

THE LAND

Issue 5

Summer 2008



Farm Girl, by Théophile-Alexandre Steinlen, 1896



Muscle Power – the Neglected Renewable Resource

THE LAND

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OBJECTIVES

The Land is written by and for people who believe that the roots of justice, freedom, social security and democracy lie not so much in access to money, or to the ballot box, as in access to land and its resources.

The Land reflects the preoccupations of two previous publications: **The Land Is Ours Newsletter**, which for nine years informed people about land campaigns, in the UK and abroad.; and **Chapter 7 News**, which since 1999 has published news and views about the UK planning system.

The views expressed in **The Land** do not necessarily represent those of The Land Is Ours, Chapter 7, or the editors. We encourage debate and will consider for publication any material submitted relating to the politics of land, provided it is not racist, sexist or similarly inflammatory. However, editorial policy reflects the basic objective of TLIO — which is to “campaign peacefully for access to land, its resources and the decision-making processes affecting them, for everyone, irrespective of race, creed, age or gender.”

SUBSCRIPTION

Either two or three issues appear every year. A subscription to the Land costs £10 p and p included (£7 unwaged), but you are welcome to donate more. Please make cheques out to The Land.

ADVERTISING

We do not take paid advertising, but will, at our discretion, take advertisements or announcements for land projects, people seeking land-based opportunities, and associated campaigns, publications or events.

A Mayday Celebration

BBC Radio 4 is commemorating the 40th anniversary of 1968 by running a day by day account of events during that year. Why is this occurring on the 40th, and not the more auspicious 50th anniversary? Because the media-folk who lived through those events are now at the apex of their career, and ten years from now they will be past it, or dead. Those of us lucky enough to be 18 in 1968 will be 68 in 2018 — *soixante-huitards* once again.

Over the intervening 40 years, the movement that flowered in 1968 has failed, magnificently, to acquire any political power. If anything, the opposite has happened: our globalized world is more than ever being shaped by corporate economists. Many of us who were around in 1968, and who have been listening to prophecies of the imminent demise of capitalism for the last 40 years, tend to be sceptical about the current predictions concerning peak oil.

But that is no reason to be despondent. Every critical undercurrent owes a debt to the spirit of self-confidence that exploded in May 1968. There were earlier pioneers of organic farming, of veganism, of renewable energy, of ecovillages, of gender liberation and of mind-enhancing drugs — but the unbridled optimism of 1968 was crucial in pressing these concepts upon the public consciousness and infiltrating them into society's bloodstream. Now, even many of our political leaders admit to having once inhaled that influence.

If hippies have proved to be the least ephemeral of 20th century subcultures, that is because their philosophy is grounded in a tradition that goes back to John Ball, Gerrard Winstanley, William Blake, and William Morris — not to mention the nameless prophets, hermits and outlaws who dropped out of society to live on the commons or “went native” in grass-roofed shacks in far corners of the empire. The precursor to 1968 was the flowering of alternative genius when the world turned upside down, during the English Revolution of 1649.

There is no reason to fear that this tradition of resistance will fade. There will be new generations of apostates, activists, and drop-outs, mobilizing under other banners, but taking the same stance against waves of enclosure emanating from an increasingly pervasive and technologically-empowered power structure.

This magazine aims to uphold that tradition. Timothy Leary, when asked in an interview “what happened to the flower people?” answered “they went to seed”. *The Land* magazine is one of many seedlings.

1 May 2008

The editors of *The Land* would like to thank all those who over the last two years have so generously donated to its operating costs.

From Our Manifesto

Demands to “make poverty history”, and responses from those in power, revolve around money: less debt, freer and fairer trade, more aid. Rarely will you hear someone with access to a microphone mouth the word “land”.

That is because economists define wealth and justice in terms of access to the market. Politicians echo the economists because the more dependent that people become upon the market, the more securely they can be roped into the fiscal and political hierarchy. Access to land is not simply a threat to landowning élites — it is a threat to the religion of unlimited economic growth and the power structure that depends upon it.

The market (however attractive it may appear) is built on promises: the only source of wealth is the earth. Anyone who has land has access to energy, water, nourishment, shelter, healing, wisdom, ancestors and a grave. Ivan Illich spoke of “a society of convivial tools that allows men to achieve purposes with energy fully under their control”. The ultimate convivial tool, the mother of all the others, is the earth.

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COMMENT

BASIC BANALITIES

Who is to blame for blanding England?

Mr Paul Kingsnorth has just produced a fine polemic in defence of the “real England that still lives and breathes beneath the spreading plastic of the consumer machine”. *Real England* is a journey through the landscapes of English culture threatened by corporate enclosure and gentrification. It describes how high streets, villages, farms, pubs and waterways, are being “banded out of existence” by “market fundamentalists in suits”. Kingsnorth echoes many of the concerns expressed in *The Land* and focuses on struggles we have covered in earlier issues — the Castlemill Boatyard at Oxford, Queens Market in Newham, affordable housing in Cornwall.

The Land would be publishing excerpts from this book, were it not that both the *Guardian* and the *Daily Mail* have already serialized it. “I must be doing something right” Kingsnorth told us when he sent us a review copy. Indeed. Beyond being readable and thoughtful journalism, *Real England* proclaims a message that resonates with people across the political spectrum, from the diehard readership of the *Morning Star* to the furthest reaches of the *Daily Telegraph*, from the antiglobalizers who gave Churchill a Mohican to the 400,000 stalwarts of Englishness who went on the Countryside March.

Like all who write successfully for more than one target audience, Kingsnorth is careful not to alienate any of them; in fact he explicitly disclaims any political bias:

“Most of the people I’ve met during the course of my journey have not bothered to explain their politics to me; whether they’re Left or Right or neither. And I’ve not bothered to ask because I’m not interested.”

He then goes on to give us his own non-partisan analysis:

“What is killing the real England? The Left blames corporations and the Right blames Europe. The Left blames under-regulation and the Right blames over-regulation. The government must save us from capitalism. Capitalism must save us from the government . . . This is not about Left versus Right. This is about the individual versus the crushing, dehumanizing machine, whether that machine is represented by the profit-hungry corporation, the edict-issuing state or — today’s global reality — a powerful alliance of the two. The machine may come at us from ‘Left’ or ‘Right’; the 20th century has given us many examples of both variants.”

It is true that the anger at the destruction of our cultural well-being is shared by people on both the right and the left.

During the road protests of the 1990s it was the right wing press that turned Swampy into an icon. The *Daily Mail*’s stand against GM and “Frankenstein Foods” has been more forthright than the *Guardian*’s.

It is true also that the Right blames government, while the Left blames capitalism. But Kingsnorth doesn’t say what the *Daily Mail* would never print: that the Left are right and the Right are wrong. Capitalism is the root cause, and the role of government is secondary.

That has not always been the case. As Kingsnorth reminds us, in the 20th century there were ghastly attempts by left wing dictatorships to impose cultural uniformity and modernity upon a reluctant citizenry. But they were a monumental failure. This is the 21st century and all that remains of them are North Korea, utterly discredited, and Cuba, which (more by accident than design perhaps) has maintained some aspects of its cultural integrity fairly well.

“The Left blames corporations and the Right blames Europe” and that surely is a measure of the Right’s intellectual bankruptcy, for the modern European Union is driven by nothing if not by corporations. As the publications of the European Roundtable of Industrialists during the 1990s show, capitalist corporations forged its ethos, defined its objectives and mapped out its infrastructure. Corporate representatives dominate EU standards committees, bend the ear of commissioners and hold state exchequers on a leash. State farms in Poland and Hungary, and Ceausescu’s programme to demolish villages in Romania, must have gone some way towards undermining Eastern European culture, but it is the arrival of 21st capitalism in the form of the EU that is now finishing it off.

The saving grace of state socialism was that it was obvious what was wrong with it. As a Soviet journalist remarked to the Canadian, Farley Mowat, who toured Siberia in the 1960s: “The fundamental difference between our two worlds, with regard to propaganda, is quite simple. You tend to believe yours, and we tend to disbelieve ours.” Western reporters rarely fail to heap scorn on the posters of Stalin, Fidel or Kim Il Sung when they find them plastering the walls of offices and railways stations in the last outposts of state communism. Few of them ever remark on the fantastic torrent of lies and platitudes that issue forth from our own newspapers, television screens, street hoardings, and just about everywhere else, about the merits of such icons as mobile phones, plastic shoes and artificially-sweetened carbonated beverages.

Something of the same difference in perceptivity exists between the Left and the Right in Britain today. Most people on the Left are only too aware how they have been betrayed by the Labour party, and know full well that the Blair and Brown governments are continuing the work that Thatcher initiated. Most conservatives, on the other hand, have still not worked out how they were bamboozled by Thatcher; they haven’t grasped that although she stood as a Conservative, her agenda was radical. Now everything they value is being dismantled before their eyes, and the poor fools blame it on the loss of sovereignty to Europe.

In 2003, the editors of *The Land* (then *Chapter 7 News*) joined 400,000 mostly *Mail* and *Telegraph* readers on the Countryside March. We didn’t expect many of the 400,000 to understand our posters calling for land reform. What did surprise us was the complete absence of all the leaflets, pamphlets, manifes-

tos and programmes that are normally thrust into one’s hands from all sides on such occasions. “Listen to us” said the marchers’ posters, yet they didn’t have anything to say. They saw themselves as victims of the “urban jackboot” but hadn’t got the intellectual rigour to work out exactly who or what was wearing the boot — and whether it was on the left or the right foot.

Hopefully some of the people who were on that march will read *Real England*, and digest its message. Paul Kingsnorth provides plenty of evidence how “the destruction of culture, community and landscape chronicled in this book keeps coming back to the same people . . . chain stores, the developers, the agri-businesses, the big landowners.” In short to capitalism. He just, diplomatically, prefers not to spell it out.

Paul Kingsnorth, *Real England*, Portfolio, 2008

OLD WINE IN NEW GREEN BOTTLES

Can the proposed eco-towns tame the car?

The Government’s proposal to build a series of new “eco-towns” of 5,000 to 20,000 homes has injected new life into one of the most tedious disputes in the history of Britain — the argument between the proponents of new towns, and the advocates of town cramming. On the left (or is it the right?) there are the hoary idealists associated with the Town and Country Planning Association still writing paeans to their mentor, Garden City designer Ebenezer Howard; in the opposite corner the Council for Protecting Rural England, and a bunch of assorted cynics, most eloquently represented by Mr Simon Jenkins.

There can be no doubt that these ecotowns represent a deliberate return to the new town policy favoured in the post war years. The government says so, it commissioned the TCPA to produce a scoping report, and the cover of its own *Ecotowns Prospectus* sports a picture of Harlow, a town so artificial that the planners named all the pubs after butterflies. Several of the proposals for ecotowns are “recycled” schemes, originally promoted in the 1960s or 1970s.

The only matter that distinguishes this new wave from its post-war predecessor is the requirement to build zero-carbon. Of course, you don’t need to build an entire town to create zero-carbon homes. All the new homes in Britain which are currently zero-carbon, or nearly so, are either one-offs or small-scale projects. But the UK government has always favoured volume builders, and no doubt reasons (rightly) that the only way they can be persuaded to take up energy efficient construction is to provide them with economies of scale.

There are plenty of grounds for criticizing this approach. But, as always, the protagonists in this argument are so entrenched in their ideological positions that their critiques degenerate into hyperbolic mud-slinging. Take Simon Jenkins for example. In an article in the *Guardian* he rightly points out that the Government proposals, as they stand, do not seriously address the problem of car transport. But he cannot resist taking this argument further into the realm of unsubstantiated generalization, and arguing that new towns are by their very nature car dependent.

As evidence he cites the fact that only 14 per cent of the residents of Bracknell and 19 per cent of those in Milton Keynes don’t have access to a private car, whereas the national average is 27 per cent. But Bracknell is stinking rich (and wealth is a surer indicator of car ownership than location) while Milton Keynes was built in the white heat of the technological revolution with a density similar to that of a US suburb. There is no reason why a new town cannot be made radically car-free — it is a matter of banning private car ownership and providing the necessary public transport infrastructure, subsidized by car-clubs with excess charges for frequent users. In fact it is a lot easier to do this in a new town than an old one, because you can design your public transport infrastructure for that purpose, and you can impose car-freedom as part of the planning permission. Of course government ministers have no intention of doing this, nor will they while the likes of Jenkins keep assuring them that the answer to our mobility problems is to cram people into cities — even though London’s congestion charge makes it clear that the only limit on car use in cities is the number of vehicles that can satisfactorily be squeezed into the streets.

