public controls. In fact, the establishment of freetrade agreements has already created substantial new obstacles to progress in areas of environmental protection, food safety regulation, species protection and resource conservation.

While the subject of international trade may be daunting, if we are to achieve critical environmental objectives, we must either abolish the WTO, or find a way to convert it into an institution that will foster, rather than undermine, environmental goals. This will clearly be a difficult challenge, but one not unlike the struggle waged several decades ago to inform governments and courts unconcerned with, and uninformed about, environmental protection and conservation goals. That resistance was overcome by informing and then mobilising public opinion, by fostering scientific research and by persistent determination. In the process, policy development and law-making processes were also made more open, democratic and accountable.

The emergence of the WTO will require many of these battles



Many of the consequences of the "leap of faith" into free trade that was accomplished by the WTO and other trade agreements are now becoming painfully apparent to a growing number of developed and developing countries.

to be fought again, if we are to stem the tide of globalisation and free trade that is already eroding the hard-fought gains we have achieved over the past three decades. Despite this, though, there are two important reasons to be optimistic.

The first has to do with developing a deeper understanding of the underlying causes of the environmental crisis. The corporate campaign for 'free' trade provides the opportunity to examine a host of environmental issues in their proper context, as symptoms of a more profound and systemic problem – unsustainable economic, resource and trade policies. Thus, while pesticides, or even a particular pesticide, can become the target of a national environmental campaign, little attention is paid to the agricultural policies that make the continued use of pesticides inevitable. Of course, regulating pesticides, protecting species, creating parks and controlling pollution are important goals – but we need now to move beyond the symptoms to tackle the root causes of these problems.

The other reason for hope has to do with the need for binding international agreements to confront global environmental problems, such as climate change and biodiversity loss. Ironically, in this regard, the WTO could actually be a model for such international environmental agreements. The WTO reveals that when governments are motivated, they will sign on to forceful, proactive and effective international agreements. The challenge, of course, will be to force these same governments to adopt similarly enforceable international agreements for the purposes of achieving the goals of global ecological security rather than to guarantee the narrow interests of large corporations and foreign investors.

THE WTO AND THE ENVIRONMENT A Brief History of the Debate

Canadian environmentalists were among the first to raise concerns about the relationship between international trade and the environment during the Canada-US free-trade negotiations nearly ten years ago. They also played an important role in sounding the alarm that brought these important issues to the attention of environmentalists in the United States, Europe and elsewhere.

As they predicted, trade dispute processes have now become a popular weapon for attacking environmental and conservation measures across the world. Indeed, a GATT challenge to US Marine Mammal Protection legislation played an important role in gaining the attention of US environmentalists and law-makers during the recent NAFTA debates. In fact, trade and environment issues actually became so troublesome in the US that NAFTA was amended to include (nominal) environmental concerns.

The most significant of these amendments provided some protection from free-trade rules for certain multilateral environmental agreements, such as the 1992 Climate and Biodiversity conventions. The other accommodation to the environmental groups that were foolishly willing to support NAFTA⁵ was the establishment of the North American Commission on Environmental Co-operation.

The WTO Committee on Trade and the Environment

During the early nineties, similar developments were also taking place in Europe and elsewhere, and the environmental implications of the Uruguay Round trade negotiations began to emerge as important issues. However, environmental concerns never achieved the prominence needed in this larger global context to



force amendments to the agreement that created the WTO. Instead, a long-dormant GATT Committee on Trade and the Environment was reconstituted as the WTO Committee on Trade and the Environment (CTE). The CTE was given a very broad mandate and in late 1996, reported to the first biennial meeting of the WTO in Singapore. While few environmentalists knew of its existence, a handful of environmental groups became actively engaged in its discussions, which ultimately centred on three issues:

- The relationship between the WTO and trade measures authorised by several multilateral environmental agreements (MEAs), such as the Basel Convention on Toxic Wastes, the Montreal (ozone) Protocol and the Convention on the International Trade in Endangered Species (CITES).
- The use of eco-labelling, a way to convey information to the consumer about the product or about the production or harvesting processes associated with that product.
- The effects of environmental measures on market access, "considering the benefits of removing trade restrictions."

It is telling that the Committee's discussions had little to do with broadening environmental initiatives in the WTO context. In fact, in important ways, the Committee has actually become a forum for further asserting the pre-eminence of trade over environmental goals. For example, the Committee has asserted the right of a WTO member to challenge measures adopted by another member, even when taken in accordance with the provisions of a multilateral environmental agreement to which it is a signatory. While few anticipated that the committee's work would actually undermine the integrity of agreements such as the Climate Convention, this is the likely effect of its deliberations. The same criticism can be





made of the Committee's discussions about eco-labelling, where environmentalists have again been on the defensive to justify ecolabelling schemes intended to inform consumers about the environmental impacts of harvesting or production processes.

The Defeat of the MAI – an Important Breakthrough

In the autumn of 1998, the forward march of global free trade suffered a significant defeat when efforts to establish a Multilateral Agreement on Investment (MAI) under the auspices of the Organisation for Economic Co-operation and Development (OECD) had to be abandoned. The pivotal moment arrived when the Government of France decided to withdraw from negotiations. In making the announcement to abandon OECD negotiations, France released a report explaining its decision. Prominently featured among the reasons cited were concerns about the impact of the MAI on its sovereign prerogatives to protect culture and the environment. On the subject of the environment, France explicitly acknowledged the critical role that environmental groups had played in exposing the impacts of the MAI on environmental law and policy.⁶

Indeed, the environmental critique of the MAI was among the most powerful exposés of the disastrous consequences that this international treaty for investor rights would have delivered. The importance of the environmental analysis of the free-trade and investment agenda lies in both its accessibility and its universal appeal. While the subject of deregulation may seem obscure to many when it comes to such matters as financial services or airline competition, virtually everyone understands the critical role that law and regulation must play when it comes to protecting the environment and conserving natural resources. Public opinion polling consistently reveals that when it comes to the environ-



Under WTO rules, it is illegal for any country to ban the import of fish caught with driftnets which also kill dolphins. Left: Legislating against environmental destruction is, according to the WTO, an illegal 'restraint of trade'.

ment, people expect the government to play a strong and determined role.

Many of the consequences of the "leap of faith" into free trade that was accomplished by the WTO and other trade agreements are now becoming painfully apparent to a growing number of developed and developing countries. This has led to a much broader and sophisticated understanding of the impacts of this global agenda than existed a scant five years ago when the WTO was created. So far, the debate about trade and the environment has been kept at the margins of the WTO, and the incremental approach adopted by some environmental groups has yet to yield any meaningful gains. At the same time, trade regimes have emerged as powerful new constraints on the progress of environmental law and policy. Moreover, the proliferation of trade disputes concerning environmental, conservation, public health measures - all of which have sided with the interests of trade over the environment - has underscored the need to develop a much more aggressive agenda for changing WTO rules. If this goal is to be realised, environmentalists are going to have to play a central role. This will require achieving some measure of trade literacy. The obscurity of WTO rules is a critical and strategic asset for those promoting the globalisation agenda. It is for the purpose of demystifying the rules of this new regime that we next turn to its essential elements.



AN ACTIVIST'S GUIDE TO THE KEY AGREEMENTS OF THE WTO

The WTO is comprised of more than a dozen distinct trade agreements.⁷ Among these, and forming the essential platform upon which the others are established, is the original General Agreement on Tariffs and Trade – the GATT – which was first negotiated in 1947 as part of the Bretton Woods agreements that also established the International Monetary Fund and World Bank. Other agreements of critical importance from an environmental perspective include:

- 2. The Agreement on Technical Barriers to Trade (TBT)
- 3. The Agreement on Sanitary and Phytosanitary Standards (SPS)
- 4. The Agreement on Trade Related Intellectual Property Rights (TRIPS)
- 5. The Agreement on Trade Related Investment Measures (TRIMS)
- 6. The Agreement on Agriculture
- 7. The Agreement on Dispute Resolution

The following offers a brief description of these key elements of the WTO regime.