Jenkins’ hysteria reaches its climax when he proclaims; “the truth is that all governments hate cities. Since the middle ages, the ruling class has regarded them as seething cesspits of humanity.” How he reconciles this with a planning policy that ensures that virtually all residential development takes place in existing settlements and makes it nigh on impossible for people who want to live and work in the countryside to build there remains unclear.

But amidst these ravings he does drop in one nugget of sense: “any fool can build in what remains of the countryside and call it eco-something.” To live and build sustainably in the countryside you have to have a reason for being there and a lifestyle that is so well integrated with the surroundings and the local community that you don’t need to travel very far. The new eco-towns will be plonked wherever they may go without any rhyme or reason for them being there, and so will the majority of their residents. Without stringent restrictions on car-ownership and use, this is a recipe for their inhabitants to drive all over the place. •

AND NOW FOR SOMETHING COMPLETELY THE SAME

A view of the Olympics from Hackney

There are pros and cons to being a hoarder. The downside gets worse over time. The recompense is that an evening's dusty grovelling can illuminate the past in surprising ways.

Here, for example (*phoo-phoo-cough!*) is a copy of the Release *Connections* newsletter, spring 1976. There's news of an exciting loophole in the cannabis laws (very soon closed) . . . routine updates on police racism, corruption and violence . . . the George Davis Campaign . . . Lord Denning turns from bashing squatters to restricting tenants' rights . . . councils (can you believe this?) are failing to use new powers to impose penal rating on empty buildings . . . squatting news . . . free festival news. . . direct action by FoE and building workers' union UCATT to prevent demolition of Birmingham's Victorian Post Office . . . oops! RTZ have been caught out drilling in Snowdonia on the sly since 1969, without planning consent . . . and the latest on attempts to jail Erin Pizzey for overcrowding at her controversial non-separatist refuge, Chiswick Women's Aid, is that former Observer editor, Lord Astor, offers to take the place over, refuse to pay the fines, and go to jail himself. Different times, eh? Seems like another world now.

So, *Connections* was the sort of publication in which various ramifications of the state, local, national, violent or bureaucratic got a kicking on every page, was it? Err, yeah, you could say that, but it would be wrong to give the impression of closed minds or a lack of generosity of spirit. Here, for example, under "EcoNotes, is a wee bouquet of praise for Wandsworth Council 2. It has just approved the first installation of a solar water heating system in a London council house. It will provide all hot water in summer and pre-heat in winter, saving over 2,000 kwh consumption annually. It will cost a massive £500, but that will be recouped in savings over 10 years and it's a lot better than costing the earth. Wahey! Things are moving at last!

As a result, 32 years later when solar panels are much more efficient and relatively cheap, council housing everywhere is fitted with them, relieving the planet of part of the burden of emissions and the pockets of some of the poorest people of those galumping bills for dirty fuel. Uh? . . . wot? . . . oh, sorry! Must have nodded off there. I guess it was that draught from round my council flat windows that woke me up. These new (non-recyclable) uPVC ones they've fitted under the government's "Decent Homes" programme provide even less thermal insulation than the rattly old ones and everyone's homes are cold and draughty. As for the roof, the folks on the top floor would be glad if it kept the rain out, never mind had solar panels fitted.

Did I detect a hint of cynicism in that yawn, reader? So what, you might ask, if a marginal bunch of anarcho-hippie types 30-plus years ago had nothing better to do in their cushy squats than bone up on E F Schumacher and the old Undercurrents 3 between spliffs? We were put down as off-the-wall nutters

back then and now some of what we were scribbling about is received wisdom. But only some of it, and that recently received wisdom has only landed us with bucket loads of greenwash and nothing much effective getting done. Not even to my own flat, eh? One day they might hold the Told You So Awards ceremony, but till then my tuxedo and bow tie will just have to stay in the drawer.

For a different view on who was saying what about what in the early 1970s, how about this? (*phoo-phoo-cough!*) It's a 1972 pamphlet from the then new, but now long gone, Centreprise Publishing Project: *Poems by Vivian Usherwood*. He had written them the previous year when he was 12 years old. He had come from Jamaica when younger, but by then was being shunted from one bleak, oppressive Hackney children's home to another. He was a pupil at Hackney Downs School, famous for producing numerous footballers, as well as Harold Pinter and other class-mobile luminaries of the forties and fifties. But Viv hated the place, which he would have liked to "smash to bits". His poems are a moving account of the experience and feelings of a lonely and emotionally deprived boy who was always getting in trouble for things he didn't understand. "Who am I? Where have I come from? Nobody answers", he wrote, and "I am in prison because I have nowhere to go".

As Vivian wished, Hackney Downs school has now been controversially (at least for its architecture) "smashed to bits", but he might not like the replacement. It's a Blairite "academy" known as Stalag Mossbourne. The word "Stalag" seems to have been omitted from the board outside but the towering razor fence, the floodlights, the security goons' hut at the gate and the butcher's apron flying permanently from the flagpole speak louder than words. The kids here won't find it easy to scale this locked gate in their hundreds and flood down to Parliament Square to rail against the next war, as those from down the road in Stepney did five years ago. The visual message to local people is clear: You're all scum. Social control rules.

He may have felt lost and powerless but, remarkably, young Viv understood things of which few people at the time had any inkling. Not even the anarcho-hippie types who were still off their (alright then, "our") faces in 1971 and didn't start catching up for a few more years. His words speak now to those with power and vested interests, to their obfuscation, denial, posturing and techno-fixery, even more strongly than they did 37 years ago. They're not listening, but you might like to.

The Lea

I live near the Lea Valley, by Lesney Matchbox Toys factory. I sometimes go there in the evening about five o'clock. It is said that part of the Lea is clean. It is not. Fishes are dying in hundreds and hundreds.

I caught a fish: it had no eyeballs, no tail. That is only one. All that is done by us. Mostly by the factories that dump oil in the Lea. We can't help the sticks that get in the Lea from the trees.

We couldn't swim in the Lea, the way it is dirty. The dirt in the Lea pulls you under then the river weeds keep you down. Why? Humans trying to be modern, catching up with new cars. Which is called a development of the modern world.

The iconic Lesney Matchbox Toy factory ceased to be what its façade proclaims shortly after Viv was writing, but it has housed a variety of small firms and light industry ever since. Now there's a planning application to demolish it and build — guess what — another block of "luxury flats". A small percentage of "affordable" housing might be squeezed out in a section 106 deal, but this has become one of those weird Englishisms, rather like "public" (i.e. private) schools. It's Unaffordable for the thousands of homeless and badly housed people in Hackney. We just don't seem to have got the message that "affordable" housing means it's affordable for the trendy young middle classes who fancy living in "edgy" Hackney until their student debts are paid off.

If he stood on the same bridge 37 years later, Vivian could spot a few more "developments of the modern world". In the distance, between the cars people have been "catching up with" ever since, he might glimpse a huge display of tropical hardwood. Not growing, of course, but in the form of thousands of sheets of Indonesian marine ply forming an enormous fence topped with barbed wire and enclosing a perimeter of around 2 miles. So much for the "green Olympics"! At least the paintwork is honest — high gloss Tory blue.

The fence will be marching forward shortly to swallow the East Marsh with its 11 superb football pitches flanked by rare and stately trees, which will be felled. Well, there has to be a concrete coach park, doesn't there? Over on the North Marsh there's already a football pitch disaster. A 15 year-old lad playing in a youth league game disappeared into a 3-metre hole as areas of the pitch suddenly subsided. Overweight pub team centre backs have been lumbering up and down here for over 100 years without a single crater developing. Now two pitches are closed off while lorry loads of hardcore are tipped in the holes. This incident has, of course, nothing to do with the tunnel recently driven under this part of the marshes to carry the power lines which were previously on pylons. You can't have ugly old pylons near the Oilumpics, obviously.

Other things incompatible with this "development of the modern world", already inside the fence or otherwise obliterated

include the Bully Point and Old Ford nature reserves, the unique Clays Lane Housing Co-op, two blocks of student housing, the Bow Back Rivers, Manor Gardens allotments, White Hart Field, three travellers' sites, part of the Greenway and the Eastway Cycle Track. This was also unique, catering for many cycling disciplines at all levels. Not only is it now a memory for many local kids, but cyclists aiming for this year's Oilumpic fiasco have nowhere to train any more!

But what of the River Lea itself, which made Vivian so despondent in 1971? He'd no doubt approve of the pre-Olympic removal of shopping trolleys, oil drums, TWOCed cars etc. He would be less impressed by the modern smell — distinctly faecal. Intermittently, this is due to the sewage works upstream overflowing into the river during storm surges. The problem could have been solved years ago, and if this was Surrey it would have been. Now, the necessary millions are promised in time for 2012. However, this won't ensure a shit-free Olympics. Hundreds — perhaps thousands — of dodgy builders and incompetent DIYers up and down the Lower Lea Valley have muddled up drainage systems and connected crappers into the surface water drains. That means they flush directly into the river, untreated, tasteful tinted paper and all. It's impossible to identify the numerous places where this has happened and nobody can think what to do about it. The current wheeze is to dredge the river of its faecal silt and remove all the reeds. The reeds, of

course, provide the only slight measure of purification available, but who cares about that? The problem is that jobbies, condoms etc. get snagged on the reeds and people can see them. Can't have that, so the idea is to get the river flowing faster and shift all the shit down to the Thames as rapidly as possible. Out of sight is out of mind.

This means there will be a new event at the 2012 games; Olympic poo sticks. An enormous bridge, over 70 metres wide (one of several) is to be thrown across the river at the stadium site. What is such a wide bridge required to carry? Err . . . it's a footbridge! The river will effectively be in a tunnel, killing all the insect and plant life and denying it to the surprisingly wide range of birds, including migratory species, which feed there. Spectators bored with the antics of the druggies on the track can dash to and fro across the bridge to see if it's Turd or Tampax which will emerge the winner at the other side.

Who cares about the planet or the future when you can have fun like this, eh?

Jim Paton

For information on Olympic devastation see www.gamesmonitor.org.uk



The London squatters estate agency, established as part of the International Days of Squatter Action on 11-13 April 2008. A new squatted social centre was opened in Shoreditch, and there were squats or other actions in Bristol, Nottingham, Manchester, Brighton and Leeds, as well as in 15 other countries.

RETURN TO MOTHER INDIA

“I am part of a world that is moving off the land — shifting from an agrarian economy to one based on consumerism. My family made this transition only recently . . .”

JYOTI FERNANDES writes about returning to her roots.



Olivier Föllmi/Rapho: Adivasi from Madhya Pradesh

My grandfather was a rice farmer in Mysore (now Karnataka), India. They were fairly well off for a farming family. They had their own fields, a small house of earth for their eight children, little money. Their house was simple with a few earthen and brass pots, some tables and bedrolls. They grew their own food, kept water buffalos for milk and caught fish to eat. My grandmothers' herb plot was renowned, with peppercorn vines winding up cinnamon bark trees, mangoes and papaya shading the cardamon plants.

One day my grandfather heard someone speaking English and swore that his son would learn that language, so that his children would no longer have to till the fields. He sent my father to a Catholic school so that he could become an engineer and eventually earn enough money to pull my family out of the poverty. My father came to America in 1967 with a big yellow suitcase packed with masalas, pickles and some smart polyester suits. He met and married my mother, a flamboyant Italian American, and spent lots of time working as an engineer — sending money to his family, putting us through violin lessons and eventually college. I was a first generation American kid and everyone had high hopes that I would go to medical school.

I didn't live up to their hopes, instead I majored in environmental studies, and of course I had an interest in my mother country. I read the works of Madhav Gadgil and Ramachandra Guha who analysed the current ecological crisis in India by looking at how people relate to their natural resource base. They classed the people of India into three general categories:

- (a) The *ecosystem people*: the rural peasants who depend on the natural environment of their own locality to meet most of their material needs — more than half of the population;
- (b) The *ecological refugees*, the millions of peasants and tribals displaced by population growth, deforestation and development, many of whom are crowding into cities such as Bombay — who constitute as much as a third of the population;
- (c) The *eco-beneficiaries*, the remaining one-sixth of the population, the middle class, who reap the benefits of economic development, and ecological degradation.

I wanted to be an “ecosystems person” rather than an “eco-beneficiary”. Now I live in England, married to an Englishman, and work as a small farmer, trying in a very western way to be an ecosystem person, to derive a simple and modest living from the

land. Yet my house is still full of goods, I drive a Landrover and buy in compost for my land. I fly to the US and India visiting my family. I don't know if I would like to give up all this: “freedom”, but I know that if I lived in a society that was structured differently I could adapt. I love farming, but farming in the UK no longer has the sense of community that once existed. I go to India, not just because my father and my family are there, but because I need to feel the sense of community in a true agrarian economy — yet at the same time I treasure the freedom that I find so restricted in traditional culture. I want the best of both worlds: to be an ecosystem person, but with a modern outlook.

Slumbai

I flew into Bombay, after five years absence from India, in February 2008. My heart leapt as we landed at Chatrapati Shivaji airport, anticipating the chaos, the cows wandering the streets, the hawkers, the huts of all shapes jumbled along the sides of the road. My uncle and auntie are part of the growing middle class in India. Uncle works for Tata, so they could pick me up in their new Tata Nano, the £1,300 car designed so that middle class Indian families don't have to rely on mopeds. We inched along through the traffic at a pace which a bullock could beat.

This time, as I looked out the window many of the roads seemed remarkably free of the chaotic masses of humanity that I was anticipating. There were pavements with no people camped out on them; neighbourhoods with cars parked neatly down the sides of the roads; skyscrapers clustering together against the sky. We passed a sign on the boulevard with a picture of a bullock cart encircled with a slash through it and “Keep Mumbai Tidy” signs in front of construction zones.

This was the new India I had heard so much about. Bombay is rapidly becoming a new business destination for companies all over the world. The economy is booming, particularly for developers, with land prices in central Bombay higher than those in central Manhattan. The authorities are on a campaign to clear out the city for redevelopment.

This sanitized prosperity not just a natural process of modernization, it is the result of an ideological revolution. Capitalism is the new creed, and the government of India is becoming dominated by budding entrepreneurs who are deliberately

undermining the Gandhian philosophy that held out for so long against multinational corporations after independence. In the same spirit that Leningrad has reverted to St Petersburg, Gandhi's name has been erased from many of the public spaces in India once called after him; they now commemorate more militant national heroes, such as the warrior king, Chatrapati Shivaji.

But you don't have to go very far to leave this brave new India. Dhavari on the outskirts of the airport is the country's most crowded slum — 600,000 people squeezed into 500 acres in the heart of the city. Sixty per cent of Bombay's 18 million people live in slums which stretch for miles. Most of the people who live there are the lifeblood of the city. They are the cleaners, the rickshaw drivers, the airport staff, the recyclers. They collect, sort and repair all of the city's waste, shredding plastic, mending clothes, stripping computers, fixing machinery, flattening cardboard and crushing glass. They save what the middle class waste.

There is a serious lack of infrastructure in the slums, with floods of new immigrants to the city building makeshift tarpaulin houses on the sides of any available walls, children defecating in the roads, water being collected from filthy streams, in some areas. Many of the self built huts are cobbled together with all sorts of recycled bits and pieces to make colourful dwellings that I would be very happy to live in if they were in the middle of a field.

I asked about the slums, but among the middle class there is a reluctance to talk about people who are so obviously poor. They have to live with this class divide everyday. Now there are pizza parlours and shopping centres in Bombay, but as you tuck in to your meal you can often see a child begging for food just outside the window. I, as a Westerner, have the luxury of being able to question this divide. My family, who live on an income equivalent to the dole in the UK, have to ignore it to survive. But as I started to look around, I found a vast network of people questioning the way things are and finding alternatives.

Largely thanks to the Gandhian legacy, India is home to one of the strongest networks of grassroots activists in the world. In 2003, the World Social Forum was held in Bombay, bringing together people's organizations from across the country and the world. At my uncle's house, I had access to the internet where I was able to look up the National Slum Dwellers Association whose office was located conveniently close to where I was staying.

The head office of the association is a small bare concrete room, but the powerful sense of solidarity amongst the people who came in and out of there was a testament to the spirit of civil resistance amongst the poor, despite their lack of a political voice. The association is currently organizing a protest against the plans by the state government of Maharashtra to raze dozens of slums like Dhavari for redevelopment as part of its multibillion-dollar plan to turn the city into a world class financial centre. The plans will displace seven million people from Maharashtra's cities. The slum dwellers accept that the infrastructure of the city



A Bombay slum

needs improvement, but they don't believe that the development will be done with their best interests at heart.

The government is currently working on a scheme to relocate 50,000 families to flats with running water, flush toilets and communal centres. But Bombay's slum-dwellers worry that the new seven story apartment blocks will be built on the city's outskirts, far from where they work and where their kids go to school. The locations would be completely inappropriate for running the recycling factories, which need to be at ground level. Jockin Arputham, president of the Association, told me: “the idea is not improving the lot of Dhavari, it is about how to make money out of Dhavari by selling the land. Every living person in Dhavari wants development, but the development should be on our terms.”

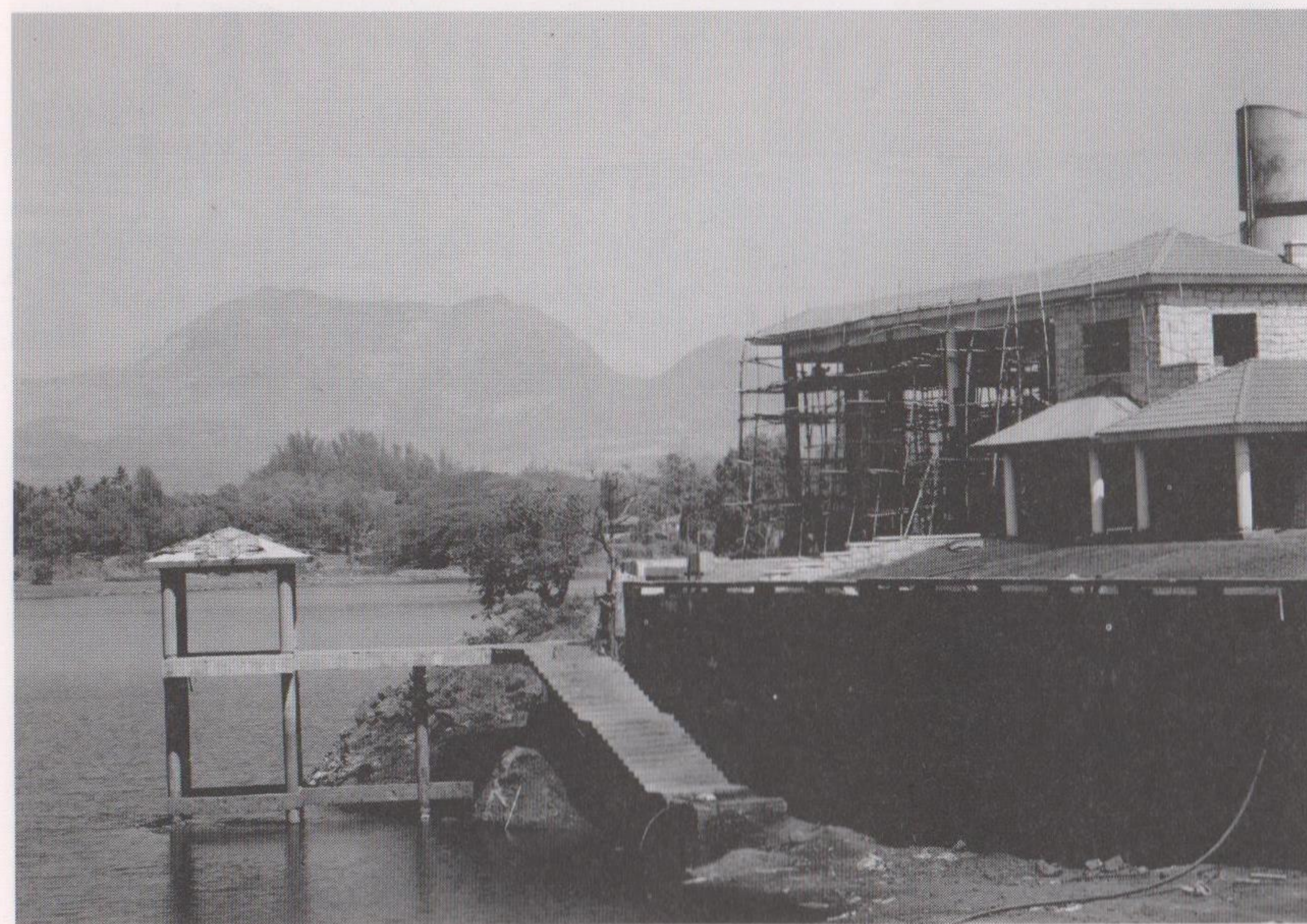
Another NGO, Development Alternatives, is working on an innovative project to build ecofriendly slum homes out of earth bricks or other energy efficient methods. One of their most successful projects involved setting up communal toilets which create biogas to run communal cooking areas. Recently they obtained funding from the Gates foundation to develop better facilities for the slums based on the types of developments that the slum dwellers would choose to use.

The Slum Dwellers Association is currently working on alternative models for the redevelopment of Dhavari, which they say could be a test case for healthier and more inclusive democratic process for long term growth. Because of their numbers, the slumdwellers are by no means powerless; representatives of the association say that if they are not included in the development process they will blockade the airport runways and boycott work leaving the city stranded, drowning in its own rubbish.

Tribal Land Rights

While visiting the slums I spent some time asking people how they came to live there. Most had left their villages because they needed jobs. One family had a daughter who was in college in Bombay and said that they wanted to be in the city because there was more opportunity here. A few said they would like to go back when they had saved enough money to buy land. Many

(cont)

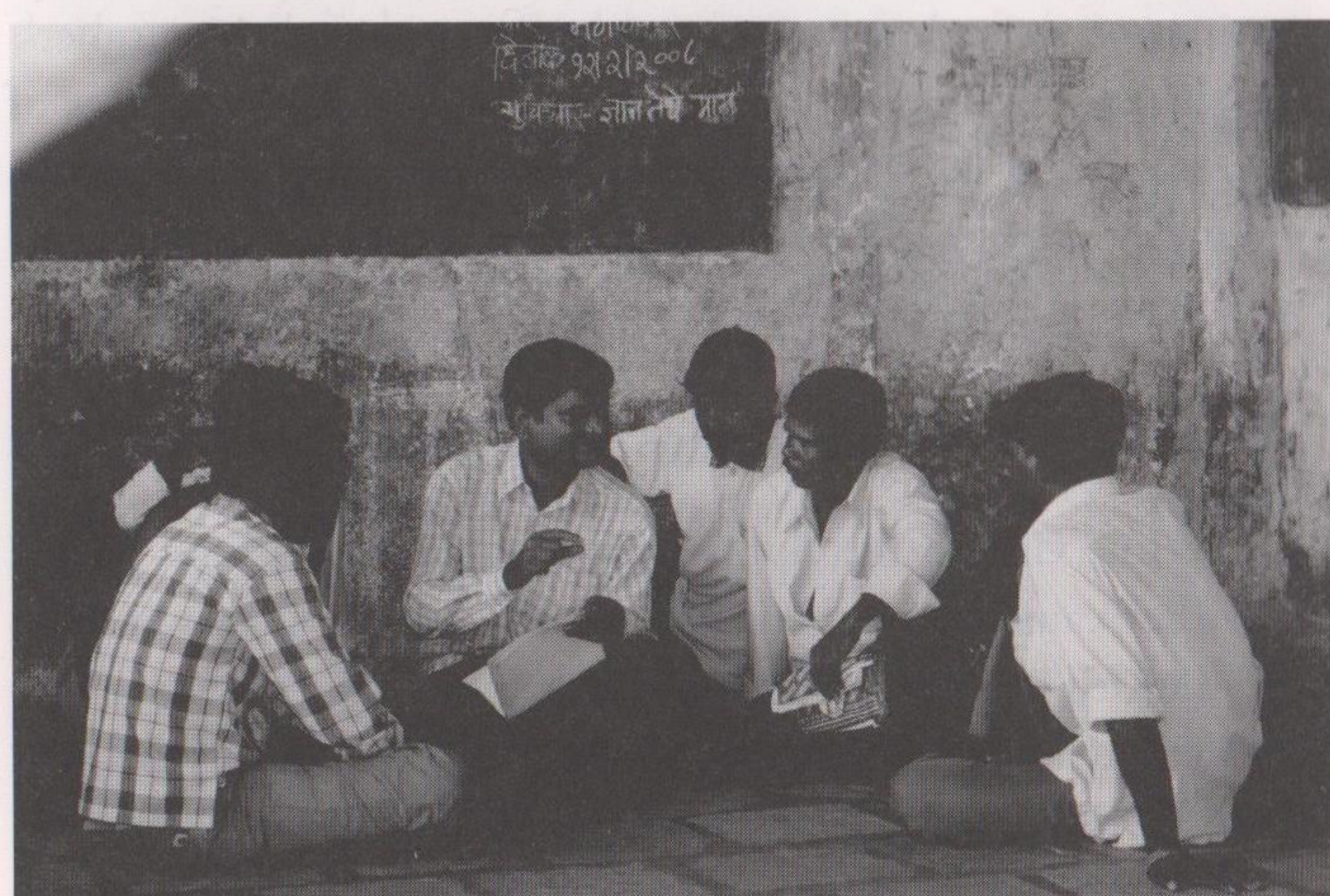


A man-made lake created ostensibly for irrigation — but its cool, tree-lined shores are dotted with palatial villas and second homes. This one belongs to Maharashtra's Minister of Agriculture.

were *adivasis*, tribal people, who did not live in the city all year round. They came here seasonally for labouring work, mostly on building sites. Bombay is busy with high rise bamboo scaffolding gangs and work crews breaking into the tarmac roads with mattocks to improve drainage for monsoon season. It is a vital source of seasonal income for them because the tribals suffer from a chronic shortage of land on which to sustain themselves.