GATT 1994

The fundamental infrastructure of the WTO can be found in the GATT which has now been incorporated into the WTO, where it is described as GATT 1994 (throughout this text, simply as GATT). For present purposes, the most important provisions of this core trade agreement can be found in three Articles.

Article 1 - Most-Favoured Nation Treatment (MFN)

The MFN rule requires WTO member countries to treat "like" products from a WTO member as favourably as it does from any other member. In other words, discriminating against foreign producers is prohibited, This rule raises serious doubts about the validity of international environmental agreements, which actually require that less favourable treatment be accorded to countries if, for example, they are not living up to their obligations under these environmental conventions. As a recent WTO case involving banana trade between several Caribbean islands and Europe illustrates, the MFN rule also prohibits the use of special trading relationships to support development assistance programmes to poorer nations.

Article III - National Treatment

The NT rule requires all trading parties to treat "like" products of member nations as favourably as it treats its own domestic products. Thus, under the WTO it is unlawful for governments to discriminate against goods because of concerns about the destructive or unethical processes that may have been used to produce or harvest them. By the same measure, it is unlawful under these rules for governments to favour goods on the grounds that they are the product of more sustainable or humane systems of production.

Also, when the principle of National Treatment or Most Favoured Nation status is applied to foreign investors – read corporations – the result spells disaster for efforts to foster domestic economic development. Often multinationals are given more rights in deciding exactly how a nation should 'develop' than that nation's government. Moreover, these rules abdicate to international market forces the critical role of allocating precious and often non-renewable natural resources.

Article XI - Elimination of Quantitative Restrictions

Under Article XI, WTO members cannot limit or impose quantitative controls on exports or imports through quotas or bans. But duties, tariffs and other charges are allowed. This is also problematic from an environmental perspective. Consider the implications of such a rule when applied to such measures as an export ban on unprocessed resources such as raw logs, or as an embargo against the export of agricultural commodities from a country suffering food shortages, or as a prohibition against trade in endangered species, or to ban the export of hazardous wastes to undeveloped countries entirely ill-equipped to manage them safely.

The Agreement on Technical Barriers to Trade (TBT)

It is telling that, in the jargon of international trade law, all environmental standards and regulations are, prima facie, considered technical barriers to trade. The actual provisions of the TBT agreement are detailed and complex, but reduced to bare bones, it establishes:

- An international regime for harmonising environmental standards that effectively creates a ceiling but no floor for environmental regulation
- A detailed procedural code for environmental law-making, and regulatory initiatives that would be difficult for even the wealthiest nations to meet.

When nations fail to observe these new and pervasive constraints on their law-making authority, they are vulnerable to international trade complaints and sanctions. It isn't surprising, then, that TBT rules have emerged as important new weapons for challenging government regulatory initiatives. Canada has recently relied upon TBT rules to challenge asbestos regulations in France.

The Agreement on Sanitary and Phytosanitary Standards (SPS)

The provisions of the oddly-named SPS are very similar to those found in the TBT, but deal with laws and regulations that concern food and food safety, including pesticide regulation and biotechnology. As with TBT rules, the SPS has proven a useful device for undoing government regulatory initiatives that are unpopular with large corporations. As interpreted by the WTO, the SPS also precludes the 'precautionary principle' as a justifiable basis upon which to establish regulatory controls when the risks warrant action, even in the face of scientific uncertainty about the extent and nature of potential impacts.

One casualty of this particular WTO Agreement has been efforts to negotiate a "Biosafety Protocol" to the Biodiversity Convention, with various countries, mainly the US, threatening WTO trade action should the Protocol require that host countries first consent to transborder shipments of genetically modified organisms. Yet another important feature of this WTO agreement seeks to remove decisions about health, food and safety from



national governments by delegating them to international standard-setting bodies such as the Codex Alemantarius – an elite club of scientists based in Geneva. Because of its location and composition, Codex is an institution that is singularly inaccessible to all but a handful of international corporations and business associations that are capable of maintaining delegations in Geneva. Not surprisingly, Codex standards often fall substantially short of those established by jurisdictions closer and more responsive to the interests and views of consumers and health advocates.

The Agreement on Trade Related Intellectual Property Rights (TRIPS)

By employing the convenient device of simply attaching the prefix "trade related" this WTO agreement transforms an entire domain of domestic policy and law into one that is the fitting subject for WTO regulation. The essential thrust of the TRIPS agreement is to compel all WTO member nations to adopt and implement US-style patent-protection regimes. The effect of these rules is to virtually provide US and European multinationals with global patent rights which can now be enforced by retaliatory trade sanctions. At the same time, the rights of indigenous communities to genetic and biological resources that are held in common are ignored. The result is to facilitate the appropriation of the genetic commons by corporate interests which can then demand user rents from the very communities that should be considered the proper 'owners' of the genetic resource.

The Agreement on Trade Related Investment Measures (TRIMS)

While this investor-rights agenda is constructed on the same platform of National Treatment and Most Favoured Nation treatment that is common to all WTO Agreements, it goes much further in two critical ways. The first is to allow individual investors virtually unqualified access to international enforcement mechanisms that may be invoked by them directly against nation states. It would be difficult to overstate the implications of this radical departure from the norms of international treaty law which, with the exception of international human rights, has never created rights even for the benefit of individuals, let alone multinational corporations.

In other words, under NAFTA and MAI prototypes, for the purposes of enforcement, foreign investors are accorded the same status as nation-states. The other critical departure of this proposed investment regime from the norms of international trade law is to be found under the heading Performance Requirements, which actually constrain the implementation of domestic investment regulation, even when applied only to domestic investors.

The Agreement on Agriculture

The free-trade vision expressed by the WTO Agreement on Agriculture is of an integrated global agricultural economy in which all countries produce specialised agricultural commodities, and supply their food needs by shopping in the global marketplace. Food is grown, not by farmers for local consumers, but by corporations for global markets. The consequence of this global model is a disaster for the food security of poor countries, as subsistence farms are lost to export producers, but are also extremely problematic for environmental and food safety reasons.

Consider, for example, that the globalisation of food production and trade necessarily requires that agricultural commodities be transported long distances, and be processed and packaged to survive the journey. In addition to sacrificing quality and variety for durability, this system of agricultural trade requires enormous inputs of energy. In fact, when account is taken of all energy inputs, global food production and trade probably consume more fossil fuel than any other industrial sector. That is why international agricultural trade policies are likely to substantially increase greenhouse gas emissions and make climate objectives much harder to achieve.

Other important aspects of the WTO agenda for agriculture can be found in other WTO agreements dealing with food safety standards and biodiversity (Sanitary and Phytosanitary Standards and TRIPS). When taken together, these agreements set the stage for the next 'Green Revolution' – the one that spreads biotechnology, in the form of genetically modified foods, across the world.

The Agreement on Dispute Resolution

Prior to the WTO, trade dispute resolution was a matter for negotiation and compromise. While trade panels could pass judgement on whether countries were in breach of their obligations, compliance ultimately depended upon the willingness of each memberstate to accept the rulings of trade panels. This was the case because, under GATT rules, retaliatory trade sanctions could only be imposed against an offending nation with its consent. With the creation of the WTO, the requirement for that consent has been removed and trade panel rulings are legally enforceable virtually as soon as they are rendered.

It is also important here to stress that enforcement under the WTO means recourse to the most potent remedies that exist under international law – retaliatory trade sanctions. Moreover, by the norms of conventional legal processes, WTO dispute resolution takes place with blinding speed. Cases are routinely heard, decided, appealed and resolved within a year of being brought. Indeed, it would be impossible to find, in any other legal regime, either criminal or civil, sanctions as quick and effective as those provided by the WTO. It is the effectiveness of its enforcement regime that ultimately accounts for the enormous influence that trade rules will now exert over the decisions of governments.