The influx into the cities is relentless. The population of Bombay is scheduled to increase to 28 million by 2020 — the equivalent of half the population of Britain crammed into one city. Ever since Independence, when land reform was virtually enshrined in the constitution, it has been recognized that only land reform coupled with small-scale, labour-intensive agrarian development can help to stem this flow. That was Gandhi's message, spread, after his assassination by Vinoba Bhawe. But the land reform programmes have never been effectively carried out because they are so often blocked by powerful economic forces and political interests.

The Academy of Development Science (ADS) is a rural, people-oriented organisation which for 30 years has been working with land-poor farmers, particularly with the Kathari tribal villages which are spread across Maharashtra state. The Kathari tribes were once hunter-gatherer people who had customary



Barefoot lawyer at work.

rights to harvest what they needed from the forests. When the British came and took the land to produce crops and extract timber, the tribal people were the first to become the workforce of the colonial empire. Now they are the most exploited sector of Indian society, constantly confronted with insecurity of tenure and livelihood. As forests dwindle and the poor are forced to part with their land, often the best option for survival is to head for the slums of Bombay.

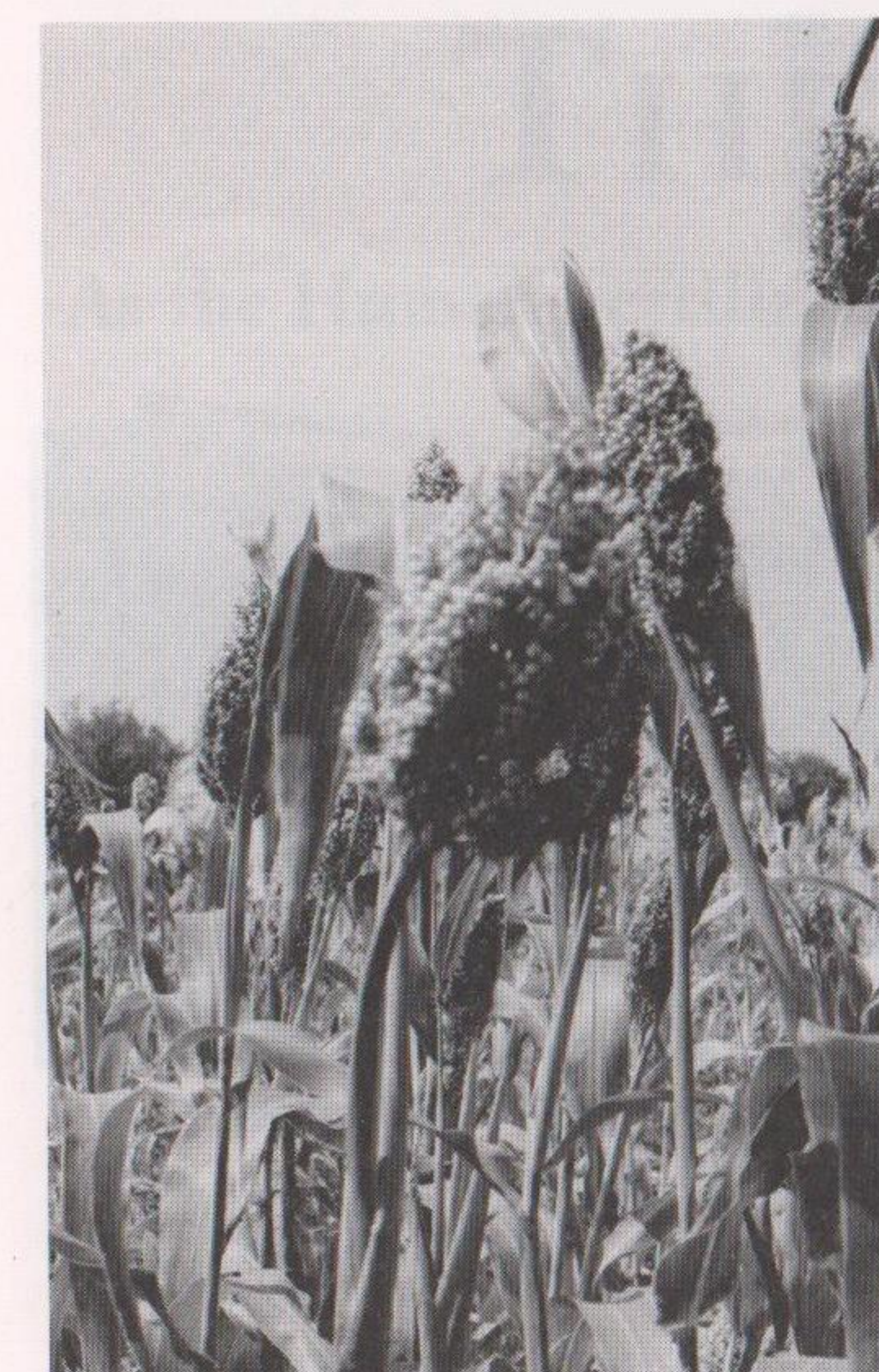
But large-scale agriculture is no longer the main threat to the tribals around Bombay. Over the past 15 years the landscape in Karjat Tribal Block has changed considerably from semi-forested and primarily agricultural, to one where lavish farm houses and health resorts dominate and barbed wire fences straddle vast tracts of land. Hordes of city people drive into the region on weekends to "unwind". As developers progressively encroach upon the communal lands, the local tribal people and their cattle are losing their traditional footpaths, grazing grounds, lands and livelihoods.

As part of the larger work with the Kathari community, ADS has trained a team of "barefoot" land rights experts who travel from village to village hearing the villagers problems with access to land and giving them legal assistance. At Independence, India passed a "ceiling Act" placing an upper limit on the amount of land that can be owned by any one family: surplus land was to be redistributed to landless and tribal people. The barefoot lawyers register tenant agreements and entitlements to land, bust forest encroachers, register heirs legally, and battle through the quagmire of the Indian bureaucracy. They follow up government departments at various levels, posing questions in the Legislative Assembly and challenging corruption in the High Court. ADS efforts over many years have enabled a many poor tribal families to gain or retain legal ownership of agricultural land.

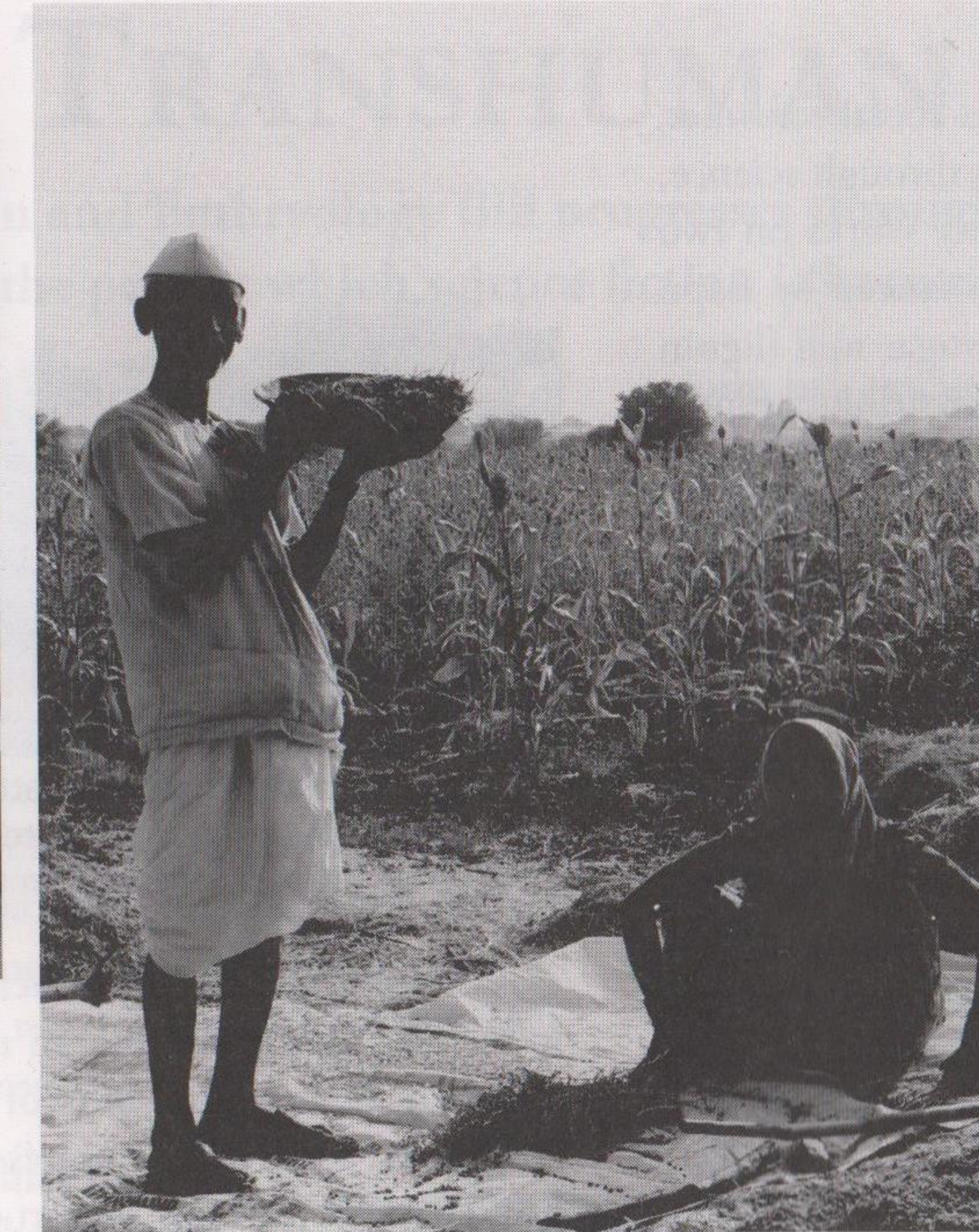
Rajeev Khedkar, ADS's director, took me around with his team of land rights consultants as he visited several Kathari villages. He explained:

"When we say that we aim to alleviate the extreme poverty of the Kathari tribes we do not intend to turn them into consumers. These people do not seek to change their way of life. They are happy when they have enough to feed their families for nine months of the year and they spend the rest of their time as migrant workers. They simply want land."

The tribal villages are simple, but pleasant and cool, despite the dry dusty landscape. The wattle and daub huts are furnished with a small rope beds, some cooking pots and vessels for stored seed. There are almost no other possessions other than a storage tank for *jowar*, the variety of sorghum they grow as a staple, and a basket for winnowing the grain. Almost the whole of the villagers' life is devoted to providing food for their families. Since they were forced to relinquish their forests, the Kathari have learnt to grow *jowar* to eat on small 1-2 acre fields using only a tool similar to a billhook. They herd goats, an occupation suited to landless people, because they can graze them on marginal lands



Jowar, a type of sorghum, grows plentifully on dry land. land where most other staple crops require irrigation



and through other people's land. They spend time everyday gathering wild foods and trap over 70 different birds. The remaining tribal forests and any other land they claim are managed through village common management systems.

Village Life

"The heart of India lies in her villages," said Gandhi. His promotion of a decentralized agrarian economy based on small farms, cottage industries and appropriate technologies, has remained a powerful influence upon Indian policy, though more so in the three or four decades immediately after Independence. For the last twenty years the neo-liberal programme of high-speed, high-tech development has been in the ascendant, buoyed up by the increases in yield due to the green revolution, and the rise of the IT economy. However, the green revolution has brought problems, and the Gandhian movement is still firmly engaging with Indian policy, though from the back foot.

The tension between the Gandhian outlook and modernism, between the call of the village and the lure of the town, runs deep through the history of my own family. Despite her legendary herb garden, my grandmother does not understand why I want to be a farmer. When she introduced me to her neighbours in Bombay, she told me to tell them that I am an office worker. Farmers are considered poor backward people who never had an education. They are respected as hard workers, but farming is discouraged as a middle class occupation and rarely do you hear of an Indian middle class youth going into agriculture. Most of India's educated youth are pressured into become IT specialists, doctors, or engineers. Yet there is a shortage of opportunities: many of the college-educated women that my cousins went to college with are earning a living more mundanely as overqualified telemarketers, and my Aunt works evenings as one.

But not everyone can be a teleworker, let alone a doctor or a lawyer. As Colin Tudge writes:

"The economy of India will never be able to shift to a service economy. Seventy per cent of the population of India,

600 million people work on the land. If India followed the English lead, then half a billion people would be out of work. The advocates of 'progress' in India speak of the IT industry, but it is only able to offer tens of thousands of jobs, not millions. There are some jobs in tourism and as cleaners, but most of the disenfranchised rural population end up in slums. The only option for most of the people of India, for the foreseeable future — which probably means forever — is to remain agrarian."

My father, who spent years in the US working for corporations, has returned to India and, in a sense gone back to the land. He took me to his place of work, Lockmanag Agricultural College in rural Maharashtra state, a small, conventional agricultural college, with both male and female students. All of them are from local farming

families who are pouring their hopes into getting an agricultural education for their children.

Not so long ago this would have been a recipe for creating an elite of agribusiness farmers. The local landscape is studded with pockets of bright green sugar cane that don't fit in with the landscape. Sugar cane is a perennial crop that relies on heavy irrigation. It is a crop for larger scale farmers reliant on labour from migrant workers, mostly tribal. Bapu, the big fish around here, is a fat sugar-baron, but everywhere you go there are stickers and shrines to him. He provides seasonal employment for the tribals, at a daily wage of only 25 pence a day.

But now the talk in the college is of improving the lot of the villages. The focus is on organic methods and techniques which can reduce reliance on chemicals. Researchers are experimenting with new crops like strawberries and french beans, but they still take pride in their traditional dryland crops grown with native seed varieties, which are more reliable and require no irrigation.

Onkar is a young agronomist at the college who knocks on my fathers' door every evening to spend hours on his computer researching ways to propagate bacteria that fix nitrogen in plants other than legumes. When I asked him about why he chose a research project based on biological fertility building, he told me:

"My family has been farming for many generations. We have seen the troubles that were caused by the fertilizers that we had to buy. We can get some manure from the bullocks, but need more to grow good crops. I have found some scientists working on natural fertilizers in Cuba and have read through their research on the internet. It seems very good. I think I can improve life in our village if I help farmers create their own fertility."

It was the grass-roots NGO's which carried the flag for organic, low input farming through the heyday of the green revolution. But now even standard agricultural colleges — or at least this one — are beginning to see the wisdom of Cuba's policy in encouraging budding young science students to develop more sustainable organic alternatives.

(cont)

Village Biofuel Politics

My father is a scientist with the heart of a social reformer, on a mission to improve the lot of the farmers through science, and biofuels is his latest obsession. He currently works on two contrasting biofuel research projects. One is financed by Bapu — to develop biofuel from by-products of the sugar mill (lignin and bagasse). These products can be used for creating compost or even (in the case of bagasse) low grade animal feed, but they are currently wasted. The other project, which he works on in his spare time with his students, is to develop a mobile unit for villagers to produce their own biodiesel from jatropha seeds grown on the arid margins of their fields. My father had urged Manekshi Sundram, a local rural activist, to persuade villagers to plant jatropha on spare bits of land

Unfortunately, Bapu got wind of the jatropha idea and tried to convince my father that he should plant areas of land around the college with monocultures of the crop, in the hope of capturing some government grants. He sent my father on a lobbying trip to New Delhi to convince government officials to give tax breaks to landowners for planting jatropha. I spent lots of time trying to talk him out of the idea.

Manekshi, noticing my resistance to my father's ideas, winked at me, saying "your father is a technocrat dreaming of a biofuel India." Shortly afterwards he broke to my father that he was currently organizing an all-India anti biofuels conference because so much land had been taken from the tribal people by large farmers for grant-funded programmes biofuel crops. He nonetheless spent several hours going through my father's plans for developing the mobile biodiesel unit. He saw this as a farmer-friendly decentralized technology, which could make good use of very dry areas.



Migrant workers shacks, thatched with sugar cane bagasse, by the sugar cane refinery. Before the rise of white sugar, cane was boiled up into jaggery by farmers, in a large vat in the field.

Some of the basic conflicts that underlie Indian agriculture were succinctly acted out in that little episode. Manekshi and Bapu are at opposite ends of the development spectrum. My father, and I are both emigrés who in one way or another have come back to the land — part of a growing element middle class that has tasted and seen through urban sophistication, and seeks a new ethic that provides the freedoms that we value, without the loss of our connection to the land.

I am in a privileged position. I have gained that which so many Indian villagers will never have, but have also seen the downside of development and chosen to try to return to an agrarian life. Someday I would like to pack the old yellow suitcase which my father brought with him to the States, (I still have it), go back to my motherland, buy a plot and join in with one of the most vibrant social movements in the world today. •

Miami Rice

Why there are food riots in Haiti, condensed from a report by BILL QUIGLEY

In recent months the high price of wheat and rice sparked riots in a dozen countries, including Haiti where at least six people lost their lives. On April 18, The *New York Times* intoned: "Haiti, its agriculture industry in shambles, needs to better feed itself."

Unfortunately, the article did not explain why its farming industry is shambolic -- namely that the US and other international financial bodies destroyed Haitian rice farmers to create a major market for the heavily subsidized rice from US farmers. This is not the only cause of hunger in Haiti and other poor countries, but it is a major force.

Thirty years ago, Haiti grew nearly all the rice it needed. But, in 1986, after the expulsion of Haitian dictator "Baby Doc" Duvalier, the International Monetary Fund (IMF) loaned Haiti \$24.6 million in desperately needed funds (Baby Doc had raided the treasury on the way out). But, in order to get the IMF loan, Haiti was required to reduce tariff protections for their Haitian rice and other agricultural products. The US has by far the largest voice in decisions of the IMF.

Doctor Paul Farmer was in Haiti then and saw what happened. "Within less than two years, it became impossible for Haitian farmers to compete with what they called 'Miami rice.' The whole local rice market in Haiti fell apart as cheap, US subsidized rice, some of it in the form of 'food aid', flooded the market. There was violence, 'rice wars', and lives were lost."

Fr. Gerard Jean-Juste, a Haitian priest, agrees. "In the 1980s, imported rice poured into Haiti, below the cost of

what our farmers could produce it. Farmers lost their businesses. People from the countryside started losing their jobs and moving to the cities. After a few years of cheap imported rice, local production went way down."

Haiti is currently the third largest importer of US rice - at over 240,000 metric tons of rice. Meanwhile, fifty per cent of Haiti's population survive on a dollar a day.

The Cato Institute recently reported that rice is one of the most heavily supported commodities in the US, with three different subsidies together averaging over \$1 billion a year since 1998 and projected to average over \$700 million a year through 2015. There are also direct tariff barriers of 3 to 24 percent, reports Daniel Griswold of the Cato Institute -- the exact same type of protections, though much higher, that the U.S. and the IMF required Haiti to eliminate in the 1980s and 1990s.

The same fate has overtaken Haiti's sugar crop. Paul Farmer comments: "Haiti, once the world's largest exporter of sugar and other tropical produce to Europe, began importing even sugar-- from U.S. controlled sugar production in the Dominican Republic and Florida. It was terrible to see Haitian farmers put out of work. This sped up the downward spiral that led to this month's food riots."

Reclaiming Spaces

Knut Unger, from Germany is starting up an e-mail list for activists interested in housing habitat and land. To find out more go to <http://listi.jpberlin.de/mailman/listinfo/reclaiming-spaces>

THE TRANSHUMAN AGENDA

As the Human Fertilization and Embryology Bill progresses through parliament, EDWARD LLOYD assesses the pace at which science fiction is becoming reality.

There are two contrasting ways of countering the threat of global warming — Pro-Growth and No Growth.

The Pro-Growth or Cornucopian route is championed by numerous economists ranging from Julian Simon and Bjorn Lomborg to Larry Summers and Nigel Lawson. They all advocate increasing the output of the global economy so that we have sufficient wealth to buy our way out of the problems the economy causes, through the development of nuclear energy, information technology, genetic engineering and more advanced technofixes. It is the approach favoured by George Bush, Gordon Brown and all free market economists, who recognize that capitalism will collapse if the economy doesn't grow.

The No Growth or Gandhian approach tailors human needs to the limits imposed by the environment, by reducing conspicuous consumption, localizing economies and relying on renewable energy. This doesn't rule out change or evolution, and so it should perhaps be called Slow Growth. This is a proven way of life that protected the environment comparatively well up until about 1800. However it is by no means certain that it will meet the expectations of a global population which has swelled to many times its previous size, thanks to 200 years of profligate fossil fuel use.

The struggle between these two ideologies can be witnessed daily in the media, for example in disputes over whether or not to build a third runway at Heathrow, an extra lane on the M25, or another round of nuclear power stations. No/Slow Growth supporters argue that rapid economic growth has so far failed to reduce emissions, and that if ever it does so, it will be late and at the expense of people in poor countries. Free market economists respond that their opponents are Luddites who want us to return to a society when life was nasty, brutish and short

Given that, in its own terms, capitalism has been fairly successful over the last 50 years, we can hardly discount the possibility that it will be the cornucopians who will triumph. Yet, so far, few advocates of No Growth have attempted any analysis of what kind of society we will be living in if they do. Suppose that some cheap, clean and abundant form of energy is developed which enables governments to deal with global warming, and the global economy to keep on expanding *ad infinitum* — what will our world be like then?

Few people in the UK green movement give thought to this matter, probably because the threat of global warming is so alarming and so imminent that it seems fruitless to look further ahead. But if capitalism does cope successfully with the environmental problems it has caused, beyond lies an economic and technological trajectory that will make climate change look like a

storm in a teacup. For the scientists and economists confidently mapping out this future, global warming is an irrelevance.

A Dubious Prophet

The resistance to this long-term trajectory has been perfunctory and championed by a dubious prophet. Exactly ten years ago, in May 1998, Ted Kaczynski was sentenced to life imprisonment in a Colorado penitentiary for conducting an 18 year letter bomb campaign in which three people more or less connected with high tech industries died, and a number of others were injured. Kaczynski's demand was that his manifesto, *Industrial Society and Its Future*, should be published in prominent US newspapers.¹ It duly was published, in the *New York Times* and the *Washington*