However confused the reasoning, a review of WTO rulings on environmental or conservation measures reveals two consistent and common themes. The first is the expansive reading given to rules that limit government options that might, even indirectly, interfere with trade. The second is the exceedingly narrow interpretation given to trade provisions that might create space for environmental exceptions to the free-trade orthodoxy. This double whammy has spelled disaster for every environmental or conservation regulation that has found itself in the cross hairs of a trade dispute panel. In fact, none has survived the encounter and, in every case, trade panels have found several grounds on which to rule against the environmental regulation.□

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- See The Results of the Uruguay Round of Multilateral Trade Negotiations: The Legal Texts, Reprinted by the WTO in 1995 – ISBN 92-870-1124-4.
- Among the various trade agreements for which the WTO has responsibility is the original General Agreement on Tariffs and Trade (GATT) as that agreement has been amended, and a number of other agreements that are specific to various aspects of international trade such as agriculture, technical regulation, investment, services and intellectual property.
- See for example, Robert Reich, The Work of Nations: Preparing Ourselves for the 21st Century Capitalism 113 (1992).
- 4. The Federal Minister for International Trade in response to a question posed on the House of Commons Order Paper, see Frank Tester, "Free Trading the Environment", in Duncan Cameron, ed., *The Free Trade Deal*, Toronto: Lorimer and Company, 1988.
- 5. With the exceptions of Friends of the Earth, the Sierra Club and Greenpeace, other major US environmental groups were willing to support the first major initiative of a newly-elected President in consideration of these marginal reforms. In Canada, environmental groups were almost unanimous in their opposition.
- See Lalumière and Landau, "Report on the Multilateral Agreement on Investment (MAI)"; published by France's Ministry of the Economy, Finance and Industry, 1999.
- 7. Op.cit. I

A View from the Headwaters

In this remarkable essay, adapted from a speech given in Brazil in 1988, the late Colombian anthropologist Gerardo Reichel-Dolmatoff presents a powerful view of the Amazon river as seen by the area's tribal inhabitants. In doing so, he questions the validity of our modern views of landscape and nature. **By Gerardo Reichel-Dolmatoff.**

Coming from Colombia, I can say that I come from the headwaters of the Amazon. When I leave the country, I fly over its many arms and branches stretching out from this great body of water. In saying this I have used the vocabulary of anatomy. In speaking of the river I have mentioned its head, its body, its arms. Many languages use anatomical terms when describing landscape features, but most people, when being reminded of this fact, would find themselves at a loss when asked to explain the reasons for this choice of words. To people belonging to a scientific, technological, rationalistic age, it does not make much sense to use such animistic terminology, to speak of a river mouth, of the body of a lake, or the foothills of a mountain. If we come to think of it, there is something archaic, something romantic about this kind of language.



To destroy the forest is to destroy life itself.

But the Indians can tell us what is meant by all this, and we should heed the Indian words because they convey to us the true meaning of these terms, a meaning we have lost in the course of our frantic advance towards what we call progress.

To most Colombian Indians, and especially to those of the north-west Amazon, the river is a human body, a living organism. The river is life itself, stretched out in a linear sequence of vital events, between two power spots: the headwaters and the river mouth. There has always been something strangely enticing about headwaters the world over. They are thought to be the sources of great energies, the sources of wisdom, the spots where essential transformations may occur under the guardianship of benevolent nature spirits.

According to the Indians, people who live at the headwaters of a river are more tradition-oriented; they have more esoteric knowledge than others. Besides, there is more wildlife at the headwaters and so they are good hunting grounds. But hunting, of course, is not devoid of danger because all game animals stand under the protection of powerful spirits that might cause harm to the hunter

To Colombian Indians, and especially to those of the north-west Amazon, the river is a human body, a living organism

who kills too many of their species. So the headwaters are very sacred; they are a very special part of a river drainage.

The other extreme of the river's lifeline is its mouth. The true power of a river is said to reside at its mouth. It is thought that both the headwaters and the mouth of a river are enclosed by invisible boundaries forming a hexagonal space, modelled on a rock crystal. The hexagon of a river mouth is larger and more powerful than that of the headwaters. When leaving the hexagonal space of the river mouth, shamans say that one has become a transformed person, that one is better and wiser, that from now on one will avoid noisy places and bad company.

The Indians say that the river is life; this idea is expressed in many images. In the first place, in many Creation Myths, embryogenesis is said to have taken place in a lake, in a riverbed, in a deep pool of the river. The slow evolution of embryonic and foetal development took place in a strictly sequential line of womb-like pools in which the incipient being acquired the faculties that made it human.

In another image, the river is a model of ethnogenesis, of cultural origins. The Tukano Indians call themselves Anaconda people and believe that mankind was born at the river mouth and then travelled upstream in a huge canoe shaped like an anaconda. At certain spots, people went ashore and, one by one, acquired the fundamental institutions of their society and culture. There is a spot where they danced for the first time; another spot where they learned the first songs; a spot where they cleared the first fields; a





To Colombian Indians, the Amazon river is a living organism.

spot where they built the first maloca; another spot where they had their first hallucinatory experience; a spot where the rules of exogamy were established. In this manner the entire river landscape comes alive, because every spot along the river has its name, its place in myths and visions, its place in genealogies and its particular significance to the passer-by. Every bend in the river is a reminder of the great serpent's coils and, at the same time, the anaconda of mankind's and nature's origin is a projection of the Milky Way.

In some languages of the north-west Amazon, the word for river or water is the same as the word for health, for medicine. When the Indians see stagnant, polluted waters they say the river is ill; but when the current is swift and clear the river is healthy.

In another image, the river is a model for individual adult life, a metaphor which is explained in the following terms: a river always adapts its course to the relief of the landscape by flowing along its deepest parts; by sheer gravity it hollows out its bed, by moulding itself around mountains and hills, and across plains and swamps. This is how a person's life should be: a slow process of adaptation to whatever circumstances that might arise. When the river meets an obstacle, a range of hills or a huge rock, it gently flows around it; but when it arrives at an abrupt drop, a steep decline of the surface, then it shoots straight ahead and throws itself in thundering falls and rapids over the boulders, only to expand again peaceably after it has reached flat ground. This is the way life ought to be. It should adapt itself, it must avoid head-on collisions, but it should also be prepared to run risks and push straight ahead until the landscape opens up again and the current flows undisturbed.

The river is life because water is life. In some languages of the north-west Amazon, the word for river or water is the same as the word for health, for medicine. When the Indians see stagnant, polluted waters they say the river is ill; but when the current is swift and clear the river is healthy. When a man works hard and perspires profusely he is in good health because then "the water circulates", as the Indians say.

On a higher level of abstraction, the river becomes a model of man's process of spiritual development. It is what the Indians call "the path", what other religions or philosophies would call tao, the Way to Perfection, to fulfilment, to oblivion. In fact, in the shamanic idiom, the Vaupés river is called "river of transformation".

We all have been marked by a cheap stereotype of Amazonian Indians: a man or a family peacefully paddling a canoe. But to the Indians, the meaning of this picture is immensely more complex. River travel is life but it is much more than life. On the river, man finds food; it is there he meets his kinsmen and where he meets women; it is on the river that he listens to the sounds of the waters and the forests and, often, it is on the river that he meets his death. River travel, the image of man penetrating upriver, over rapids and falls, over whirlpools and from one bend of the river to another, constitutes a recurrent visionary theme in dreams, hallucinations and myths.