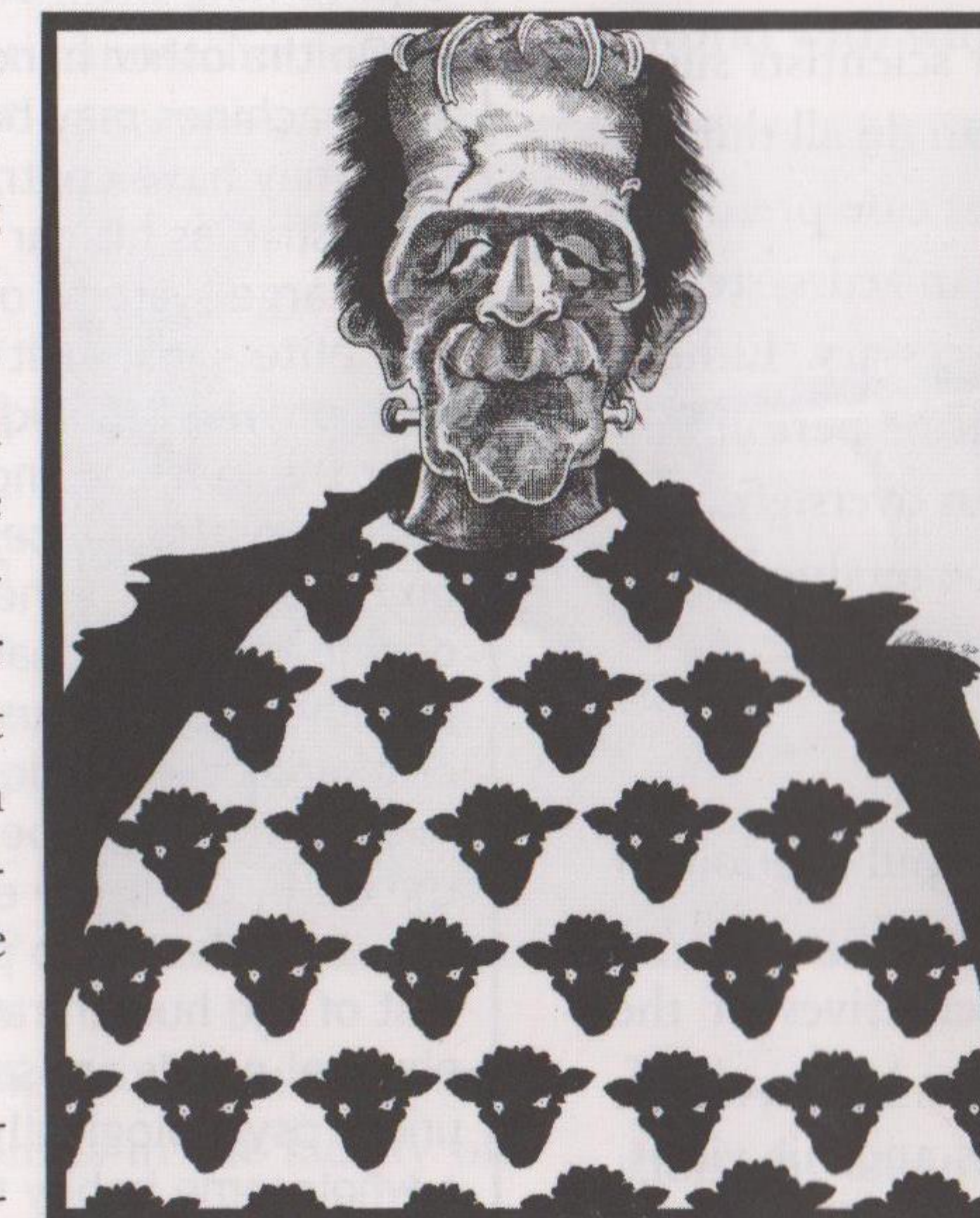
Post amongst others, in the hope that somebody would be able to identify the writer. That is indeed what happened: Kaczynski's brother recognized the style and reported his suspicions to the police.

It is customary, when quoting Kaczynski approvingly, to take pains to distance oneself from his terrorist activities. I will let readers make up their own minds about the ethics of his actions, just as they can make up their own minds about the moral responsibility of the scientists mentioned later in this article who carry out research for the US military, an organization which has bombed 21 countries since the second world war, and caused innumerable civilian deaths.

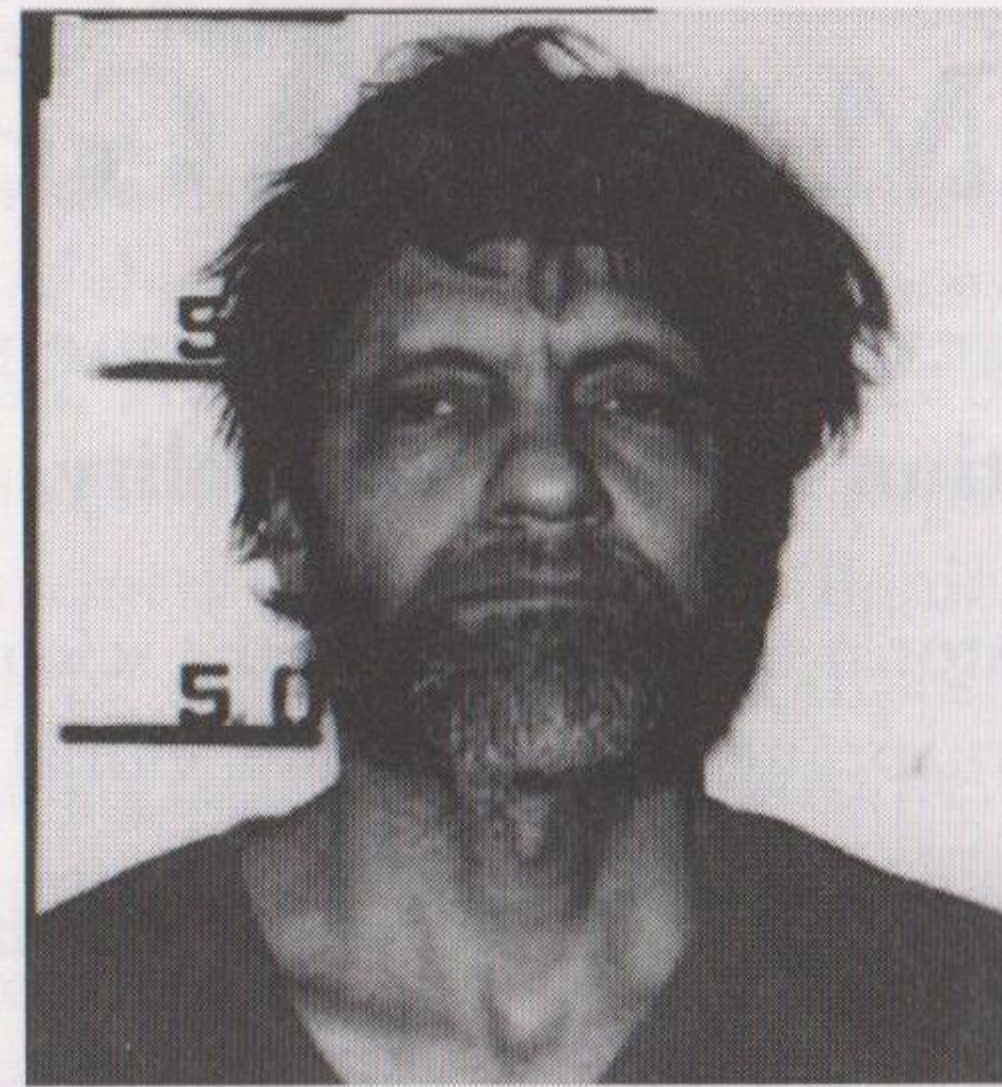
Kaczynski's 30,000 word manifesto starts out unpromisingly with a peevish attack on "leftists" (socialists, minority rights activists etc). This is followed by a lengthy chunk of pop psychology explaining how in industrial society the "effort needed to satisfy biological needs has been trivialized" and replaced by various surrogate activities whose purpose is to give people the sense of fulfilment they would otherwise lack. Typical surrogate activities include sports, art, scientific research or conspicuous consumption. None of this commentary is particularly wacky, and some of Kaczynski's observations are quite acute. But the reader may well start to wonder why he thought it was worth waging an 18 year bombing campaign to propagate it.

It is not until past the middle of the manifesto that Kaczynski has something more important to say:

"Suppose the industrial system survives the crisis of the next several decades. That being accomplished, it does not appear that there would be any further obstacle to the development of technology, and it would presumably advance towards its logical conclusion, which is complete control over everything on Earth, including human beings and all other important organisms . . . Human freedom mostly will have vanished, because individuals and small groups will be impotent vis-a-vis large organizations armed with supertech-



Vint Lawrence, New Republic



Two mugshots of a luddite: how the FBI imagined the Unabomber; and Ted Kaczynski when he was arrested.

nology and an arsenal of advanced psychological and biological tools for manipulating human beings, besides instruments of surveillance and physical coercion."

He then continues, in this much quoted passage:

"What kind of system will it be? We will consider several possibilities.

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

Kaczynski goes on to describe these two scenarios in greater detail in the box, right.

Kaczynski's bombing campaign, and the publication of his manifesto, successfully stimulated soul-searching analysis throughout the US media. Predictably representatives of the liberal establishment and most points to the near left made efforts to disassociate themselves from his actions and his views. Alexander Cockburn in *The Nation* accused him of "homicidal political nuttiness" and of peddling "a rotted out romanticism of the individual and of nature". Earth First! felt compelled to issue an ultimatum under the heading "Earth First! is Not the Unabomber" and called him a "lone sociopath." The *Washington Post*, less liable to guilt by association, carried the non-committal headline "Unabomber Manifesto Not Particularly Unique", which is a dismissive way of saying "Unabomber's Views Supported by Others".

What was more surprising was that an influential sector of the very scientific community which Kaczynski had been targeting started suggesting that he might have a point. As an ex-Harvard PhD, he was after all, one of them. The executive editor of *Wired* magazine, mouthpiece of Silicon Valley's digital elite, noted some method in his madness.

"This guy is a nerd. He is one of us. The [manifesto] is structured like a doctoral thesis, or those computer science papers with numbered graphs. Very tidy. Like the bombs."

And in 2003, in another famous article in *Wired*, entitled "Why the Future Doesn't Need Us", Bill Joy, head of Sun Microsystems argued that there was merit as well as method. Quoting the passage cited in the box above, he concluded:

"Kaczynski's actions were murderous and, in my view,

Kaczynski's Most Cited Text

"If the machines are permitted to make all their own decisions . . . the fate of the human race would be at the mercy of the machines. It might be argued that the human race would never be foolish enough to hand over all the power to the machines. But we are suggesting neither that the human race would voluntarily turn power over to the machines, nor that the machines would wilfully seize power. What we do suggest is that the human race might easily permit itself to drift into a position of such dependence on the machines that it would have no practical choice but to accept all of the machine's decisions. As society and the problems that face it become more and more complex and machines become more and more intelligent, people will let machines make more of their decisions for them, simply because machine-made decisions will bring better results than man-made ones. Eventually a stage may be reached at which the decisions necessary to keep the system running will be so complex that human beings will be incapable of making them intelligently. At that stage the machines will be in effective control. People won't be able to just turn the machines off, because they will be so dependent on them that turning them off would amount to suicide.

"On the other hand it is possible that human control over the machines may be retained. In that case the average man may have control over certain private machines of his own, such as his car or his personal computer, but control over large systems of machines will be in the hands of a tiny elite - just as it is today, but with two differences. Due to improved techniques the elite will have greater control over the masses; and because human work will no longer be necessary the masses will be superfluous, a useless burden on the system. If the elite is ruthless they may simply decide to exterminate the mass of humanity. If they are humane they may use propaganda or other psychological or biological techniques to reduce the birth rate until the mass of humanity becomes extinct, leaving the world to the elite. Or, if the elite consists of soft-hearted liberals, they may decide to play the role of good shepherds to the rest of the human race. They will see to it that everyone's physical needs are satisfied, that all children are raised under psychologically hygienic conditions, that everyone has a wholesome hobby to keep him busy, and that anyone who may become dissatisfied undergoes "treatment" to cure his "problem." Of course, life will be so purposeless that people will have to be biologically or psychologically engineered either to remove their need for the power process or make them "sublimate" their drive for power into some harmless hobby. These engineered human beings may be happy in such a society, but they will most certainly not be free. They will have been reduced to the status of domestic animals."

criminally insane. He is clearly a Luddite, but simply saying this does not dismiss his argument; as difficult as it is for me to acknowledge, I saw some merit in the reasoning in this single passage. I felt compelled to confront it."

Bill Joy came across the passage, not through reading the manifesto itself, but in book entitled *The Age of Spiritual Machines*, by another computer company executive, Ray Kurzweil, who admits: "I was surprised how much of Kaczynski's manifesto I agreed with." Kurzweil has since published an updated version of his earlier book entitled *The Singularity is Near*, in which his response to Kaczynski, and to all who share fears about machines controlling humans, can be paraphrased as follows:

"You're right, but you have barely seen the half of it. The advances made by machines will go far further than you imagine. Humans will not merely be controlled by machines,

they will become machines. It won't be as bad as you suggest, in fact it will be wonderful. Anyway, resistance is futile, so you might as well learn to like it."

Kurzweil is one of a growing swarm of cyber technicians and theorists who call themselves as "transhumanists", "posthumanists" or "extropians" (ie they defy entropy). There is a bubbling subculture of them out on the web, on sites with names like "transutopia" or "anarcho-transhumanism.com" or even "transhumanism.meetup.com", which welcomes browsers who want to "meet other local transhumanists" with a picture of half a dozen middle-aged Americans sitting round a table in a bar.

But however cranky transhumanists may appear, they should not be underestimated. The pioneers mapping out this brave new world are either at top notch universities, working for the US military, or running cutting edge research and development corporations — and in some cases all three. Marvin Minsky, veteran artificial intelligence futurologist, is at the Massachusetts Institute of Technology (MIT) where he has received funding from the US Defence Advanced Research Projects Agency (DARPA); Eric Drexler, who put nanotechnology on the map with his 1992 book *Engines of Creation*, is at Stanford University; Hans Moravec runs the Robotics Institute at Carnegie Mellon University where he carries out work for DARPA; Ray Kurzweil has founded a number of companies specializing in computer speech recognition and is a member of the US Army Science Advisory Group; Rodney Brooks, author of *Flesh and Machines*, is Panasonic Professor of Robotics at MIT and runs a company called I-Robot which manufactures military robots for DARPA . . . and so on.

Nearly all are American. The UK's leading transhumanists are rather effete by comparison: Nick Bostrom is in the faculty of philosophy at Oxford University and David Pearce, a transhumanist vegan, is also an Oxford philosopher.

Most of these guys go to extremes in their own particular field. In this article I have focused particularly on Kurzweil because his books provide a thorough and far-reaching synthesis of all these "converging technologies". They are written in a popular style, often blatantly sensationalist, but they are also copiously referenced, and by no means stupid.

GNR: The Transhumanist Programme

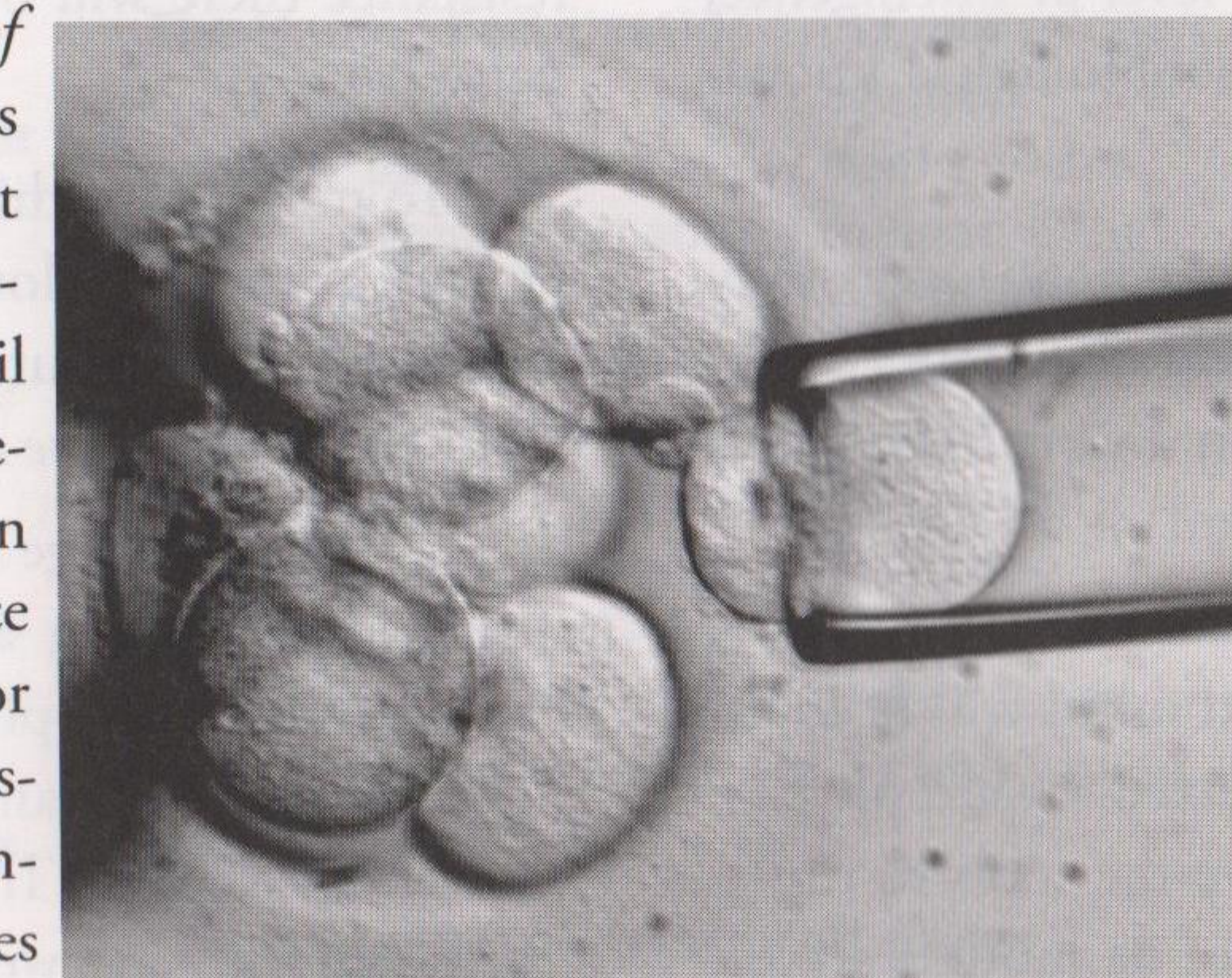
Transhumanists anticipate the development and convergence of an array of technologies which can be grouped under three headings: Genetics, Nanotechnology and Artificial Intelligence (Robotics), or GNR for short. Convergence means that the distinction between biology, chemistry and mechanics — between live tissue (G), dead matter (N) and information (R) — will become increasingly blurred and finally disappear altogether. Kurzweil reckons that the convergence of this trinity will culminate in what he calls the "singularity", occurring around 2045 when "the non-biological intelligence created in that year will be one billion times more powerful than all human intelligence today."

Of the three, genetics, although it is currently the most de-

bated, holds the least long-term promise. Recent advances in genetics include growing meat in test tubes from cloned animal muscle tissue; manipulating the germline to produce designer babies with disease resistance or enhanced intelligence; slowing down the ageing process by growing replacement or enhanced spare body parts from cloned human tissue.

However once techniques of this kind reach maturity, according to Kurzweil:

"Limits will be encountered in biology itself. Although biological systems are remarkable in their cleverness, we have also discovered that they are dramatically suboptimal. I've mentioned the extremely slow speed of communication in the brain, and robotic replacements for our blood cells which could be thousands of times more efficient than their biological counterparts. Biology will never be able to match what we will be capable of engineering once we fully understand biology's principle of operation. The revolution in nanotechnology, however will ultimately enable us to design and rebuild, molecule by molecule, our bodies and brains and the world with which we interact."



By 2030 Kurzweil reckons we will have artificial organs which will outperform "the heart, lungs, red and white blood cells, platelets, pancreas, thyroid and all the hormone producing organs, kidneys, bladder, liver, lower oesophagus, stomach, small intestines, large intestines and bowel." Nanobots — nano-sized pre-programmed robots — will be circulating through our body repairing ageing parts and regulating the genetic code. Aside from the skeleton, all that is left at this point are "skin, sex organs,

sensory organs, mouth and upper oesophagus and brain" — in short, the organs of sensory and intellectual consciousness which require more sophisticated engineering before they can be satisfactorily replaced.

As well as manipulating proteins in what remains of the human body, nanobots will also be employed as "assemblers" manipulating carbon and other molecules to fabricate absolutely anything we need out of dirt cheap feedstock. The problem here is that so many of these tiny robots will be required (literally trillions) that they will have to be self-replicating — ie programmed to assemble carbon copies of themselves. In other words they are analogous to a life form, and it is here that the famous "gray goo" scenario, first postulated by Drexler, and popularized in Bill Joy's article, comes into play:

"Plants' with 'leaves' no more efficient than today's solar cells could out-compete real plants, crowding the biosphere with an inedible foliage. Tough omnivorous 'bacteria' could out-compete real bacteria. They could spread like blowing pollen, replicate swiftly, and reduce the biosphere to dust in a matter of days."

Kurzweil, like most transhumanists, admits this is a threat and advocates that nanobots should only be programmed to replicate on feedstock not found in the natural environment — which presumably would add to their expense.

(cont)

The final and most profound element in the triune convergence is artificial intelligence. AI has two main competitive advantages over human intelligence: it is potentially far more powerful; and it can be uploaded onto another machine. Whereas the average human being, wishing to learn Latin for example, has to spend hours if not years learning to conjugate regular and irregular verbs in past, present, future and subjunctive tenses, a computer can upload the whole of Kennedy's *Latin Primer*, the *Aeneid*, Caesar's *Gallie Wars* and everything else ever written in the language in a matter of seconds. The brain has the edge over the computer only because its three dimensional architecture allows it to work with many more connections, giving it intuitive skills which make it more effective at recognizing patterns, for example in facial character, speech or patterns.

The transhumanists' initial answer is to copy the structure of the brain by a process they call "reverse engineering". This involves scanning and mapping the structure of the brain by "sending billions of nanobots through its capillaries" and copying it into "synthetic neural equivalents" which "can be run on a computational substrate that is already far faster than neural circuitry." Once computers achieve a human level of intelligence, they will necessarily soar past it, because nonbiological knowledge can be shared so quickly and easily.

The biological body, however, no matter how successfully enhanced, can never be more than "a second-class robot". The final solution is to upload the human brain and consciousness — personality, memory, history, neuroses and all — so as to:

"restantiate those details into a suitably powerful computational substrate . . . The reinstated mind will need a body, since so much of our thinking is directed toward physical needs and desires. By the time we have the tools to capture and re-create a human brain with all of its subtleties, we will have plenty of options for twenty-first century bodies for both non-biological humans and biological humans who avail themselves of extensions to our intelligence. The human body version 2.0 will include virtual bodies in completely realistic virtual environments, nanotechnology-based physical bodies, and more."

Or, as Hans Moravec puts it, "a person may sometimes exist without a physical body, but never without the illusion of having one." And Kurzweil again:

"There will be no distinction between human and machine or between physical and virtual reality. If you wonder what will remain unequivocally human in such a world, it's simply this quality: ours is the species that inherently seeks to extend its physical and mental reach beyond current limitations."

Landscapes of the Future

As humanity progresses down the path leading to transcendent nano-consciousness, the world as we know it becomes increasingly irrelevant. Human activity is gradually transformed, in Moravec's words

"from grossly physical homesteading of raw nature, to minimum-energy quantum transaction of computation. The final frontier will be urbanized, ultimately into an arena where every bit of activity is a meaningful computation: the inhabited portion of the universe will be transformed into cyberspace."²

The cities of the transhumanist future will be built not on real estate but virtual estate. Struggles against corporate or state enclosure will no longer focus just on land, but be fought around the architecture of cyberspace, in defence of the so-called "creative commons". The landscapes of the future will not be where we engage with nature for our survival, but the backdrop to an unending sequence of multi-media computer games, a geek's paradise. With this barren end to human endeavour in view, it becomes easier to understand why Kaczynski is so worked up about "surrogate activities".

It also explains why transhumanists are not exercised about global warming. The energy needed to power such minute information transactions is negligible, the feedstock required no more complex than a pile of atoms. Solar cells, says Drexler, will be "as cheap as newspaper and as tough as tarmac." What matter if the Earth's biodiversity is reduced by global warming to a desert of hot bare rock as it was at the end of the Permian age? That is a perfect environment for nanobot assemblers. Besides, the more degraded our biological environment becomes, through climate change or other catastrophe, the less human resistance there will be to a concerted attempt to conquer the nano-frontier.

To most of us, this sounds like the collective suicide of our biological species (along with the demise of a good many others) and it fleshes out the paradox delineated by C S Lewis in 1944 in his essay *The Abolition of Man*:

"The final stage is come when Man by eugenics, by prenatal conditioning and by an education and propaganda based on perfect applied psychology, has obtained full control over himself. Human nature will be the last part of Nature to surrender to Man. The battle will then be won . . . But who, precisely will have won it? . . ."

"We are always conquering Nature, because 'Nature' is the name for what we have, to some extent, conquered. The price of conquest is to treat a thing as mere Nature. Every conquest over Nature increases her domain. The stars do not become Nature till we can weigh and measure them: the soul does not become Nature till we can psychoanalyse her. The wresting of powers from Nature is also the surrendering of things to Nature . . . Man's conquest of Nature turns out, in the moment of its consummation, to be Nature's conquest of Man."³

There are other more modern critics of various elements of the transhumanist agenda — Francis Fukuyama and Bill McKibben for example⁴ — but Lewis still offers the most distilled explanation of the revulsion which many people feel towards scientists who want to sacrifice humanity in their bid to play at being God.

Science Fact or Fiction?

Should take all this seriously? We have seen it all before in innumerable futurist and cyberpunk novels, and to their fans it is old hat. Is the transhumanist agenda really just third rate science fiction, dressed up as future fact? The US military and Ivy League colleges can no doubt afford to pay geeks to publish their techno-fantasies for no other reason than to provoke frissons and chatter amongst the scientific establishment.