And then there is the forest. The forest has different dimensions; it offers other resources and all of these have their spiritowners and therefore require different behavioural norms. Above all, there are the game animals. Between the hunter and the animals he kills, there exists a relationship of reciprocity. The spirits of dead or frightened animals take their revenge by causing illness to the hunter and his family. In fact, the animals are "hunters" in



Child of the Yanomami tribe, Brazilian Amazon.

their own right, in that they "hunt" people with diseases, accidents and nightmares.

In order to establish and maintain a viable relationship between the hunter and the hunted, people must observe many dietary and sexual restrictions. The former have two complementary functions: on the one hand they act as controls, as deterrents to overhunting; on the other hand, they serve to mask human body odours. The consumption of peppers, for example, or the smoke of burning pitch will make the game animals disregard any human scent while the consumption of fatty or oily substances "makes the hunter visible" (as the Indians say) by his strong body odour.

To the Indians of the north-west Amazon, the river and the forest are living organisms, kept alive and fertile by the cosmic energy of the Sun Father. This father figure is in continuous exchange

I have seen shamans carefully measuring out the adequate amount of fish poison to be put in a creek; I have heard them interpret dreams in terms of game conservation, explaining that the frightening appearance in a dream, of a certain animal, was a warning that the species was being over-hunted.

with our Earth, which is a female principle. Between the two – solar energy and the Earth's fertility potential – exists a circuit; whatever man subtracts from it for his sustenance, be it fishing, hunting or harvesting, he must return by saving energy through personal sacrifice. This principle of "saving" is reflected in the conscious and planned conservation of natural resources.

Most adult people are quite aware of this principle, but the true power of planning and decision-making in these ecological matters lies in the hands of shamans and elders. I have seen shamans carefully measuring out the adequate amount of fish poison to be put in a creek; I have heard them interpret dreams in terms of game conservation, explaining that the frightening appearance in a dream, of a certain animal, was a warning that the species was being over-hunted. Shamans will control the felling of trees, the firing of clearings; they will control house construction, canoe making, the brewing of beer, the processes of daily food preparation, and a great multitide of other activities.

In the evening, the men will sit around their fires and talk, and in these nightly conversations they will refer to the change of seasons, the appearing in the sky, the water level and the current of

I have seen many irreparable changes in the natural environment brought about by human agency; I have seen the ancient deserts of central Asia and I have seen the rapid expansion of modern deserts on the plains and mountains of Colombia. But no single case has impressed me more than what is happening, and what might be happening, in the Amazon Basin.

the rivers and creeks, the animals they have seen and heard, the fruits that are ripening in the fields or in the forest. Every few weeks there will be a slight change in the subject matter of these nightly talks, and the seasonal cycle or rainy or dry months will mark major changes in emphasis. There will be talk of bird migrations and of fish runs; fields must be fired and planted. And night after night people talk while the shamans and elders listen and occasionally ask some questions.

In the shamans' minds, all this information will be organised into structured knowledge which henceforward, for the next few weeks, determines their activities, be they expressed in ritual, in recommending hunting strategies or in arranging social gatherings. For each season of the year, for each distinct shorter timespan, and for each ecosystem, all behavioural norms have to be re-adapted and co-ordinated anew.

And this is why the Indians' knowledge is so vital. The great "energy" potential of soils, plants, game animals and fish has to be redistributed to the cosmic energy circuit by rituals, recitals, myths and admonitions which, in their totality, prescribe a way of life. If observed in their full context, these norms constitute an integrated system. For thousands of years, the Amazon Basin has been inhabited by Indians who knew how to conserve their habitat; we have archaeological evidence for their demographic density and the cultural inventiveness of these peoples.

Of course, I am quite aware of the fact that, occasionally, the Indians have contributed to the destruction and degradation of their lands, especially when acting under the pressure of encroaching mestizo peasants, but as a general rule they have managed their natural environment with ecologically-sound land use planning. But the pressure of outside forces upon the Amazon environment is increasing day by day. In the course of my travels, and of long years of field experience in Colombia, I have seen many irreparable changes in the natural environment brought about by human agency; I have seen the ancient deserts of central Asia and I have seen the rapid expansion of modern deserts on the plains and mountains of Colombia. But no single case has impressed me more than what is happening, and what might be happening, in the Amazon Basin.

In speaking of Colombian Indians, I have mentioned some isolated customs, some animistic beliefs and shamanistic images such as might be described for many aboriginal societies of the tropical rainforest or the Andes. But what I want to emphasise is this: these beliefs and attitudes toward life, these visions of the universe, these hundreds of little things a person does or thinks or avoids, form a highly-structured order.

In myth and ritual, in conversation and daily activities, the Indians express deeply-felt beliefs. During an Indian's entire life, there is a constant, more or less conscious, interplay between the individual and the way in which he perceives the environment. There are shapes and colours, movements and gestures, sounds and smells; there are different temperatures, different flavours to taste, things to touch, air to breathe. There is the power of the spoken word, the rhythm of music, the bond of kinship. All these manifold sensations, perceptions and feelings are consistently coded and carry specific meanings, the total message of which is life – a well-adapted life.

Every single musical instrument, every single feather in a headdress, every dance-step or body gesture is imbued with a specific meaning. And to these are added dietary restrictions, the rules of food processing, hunting and fishing, the clearing of a field, the firing of a clay vessel or the manufacture of a basket. And then there are dreams and visions, visions induced by the controlled use of hallucinogenic drugs, or by deep meditation; and from these visions, a person awakes with the certainty that what he has seen or heard and felt in that other dimension was true.

The sounds of the river and the forest, at different times of day or night, may be warnings or encouragements; the screech of a parrot, the eyespot pattern on a fish tail, the smell of rotten wood or of an aromatic herb may determine a man's activities and thought for a day or a week. In this manner, the person is continuously exposed to messages which, in all essence, are of a biological nature because they mainly refer to the following rules: to find the right person to marry, to find the right food to eat, and to obtain both in the right way, without upsetting the balance – the energycircuit" – that links man to his society and his environment.

How to read the signals the environment is sending out, a person has to learn through myth and ritual, through the long recitals of genealogies, the casting of spells, and above all, through the nightlong conversations of shamans and elders who are the true suppliers and transmitters of knowledge made wisdom. We should never underestimate this learning process, because it is an exacting mental discipline which eventually enables people to live in nature and with nature, and in society.

Our cosmovision is based upon our science; the Indians' is based upon their knowledge. Of course, we want to continue in our world which, for better or for worse, is our creation. But in

We may know that we need the Indians; we may know that the ruthless exploitation of natural resources has limits; but the leading intelligentsia and their development agencies recognise no limits to their allembracing technology.

order to live in it, here, today, tomorrow and in the future, we need the Indian's knowledge. And here I am referring not only to the practical knowledge of the Indians, to the sort of things a peasant knows. What I am trying to say is that the Indians' way of life reveals to us the possibility of a separate strategy of cultural development; in other words, it presents us with alternatives on an intellectual level and on a philosophical level. We should keep in mind these alternative cognitive models.

The conservation of the Amazonian is not a visionary scheme of ecologists and romanticising anthropologists; it is a vital necessity for mankind on a global scale: for the study of biological evolution, the study of soil-plant co-evolution, the study of species diversity; to understand the linguistic, ethnographic, and biological diversity of human societies. We need the Amazon for its enor-



Every part of the Indians' dress is imbued with significance.

mous human potential, quite apart from its economic or technological promises.

Up to this point, I have been writing this article as a humanist, as an intellectual, as an anthropologist who is profoundly concerned about the future of the Indians and their natural environment. But now I shall begin to write as a rationalist too: as a person who is acutely aware of the realities of our present times, and who knows that the future lies in the hands of the intelligentsia, of the technologists and bureaucrats. It is they who have the power, and according to them the Indians are primitives who have to be integrated; according to them, nature is something that has to be exploited for the benefit of man.

We may know that we need the Indians; we may know that the ruthless exploitation of natural resources has limits; but the leading intelligentsia and their development agencies recognise no limits to their all-embracing technology. We have to be realistic, and accept the fact that the Indian world is on the wane. The Amazon basin and many, many other, formerly remote, regions of the Third World are being opened to outside influences and to technological development. In some regions this process will be slower and less turbulent than in others; some aboriginal societies will be able to re-adapt, but others will become profoundly modified, and some will perish altogether, biologically, culturally, linguistically. As anthropologists and biologists, we know only too well that these changes are part of the historical scheme of things.

These are disturbing thoughts, to say the least, and I wish I could be more positive when thinking of the future of rainforest Indians and aboriginal peoples in general. But in fifty years, I have seen too many traditions being lost; I have seen entire tribes disappear; I have seen too much misery among gentle, helpless people.

Although I know that the Indians' world is on the wane, I believe that this knowledge does not exempt us from certain obligations. So, here, I shall attempt to suggest a few approaches to these problems; I shall try to make an effort to envisage a better future for the Indians, by suggesting a few personal ideas.



Between man and animal, there exists a relationship of reciprocity.

In the first place, I think we should make a combined effort to study the Indians' knowledge of their biotype, taking into account not only our but above all their concepts of ecosystems. Every square kilometre of forest contains a library of important biological, cultural and psychological information, and if we study it in the company of the Indians our insights in all these fields will be enormously enriched. The death of an old Indian who never had the chance to share with us his knowledge of the forest and the river is the equivalent of a whole library disappearing. If we undertake this study alone, we will get a mere inventory but if we work together with the Indians our insights will be greatly enriched by a kind of knowledge which, at present, still lies beyond our experience. For 500 years we have witnessed and played along with, the destruction of the Indians; now we are witnessing the destruction of the natural habitat. What are we waiting for?

There can also be no doubt that as anthropologists, biologists

and ecologists we possess an enormous amount of informaiton, or practical field experience, and of the many forms of human vulnerability and of the destruction of the natural environment. By tr5ansforming this information into practical knowledge, in a manner that would make it understandable and convincing to national leaders and planning agencies, we can influence the process of decision-making; we can convince those in power of the biological and social necessity to conserve these lands; and we can convince them of the dignity and value of our Indian societies.

It is not sufficient to say that what we owe to the Indians is potatoes, maize and quinine. It is not sufficient to retell their myths and tales in florid Portuguese or Spanish or to stage their

How to read the signals the environment is sending out, a person has to learn through myth and ritual, through the long recitals of genealogies, the casting of spells, and above all, through the nightlong conversations of shamans and elders who are the true suppliers and transmitters of knowledge made wisdom.

dances in a pseudo-Indian setting on television. What we must show is the Indian's philosophy of life, their cosmogonic and cosmological schemes, their ethical and aesthetical attitudes. What we must show is their courage of choice, their option of other ways of life, different from ours; the courage and genius of having built their societies, their cultures based upon an astonishing combination of realism and imagery.□

This article is adapted from Gerard Reichel-Dolmatoff's opening address to the First International Congress of Ethnobiology, which took place in Belem Do Para, Brazil, in July 1988.

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THE AGE OF SPIRITUAL MACHINES

by Ray Kurzweil Orion Business Books, 1999, 388pp, £18.99

64 F irst let us postulate that computer scientists succeed in developing intelligent machines that can do all things better than human beings can do them. In that case all the work will be done by vast, highly organised systems of machines and no human effort will be necessary. Either of two cases might occur. The machines might be permitted to make all of their own decisions without human oversight, or else human control over the machines might be retained [by an elite].

"...If] human control over... machines [is] retained... and if the elite [who control them are] soft-hearted liberals... they may decide to play the role of good shepherds to the rest of the human race. [But] life will be so purposeless [for the majority] that they will have to be biologically or psychologically engineered to make them... harmless. These engineered human beings may be happy in such a society, but they most certainly will not be free."

A man who could write these words would, to many people, be a fantasist who mistook science fiction for reality. And at the very least, their author – Theodore Kaczynski, otherwise known as the Unabomber, a former university professor who tried to murder several American scientists – was unbalanced in mind.

But Ray Kurzweil takes Kaczynski's speculations – and some even more startling than those – very seriously. And Kurzweil is no lightweight or loony. He's credited with the first print-to-speech reading machine for the blind and other devices

Reviews

for the disabled, and has contributed to other significant advances in Artificial Intelligence. M.I.T., the world's leading technical university, has honoured him as both Inventor and Engineer of the Year.

Dr Kurzweil argues that technological development will proceed at such a breakneck pace in the next few decades that before the end of the next century humanity will, for all intents and purposes, have merged with its (information, genetics and nano-) technology and have moved beyond biology as we know it.

He bases his case on what he terms a universal law of accelerating returns, found in certain kinds of highly complex systems. Information technology, it's argued, provides a prime example of this. Here it's known as Moore's law, whereby integrated circuits double in complexity every year to eighteen months (a phenomenon first observed in 1964). By 1988 computer memory cost one hundred millionth of what it did in 1950. Since then, processing speed has continued to increase exponentially. In 1999 US\$1,000 buys computing power roughly equivalent to the brain of an insect. Extending the trend, by 2009 a \$1,000 personal computer (in 1999 dollars) will be able to perform about a trillion calculations per second. By 2019 the same money will buy a computing device with the massively parallel computational ability of a human brain (10 to the 15 calcula-

would be simple - such as distinguishing one face from another - turned out to be extremely complex; while solving some mathematical puzzles which are fiendishly difficult for people is easy for computers. Individual connections in the brain are very slow compared with those in silicon (in part because so much of the brain's energy is devoted to keeping the living substrate alive); but the brain makes up for it by its massive parallel capacity which makes possible ten million billion calculations a second (to which one is tempted to add, not in my head there aren't). By contrast, until fairly recently, massive parallel processing was making little progress in mechanical computers.

But others say Kurzweil is right on target. Among the arguments that lend his position credibility is the fact that, relentlessly, problems identified as insurmountable barriers to computers acquiring human abilities – or more – are being broken down. Beat the world champion at chess? No problem. Neural nets and evolutionary algorithms are another instance. Quantum computing? Yes, computers will be able to do that too.

In such a context, pronouncements about absolute difference begin to look as quixotic as Goethe's claim that a small bone in the human ear supposedly possessed by Man but not by other animals proved our species was altogether distinct.

Dr Kurzweil argues that technological development will proceed at such a breakneck pace in the next few decades that before the end of the next century humanity will, for all intents and purposes, have merged with its (information, genetics and nano-) technology and have moved beyond biology as we know it.

tions per second – or ten million billion). And by 2029 \$1,000 will buy the computing capacity of approximately 1,000 human brains.

Some philosophers, neuro-scientists and others have taken strong exception to what Kurzweil entertains as real possibilities. An example is the "inevitability" of machines becoming conscious and ultimately much cleverer than human beings. These critics highlight profound differences between the brain and mechanical processors. Certainly, such differences have been readily apparent with the technology developed up to now. Some things computer scientists thought And another part of Kurzweil's future world, nano-engineering (the design and manufacturing of machines and other objects based on the manipulation of atoms and molecules), which was not far from science fiction ten years ago is now taking shape as an infant industry in the United States, already attracting millions of dollars investment.

Environmentalists, then, would do well to take this book seriously, even if not literally. Information technology has long been recognised as a two-edged sword by the environmental movement. On the one hand, it has been an enormous benefit in campaigns – for example in the use of the Internet against the Multilateral Agreement on Investments. "If a negotiator says something to someone over a glass of wine," boasted Maude Barlow, chair of the Council of Canadians, in 1997, "we'll have it on the Internet within an hour, all over the world." In April 1998, the OECD announced a six-month delay in negotiations, acknowledging that the NGOs had aroused enough opposition in many countries to derail the process. It was the Net, above all, which made this possible.

On the other hand, of course, informa-

tion technology makes possible an evergreater acceleration of the globalized economy that many hold responsible for the worst aspects of environmental destruction and social injustice. As if to reinforce the point, neural nets and evolutionary algorithms came into commercial use in international investment funds in 1998.

Writing in an often jocular tone, Kurzweil does what he can to tackle the heavy moral and philosophical issues surrounding what he seems to see as a steady march forward: When do we consider machine intelligence to be conscious?

INTERNATIONAL JOURNAL OF HEALTH SERVICES

EDITOR-IN-CHIEF: VICENTE NAVARRO

In an article published in the World Health Forum (Vol. 16), the organ of the World Health Organization, a librarian analyzed the most frequently cited journals among 123 health-related journals. The International Journal of Health Services placed among the top 15 most frequently cited publications, ranking higher than the New England Journal of Medicine, Journal of the American Medical Association, American Journal of Public Health, British Medical Journal, American Journal of Epidemiology, Journal of Public Health Policy, World Health, Health Policy, International Journal of Epidemiology, and many others. The other top 15 journals were bimonthly or monthly scholarly journals, the IJHS was the only quarterly in the group.

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26 Austin Avenue, Amityville, NY 11701 call (516) 691-1270 fax (516) 691-1770 orderline (800) 638-7819 e-mail: baywood@baywood.com web site: http://baywood.com ("When the machines tell us so, and we believe them"); Whither nature? ("The laws of physics are not repealed by intelligence, but they effectively evaporate in its presence."). At times these salvos go far afield, as in his belief that "we" will achieve a state of virtual immortality. But, for the most part, he is content to play the role of agent provocateur: "For now, it's enough just to ask the right questions." He is also well aware of some of the likely downsides – particularly the emergence of hugely sophisticated bioweapons – and the (to my mind mostly nasty) possibilities of 'virtual sex'.

But there are many issues he does not address, and campaigners will have to do a lot of the thinking themselves. If Kurzweil is right, the combined effect of the changes he predicts will, at the very least, completely redraw notions of scarcity and the value of human labour in industrialised economies. Who will profit, politically and financially? What will this mean for the protection and conservation of the nonhuman living world? In a world where the distinction between real and the virtual erodes – at least in over-charged brains in technology-obsessed cultures – will nature lose out even more?

On the downside, both the 'virtual war' veneer on the real-life-flesh-and-blood tragedy in the Balkans, and those insane teenage killers in Colorado point to what a "melding" with technology might do to the human spirit. It's clear that over-exposure to television, a very primitive technology by comparison with what Kurzweil predicts, can have devastating effects. A respected large-scale study on the impact of TV on violence published in the Journal of the American Medical Association found that everywhere TV is introduced there is an immediate explosion of violence among young children in the playground, and within 15 years there is a doubling of the murder rate. (Why 15 years? That is how long it takes for the brutalized three- to five-year-old to reach "prime crime age").

And the upside? For one thing, superior computing power will bring vastly enhanced capacity to bear on modelling and understanding of potential challenges such as climate change. But one word you will not find in Kurzweil's book is hubris, and Spiritual Machines should carry a health warning to the effect that it should only be ingested through a filter of knowledge of the ancient Greek tragedies. In this case, as in so many others, an observation made well over a hundred years ago by Friedrich Nietzsche holds good: "Technology is the premise whose thousand-year conclusion mankind has not yet dared to draw". - Caspar Henderson

Caspar Henderson is a writer and environmental analyst.

A Citizen Among Us



VARIOUS VOICES – PROSE, POETRY, POLITICS 1948-1998

by Harold Pinter, Faber & Faber, 1998, 224pp, £16.99, ISBN 0 571 197280

Rousseau once noted how "We have physicists, geometricians, chemists, astronomers, poets, musicians and painters in plenty, but we no longer have a citizen among us." The shortage remains to this day. While 'legal correspondents' are examining the merits of the case for Pinochet's extradition, 'foreign affairs correspondents' examining the impact on Chile, and 'home affairs correspondents' examining the political repercussions at home, there are no citizens to report the issue that truly matters: that Pinochet's coup was one small example of the consistent Western policy of installing and supporting dictators to protect Western business interests from independent nationalism, a policy that continues to this very day.

Specialisation, then, is one of the great allies of oppression and deception. As long as we are willing to perceive, or deem ourselves responsible for, only one small part of the world, the suffering of the world as a whole can be overlooked, or declared "none of my business": "I'm an oil executive, it's not my job to protect the environment"; "I'm an arms manufacturer, it's not my job to stop people killing each other"; "I'm a global warming scientist, it's not my job to comment on political issues."

Fortunately for us, Harold Pinter is not a specialist, he is a citizen, because he sums up US foreign policy thus: "Kiss my ass or I'll kick your head in." It's difficult to disagree with this concise analysis, although accuracy demands that it should also read: "And then I'll kick your family's heads in."

Throughout his career, Pinter has used violent language and sadistic imagery to give us a flavour of the violence and sadism of the real world. In his most controversial poem, "American Football (A Reflection on the Gulf War)" – rejected by liberal newspapers like *The Guardian* and *The Independent* – Pinter has a psychotic American military voice rejoicing at the success of 'Operation Desert Storm' and its high-tech killing machines:

"Hallelujah! It works. We blew the shit out of them.

We blew the shit right back up their own ass

And out their fucking ears.

It works. We blew the shit out of them. They suffocated in their own shit! ..."

And what impulses of mercy might we, the victors, feel Now towards the men, women and children we have bulldozed alive, cluster bombed, napalmed and irradiated?:

"Now I want you to come over here and kiss me on the mouth."

If you put this poem, and particularly this last line, into the head of someone brought up on John Wayne, Henry Fonda, Harrison Ford, et al., it has an interesting effect, cre-

Harold Pinter is not a specialist, he is a citizen, because he sums up US foreign policy thus: "Kiss my ass or I'll kick your head in."

ating a kind of effervescent fizz in the pit of the stomach. The poem is obscene, but not because it contains rude language. It is obscene because the contrast between how we fundamentally see ourselves – how we see Western civilisation – and Pinter's version of what we are, is just too violent, much as the carcass of a lamb might seem obscene pictured alongside a wide-eyed shot of the real thing in a summer meadow.

As this collection of prose, poetry and political pieces makes clear, Pinter is our Tolstoy. To read Tolstoy is to read an individual apparently hell-bent on dislocating every last cultured nose raised up to him in admiration: intellectuals, artists, aristocracy, royalty, clergy, the military, business, everyone – all out of a determination to relieve the suffering of others.

Similarly, while Pinter has been declared the "greatest living playwright", and is widely admired in 'cultured' circles, he is nevertheless willing to pour vitriol on the lifestyle of the dinner-party set in plays like 'Party Time' and, here, in the essay 'Caribbean Cold War', in which, with excruciating detail, he contrasts the delicacies of a World Bank dinner:

"The entrée was duck with lime sauce served with artichoke bottoms filled with baby carrots. A hearts of palm salad was offered accompanied by sage cheese soufflés filled with a port wine dressing. Dessert was a German chocolate turnip sauced with raspberry coulis, ice cream bon-bons and flaming coffee royale."

with the life of a Bolivian woman:

"We get up at 4 a.m. and at 11 at night we are still working. I have vomited blood for weeks at a time and still had to keep working."

The juxtaposition is demonic: for a moment there is a sense that there really are demons in the world.

Pinter also likes to write open letters to Tony Blair:

"The US has supported, subsidised and, in a number of cases, engendered every rightwing military dictatorship in the world since 1945... The deaths really do mount up: 170,000 in Guatemala, 200,000 in East Timor, 80,000 in El Salvador, 30,000 in Nicaragua, 500,000 in Indonesia – and that's just to be going on with. They are, every single one of them, attributable to your ally's foreign policy... Anyway, this is your ally with whom you are locked in a moral embrace..."

As any number of dissidents know, this kind of statement can be tantamount to professional suicide. Pinter received no reply from the PM to his "off message", "old fashioned", "old Labour" thoughts. No surprise, given that, as Pinter says in his essay 'It Never Happened': "the general thrust these days is: 'Oh come on, it's all in the past, nobody's interested any more, it didn't work that's all, everyone knows what the Americans are like, this is the world, there's nothing to be done about it and anyway, fuck it, who cares?"

The reality being, of course, that no one was ever interested:

"It never happened. Nothing ever happened. Even while it was happening it wasn't happening. It didn't matter. It was of no interest. The crimes of the US throughout the world have been systematic, clinical, remorseless and fully documented but nobody talks about them. Nobody ever has."

Also included in this selection are rare

interviews which reveal Pinter's response to this overwhelming indifference and clues to his own motivation:

"I believe that politics, our political consciousness and our political intelligence are not all over, because if they are, we are really doomed. I can't myself live like this."

The crucial thing, he argues, is to plunge into the inky darkness of political language and recover the ugly truths hidden therein. There are costs, but well . . .

"Of course, this means that one does tend to become rather unpopular. But to hell with that." – David Edwards

David Edwards is a researcher/writer for the International Society for Ecology and Culture. His latest book *The Compassionate Revolution* is published by Green Books.

From Global to Local



THE POST-CORPORATE WORLD: LIFE AFTER CAPITALISM

by David C. Korten, Barrett-Koehler Publishers and Kumarian Press, 1999,\$27.95 ISBN 1 57675 051 5

This is really two books in one. The first This is really two books in the spiritual is an account of Korten's spiritual journey as he sought to find a way out of humankind's late twentieth-century predicament. Fans of the Catholic theologian Thomas Berry and those scientists of like mind such as Brian Swimme, coauthor with Berry of The Universe Story, will applaud Korten's embrace of their way of looking at life as interconnected, dynamic, self-organising, and purposeful. This reveals another side to Korten's nature as contemplative, philosophical, even spiritual.

After burying global capitalism once and for all in the opening section of his book, he takes his readers on an "incredible journey" as he recounts Life's Story emerging from the pioneering work on living systems by "leading-edge thinkers" in the field of biology. The rest of the book is Korten's effort to apply the insights he has gained from his "incredible journey" to the world of political, economic, social and spiritual change. "Envisioning a Post-Corporate World" includes chapters on "Mindful Markets", "Economic Democracy" and "The Rights of Living Persons".

Another chapter, "The New Storytellers" in which he tells us about some people and groups that have made a differ-

This is an important work that seems destined to move in new directions the debate about how we can save ourselves and all the other inhabitants of the biosphere.

ence and another on "Life Choices", in which he describes concrete ways in which we can change our lives and make them more compatible with values such as sustainability and equity, are both inspiring and positive. His final chapter, "Engaging the Future", sets out concrete actions we can all take "to create a just, sustainable and compassionate post-corporate world."

Korten has come a long way from his days as a Harvard Business School faculty member. His metaphor of capitalism as a cancer that must be exorcised firm in the body politic is particularly telling. But he does not tell us how to deal with the predator class - that is, those whose lust for power is so great that they will assert it regardless of the prevailing economic system. And, notwithstanding its positive qualities, Korten's book has a number of such shortcomings, perhaps inevitable in a work of such scope. Thus he sometimes gets carried away with his own rhetoric. Consider this passage (pp. 280-281): "However, to take this step requires that we put capitalism and the institutionalised irresponsibility of our adolescence behind us and align ourselves and our technologies with life's continuing quest to know itself through the transcendent actualisation of yet unknown possibilities."

On a more substantial scale, he appears to be ambivalent about the role of power in realising the transformation for which he argues so eloquently throughout his book. I do not think that he has forgotten Lord Acton's dictum that power corrupts and absolute power corrupts absolutely or Frederick Douglass' insistence that those who wield power will never give it up without a struggle. But I wonder whether his assertion that the task ahead depends more on our spiritual rather than our political awakening, is going to get us from here to there.

Although Korten seems to have intend-

ed that his book play to a global audience, and he does provide a number of examples of people and movements working for positive change in the Third World, this is a book primarily for North American readers. I tried to think how the victims of the world's worst industrial disaster in Bhopal, India, would relate to Korten's vision of a brave new world centred on celebration of life. Their struggles for survival are so encompassing and so primordial that they would have great difficulty connecting with his vision.

But notwithstanding these limitations, this is an important work that seems destined to move in new directions the debate about how we can save ourselves and all the other inhabitants of the biosphere. – Ward Morehouse

Ward Morehouse is a founder and co-director of the Program on Corporations, Law and Democracy, and the author of *The Bhopal Tragedy* and *Abuse of Power*.

Sickness of a Tiger



A SIAMESE TRAGEDY: DEVELOPMENT AND DISINTEGRATION IN MODERN THAILAND.

by Walden Bello, Shea Cunningham and Li Kheng Poh Food First/Zed Books ISBN 0-935028-74-9 256pp, \$19.95

"This powerful book is about a nation that fell victim to a rapacious cult called the Market. It is a timely response to those who insist, against all the disastrous evidence, that 'there is no alternative.' There is, of course, and there has to be." – John Pilger, author of Hidden Agendas

B etween July 2 and the end of 1997, the Thai currency fell by over 100 per cent against the dollar, and the stock-market fell from an already low 800 points to below 400. At the top of the casualty list were the 50,000 employees of the 56 financial firms that had been shut down by the authorities at the urging of the International Monetary Fund (IMF). By September 1997, the country's Finance Minister had predicted that about one million Thais would lose their jobs in the coming recession.Television and newspapers featured human interest stories, such as one about Sirivat Voravetvuthikun, the stockbroker who became a sandwich-maker and peddler to survive the slump. Thailand was effectively bankrupt, saddled with a foreign debt of \$89 billion, over half of which was due in a few months.

"Even before the catastrophic economic collapse of 1997-1998, the 'fifth Asian Tiger' had feet of clay," says Dr. Walden Bello, co-author of *A Siamese Tragedy.* "The economic crisis can be traced to the late 1950s, when with strong backing from the World Bank, Thailand embarked on a path of 'development' stressing rapid industrialisation and minimal regulation of the private sector and greater integration into the global economy."

The economic crisis can be traced to the late 1950s, when with strong backing from the World Bank, Thailand embarked on a path of 'development' stressing rapid industrialisation and minimal regulation of the private sector and greater integration into the global economy

A Siamese Tragedy provides a comprehensive examination of what went wrong, and reveals the economic, environmental and human rights costs of the Thai development model. It deals not with the challenge of reviving the moribund economy, but rather restructuring it on different principles and priorities. It articulates alternatives such as a transactions tax on speculative capital, the creation of an Asian Emergency Regional Fund to replace the US-controlled IMF in dealing with the financial crisis, debt-relief and growth financed principally from domestic savings and investment.

The key to repairing Thai society and its economy, says this book, is to redefine the notion of 'development'. Development, say the authors, should be re-orientated around the domestic market; instead of 8 to 10 per cent growth rates, the aim should be for ecological sustainability at 3 to 4 per cent or even less per year. "This political strategy for change which is both visionary and pragmatic is bringing together those negatively affected by the discredited strategy of fast track capitalism into a broad alliance for change," claims this timely assessment of the Asian problem. "Frozen during the years of the long boom, mass politics with a class edge is returning to centre stage." It remains to be seen if this is truly the case. – Anuradha Mittal

Anuradha Mittal works for Food First, a policy think tank which works to identify the root causes of hunger and poverty.



ORGANIC COTTON: FROM FIELD TO FINAL PRODUCT.

Dorothy Myers and Sue Stolton (Eds.), Intermediate Technology, 1999, £14.95 (US\$28), 267pp, ISBN 1 85339 464 5

We've known for a long time that the textile industry can be a dirty business, but somehow cotton production and even processing have maintained a clean image – one which is not always justified. But with cotton production accounting for 23 per cent of worldwide pesticide use, green alternatives to conventionally-grown cotton are now being considered. This book is a good overview of the current situation.

It is to the credit of *Organic Cotton's* editors and most of its contributors that the accomplishments of the nascent organic cotton industry are not overstated. It has been ten years since the first organic cotton projects began, and the amount of organic cotton grown has been minuscule. The amount produced that has actually been sold as organic is even smaller, since in many instances organically-grown cotton has been sold as conventional cotton.

What is perhaps most interesting about the conclusions that can be drawn from *Organic Cotton* is that farmers' conversion from conventional to organic cotton production is easier if it takes place in regions or countries that already use few chemicals. So, for example, farmers in the Canete Valley in Peru and several regions in Turkey have had less difficulty in the early stage of organic conversion than those whose farming practices and land have been profoundly chemically dependent.

Of course, there is more to cotton than the growing of the crop, and this book could be a useful reference for textile designers and retail distributors. Better yet, its influence could be even greater if it were required reading for students of textile design. If the people who are designing and ordering cotton products have a better understanding of the industrial choices available and the strengths and weaknesses of the various environmental certification schemes, the consumer will be

The textile industry can be a dirty business. With cotton production accounting for 23 per cent of worldwide pesticide use, green alternatives to conventionally-grown cotton are now being considered.

presented with a product that not only contains organic cotton fibre, but has been the subject of greener practices in the postgrowing stages.

One area where Organic Cotton offers a twist to an old story is on the subject of markets. Not surprisingly, Europe. and later the United States, provided the first consumers of organic cotton clothing. These markets remain tiny, but it is hoped that they will grow in the way that the market for organic food has grown. But what about markets for organic cotton in the South? With many of the cotton-growing countries of the South possessing a textile industry, it makes sense that they should seek to develop domestic markets for organic cotton. In case studies at the back of the book, several contributors mention this as a hope.

As is the intention, the reader ends with more questions than were present at the outset. Cotton is a complicated business, and organic cotton won't be a viable industry until people are able to tackle the environmental impacts of its whole lifecycle. *Organic Cotton's* authors admit that there are gaps. Let's hope, as they do, that the book will soon be out of date, thanks to the onward work of this potentially exciting industry. – *Erin Gill*

Erin Gill is Assistant Editor of *World Water & Environmental Engineering* magazine and news writer for EDIE, an environmental online news service.



Terminating Peasant Farmers

The article in *The Ecologist* Vol.28 No.5 'The Monsanto Files', entitled "Terminator Technology" by R.A. Steinbrecher and P.A. Mooney points out the cost to peasant famers of buying new seed every year and herbicides or pesticides like RoundUp, saying "The target market for the Terminator is explicitly the South's farmers."

For reason of these expenses I can't see that genetically-engineered crops would be taken up by peasant farmers. Over the decades, there has been a long litany of failed attempts to bring technological solutions to peasant farmers in the Third World. A book published way back in 1985, "Famine, a Man-made Disaster?" (Pan), now, in the light of biotechnology, looks prescient. It says: "First the colonial authorities, then local urban elites, and aid agencies alike have assumed that peasant farming methods were downright inefficient and that their unwillingness to adopt new technologies was a mark of their ignorance. Such judgements did not look at the innovations from the point of view of the peasant. A high-yielding variety of maize requires fertiliser, pesticides and water. With a limited amount to invest, a poor peasant cannot afford the risk of going into debt to buy the seed and then not being able to pay the debt back when the crop fails for lack of fertiliser or pesticide. Building on peasant knowledge and needs requires a participatory approach and a willingness to rough it in the field. Too many scientists prefer their laboratories."

Biotechnology is more likely to get taken up by the owners of vast areas of the land, which they can afford to hold on to only by growing cash crops on it. An article in New Scientist of 31 October 1998 (p.50) mentions as an instance Brazil, where "famine is perennial." It tells of a case where Monsanto in September "announced it would invest \$550 million in Brazil to build a factory producing RoundUp. Shortly afterwards, the Brazilian government made Monsanto's RoundUp-resistant soya beans the country's first legally approved genetically engineered crop. The soya beans will boost the profits for the big landowners who grow them to feed beef cattle for export. But most rural Brazilians are subsistence farmers who do not grow soya."

Maybe this is why biotechnology companies, who say they are motivated by compassion for Third World hunger, do not speak out for redistributing the land, only saying: "Biotechnology will help increase the yield on limited land," (Europa Bio Literature – the Association of European Biotechnology Companies). Maybe it is because their interest lies in selling to the big landowners?

Mark Kinzley Ilford, Essex, UK

Stabilising the Climate Means Stabilising Population

The Ecologist's Declaration on Climate Change is bold and cogent and deserves to be taken seriously. Curiously, however, one factor that is all-important was not to be found in this declaration: population stabilisation. Consider this passage from the 1992 Scientists' Warning to Humanity:

"Pressures resulting from unrestrained population growth put demands on the natural world that can overwhelm any efforts to achieve a sustainable future".

That sounds like a lynch pin to me, plain and simple, and over 1,700 top scientists were willing to sign on to that premise. So why the oversight in *The Ecologist's* Declaration?

If you are planning to do a special issue on population with its own declaration (kind of like how the Population Summit in Cairo was held apart from the Rio summit), then my concerns are out of place, and I apologise. If however, population control was dropped from the declaration because of expediency (= duplicity?), the result was to render the piece virtually hollow.

Lief Joslyn Stratford Rd, Kensington, CA 94707 USA

Simon Retallack replies: The central purpose of The Ecologist's Declaration on Climate Change is to alert people to the urgency of the need to abandon the use of fossil fuels and to protect our precious forest and ocean sinks. Whilst the task of restraining population growth might figure as part of any attempt to achieve these goals, given the unusual length of our special edition on climate change, there was insufficient space left to tackle the subject of population in sufficient depth. You can be assured, therefore, that the omission was not the result of any duplicity! Population is clearly a significant issue – one that The Ecologist has addressed in the past and will again in the future.

Taking Precautions

Having recently come across a copy of your (previously unknown to me, but quite excellent) magazine, entitled The Monsanto Files, (which I am recommending to any of my friends who are interested in finding out what the current GM furore is really all about) I was shocked, though perhaps unsurprised, to learn of the complicity between the US government and the Monsanto Corporation. The article 'Revolving Doors: Monsanto and the Regulators' was an unpleasant confirmation of a suspicion I have held for some years, and which your magazine's journalism seems to confirm: that governments today, whatever their stripes, are generally in the pockets of industry.

Perhaps some would say that, in the USA at least, such an observation is scarcely groundbreaking. But I wonder if such a similarly close relationship exists in Britain? I have been struck recently by the contrast between the Blair government's very different stance over two food safety issues.

Your readers may remember that over a year ago the government banned the sale of beef-on-the-bone, having received scientific advice that there may have been a very small risk of CJD being transmitted to anybody eating it. Attacked by the public, the government defended itself by citing the importance of the 'precautionary principle' in matters of public health.

Yet today, with untested GM foods flooding our shelves, and scientists and even doctors expressing concern about the dangers of these new foods, we hear not a word from Mr Blair or Mr Jack Cunningham about that 'precautionary principle.' Could this disparity, I wonder, have anything to do with the power, influence and money-making potential of the biotechnology industry?

Peter Kane High Wycombe UK THE CLIMATE The Ecologist IS CHANGING

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