Still more incredible is the claim from the likes of Ray Kurzweil, Max More and Hans Moravec that our

(cont p. 18)

Sick Scientists: Steps Towards Transhumanism

1. Test Tube Meat

Artificial meat grown from stem-cells is being developed at the University of Maryland and the University of Utrecht

2. Synthetic Life

Craig Venter, one of the scientists who unravelled the human genome reports that his team has built the first synthetic genome of a bacterium called *Mycoplasma genitalium* "We consider this the second in our three-step process to create the first synthetic organism. What remains now that we have this complete synthetic chromosome ... is to boot this up in a cell."

3. Replacement Breast on Mice

Two teams of scientists, in Vancouver and Parkville Australia, have grown replacement breasts on mice, the first time an organ has been grown from scratch artificially. "If the feat can be repeated in humans, one day women who have had a mastectomy may be able to regrow breasts."

4. Test Tube Human Liver

Scientists at Newcastle University have grown a miniature human liver from stem cells. They hope eventually to produce entire organs.

5. Computer Chips Implanted in Workers

A company in Ohio called City-Watcher has implanted radio transmitters into the arms of two of its workers.

6. Robot Controlled by Living Cells

Klaus-Peter Zauner, of Southampton university powered a six legged robot whose movements are controlled by a light sensitive slime mould.

7. Human Genes in Rice

According to the Daily Mail, California based Ventria Bioscience have been given preliminary approval to plant more than 3000 acres of GM rice spiced with human genes. The rice would contain some of the human proteins found in breast milk and saliva.

8. Nano Assemblers

Zyvex is one of the leading companies developing nanoprobes and assemblers that will eventually lead to a Molecular Assembler technology "capable of creating molecularly precise structures with 3-dimensional capability in an economically viable manner". This includes research into automated nanomanipulation and assembly.

9. Green Pigs

Scientists at the National Taiwan University bred a litter of green fluorescent pigs by injecting green protein into embryos. Even the internal organs are green.

10. Virtual Reality Projector

In 2005 Sony patented an idea for a device that would fire pulses of ultrasound at the head to modify the firing patterns of neurons in targeted parts of the brain, prompting sensual experience in all five senses.

11. Visitors Stay Indoors

A US study found a 25 per cent decline in trips to the countryside since 1980, which they suspected was due to the rise of computer games.

12. Animal-Human Embryos

Scientist at Kings College London and the University of Newcastle have been granted licenses to inject human DNA into empty eggs from cows. The first such chimeric embryos, containing rabbit and animal DNA were created in China in 2003.

13. Eugenics in the UK

The Human Fertilization and Embryology Bill allows parents to select against deafness, but doesn't allow deaf parents to select against the ability to hear. Other genetic conditions screened out in this manner could include obesity, dwarfism, "inferior intelligence" etc. The bill also allows animal/human embryos, saviour siblings (embryos screened to provide transplant material), and the use of artificial sperm and eggs; and it removes the requirement to consider a child's need for a father.

14. Robot Armoured Cars

Since 2004 the US Defence Advanced Research Projects Agency has staged a 140 mile rally for unmanned vehicles. No vehicles completed the first race in 2004, four vehicles completed in 2005. The 2007 race involved manoeuvring in a mock city environment, executing simulated military supply missions while merging into moving traffic, navigating traffic circles, negotiating busy intersections, and avoiding obstacles.

15. Killer Drones

In January 2008, the CIA assassinated Taliban Abu Laith al-Libi in a house in Pakistan with a Predator drone missile controlled with real-time, full-motion video from Creech Air Force Base near Las Vegas.

16. Swarming Robots and Smart Dust

I-Robot corporation already manufactures robots on caterpillar tracks used for searching houses, caves, bunkers etc and defusing bombs in Afghanistan. In 2003, DARPA announced it was commissioning IRobot to develop 120 such robots with "swarm intelligence" mimicking the behaviour of insects, but there is no mention of it on their website. Another DARPA project to produce "smart dust" — swarms of complex sensors not much bigger than a pinhead — also seems to have gone quiet.

17. Exomuscle

The US Army's Institute for Soldier Nanotechnologies, has developed a nano based material called exomuscle which might be used as a prosthesis to help soldiers handle and lift heavy objects. Exomuscle might also be embedded in the soldier ensemble, along with physiological monitoring and diagnostic sensors. The soldier's uniform could then act as a tourniquet to limit blood loss or perform cardiopulmonary resuscitation, as needed on the battlefield.

18. Computer Controlled Leeches

Scientists at Germany's Max Planck Institute have controlled the movements of a living leech from a personal computer.

19. Direct Brain Computer Interface

Around 2003, Miguel Nicolelis at Duke University implanted sensors in monkeys brains enabling the animals to control a cursor on a computer screen just by thinking about it. The technique has since been repeated with human brains. In 2005 tetraplegic Matt Nagle became the first person to control an artificial hand as well as a computer cursor, lights and TV using a chip implant in his brain made by Cyberkinetics Neurotechnology's BrainGate chip-implant.

20. Brain Scanning

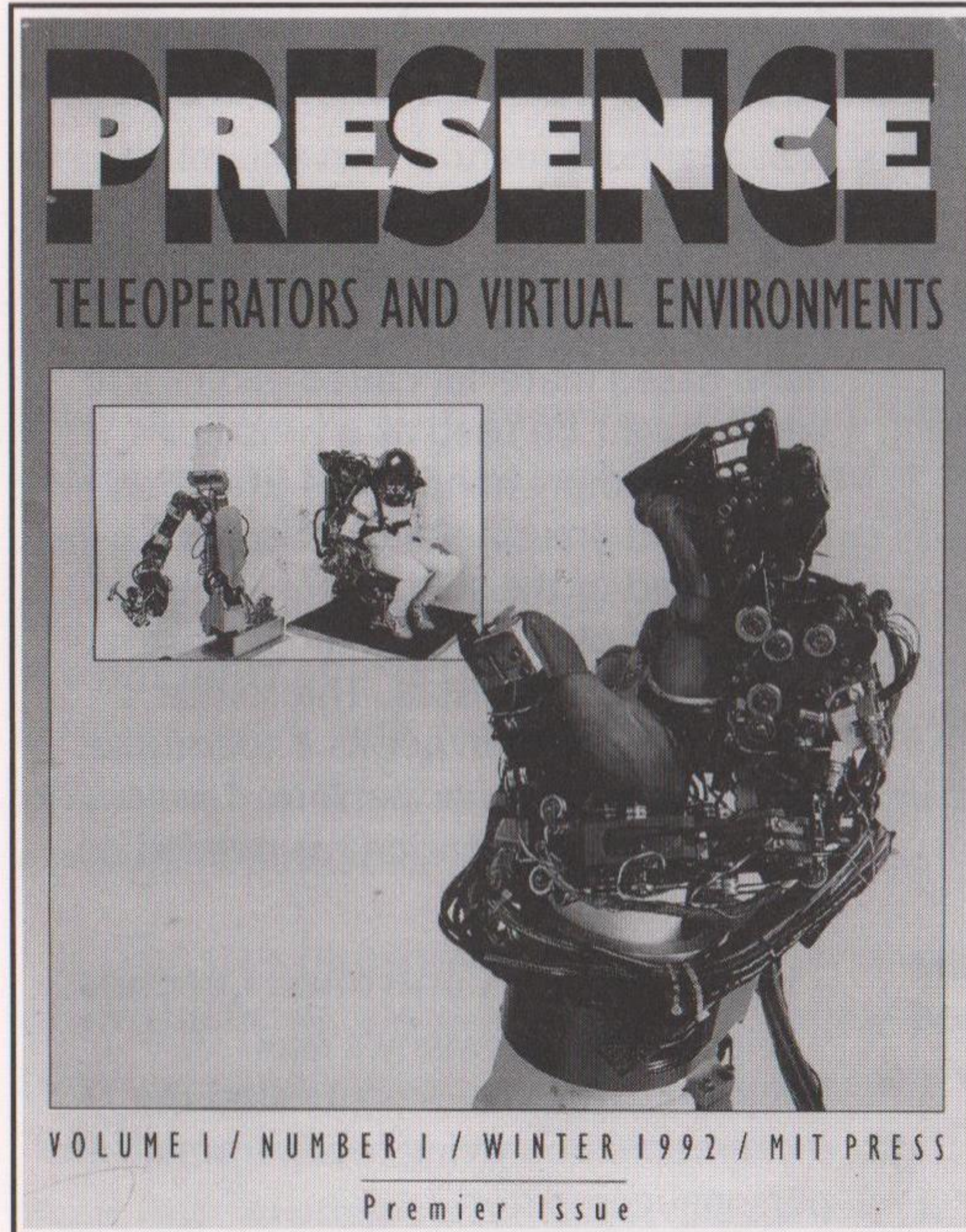
A team from California University, used MRI brain scanning to predict successfully which out of a number of photographs a subject was looking at. Jack Gallant wrote in *Nature*: "It may soon be possible to reconstruct a picture of a person's visual experience from measurements of brain activity alone. Imagine a general brain-reading device that could reconstruct a picture of a person's visual experience at any moment in time."

21. Neurochips

A neurochip is a chip (integrated circuit/microprocessor) that is implanted in the brain and senses the electrical impulses of neurons in the human brain. In 2003, a team led by Theodore Berger at the University of Southern California started work on a neurochip designed to function as an artificial or prosthetic hippocampus in rat brains and is intended as a prototype for the eventual development of higher-brain prosthesis.

22. Neurochip Braincell Computer

In 2004 Thomas De Marse at the University of Florida reported using 25,000 neurons taken from a rat's brain and cultured in a Petrie dish to fly a F-22 fighter jet aircraft simulator.



Robotics have advanced over the last two decades, but not that fast. Left, the first issue of MIT's robotics and virtual reality journal *Presence*, published in 1992. Above, Wakamuru, Mitsubishi's Linux-brained domestic robot, which moves around the house avoiding objects, understands 10,000 Japanese words, and can distinguish human faces.

transubstantiation into virtual reality will be achieved around the middle of this century. Kurzweil predicts that the "profound and disruptive transformation in human capability" which he terms the "singularity" will occur in 2045. He argues, with the aid of dozens of graphs, that the development of technology follows an accelerating exponential curve. For example the number of bits of magnetic data that could be bought for a dollar has increased by an order of magnitude every five years or so since 1950. In 1990 a dollar would buy you a megabyte; in 1995 10 megabytes, in 2000 well over 100 megabytes, and in 2005 about 10,000 megabytes. If our capabilities increase at this logarithmic rate, Kurzweil argues, then within 40 years our universe will be "transformed into exquisitely sublime forms of intelligence."

These extrapolations are not entirely convincing. In reality anything can happen. The first unmanned spacecraft was Sputnik 1 in 1957. The first man in space, Yuri Gagarin, blasted off only four years later in 1961. After another eight years, in 1969, Neil Armstrong stepped onto the moon. Since then, 39 years have elapsed, and humans have trod no further. In this case, the exponential curve has been in the opposite direction.

Moreover when Kurzweil makes short term predictions, he is often wrong. In 2005 he wrote:

"by the end of this decade, computers will disappear as distinct physical objects, with displays built in our eyeglasses, and electronics woven in our cloth providing full-immersion visual virtual reality. Thus 'going to a website' will mean enter-

ing a virtual-reality environment — at least for the visual and auditory senses — where we can directly interact with products and people. Although the simulated people will not be up to human standards — at least not by 2009 — they will be quite satisfactory."

Well it's 2008 and we are still some way off from all of this. No doubt it will come one day, but Kurzweil is either carried away by his own enthusiasm, or else considers that the best way to sell futurology is to compress the time frame so that readers sense that they might be affected within their lifetime.

But just because Kurzweil and other enthusiasts like to exaggerate, that does not mean that the transformation which they foresee will not occur eventually. Technology over the last decades may not have advanced towards "the singularity" at the speed

that some transhumanists have anticipated but it is still moving in that direction at a brisk pace. The mapping of the human genome was completed in 2000, several years ahead of schedule (in sharp contrast to football stadiums and the like), "because DNA scanning technology grew at a double exponential rate" and at a lower cost than estimated. In the following year the number of patent applications in the field of cloning and stem cell research increased 300 per cent. The list of recent GNR developments on page 17 shows that humanity is advancing steadily towards transhumanist goals. There are tens of thousands of research scientist around the world working on such projects. The majority of them at present are in the United States, but in another decade there will be many more in China and India. We may not be rushing headlong at the speed which some hope for, but we are not exactly dawdling.

"Democratic Transhumanism"

The other reason why the transhumanist project needs to be taken seriously is that a second wave of commentators is emerging who are making the transhumanist agenda more palatable to a dominant liberal agenda that shuns extremists. James Hughes, author of the book *Citizen Cyborg* is an example. Whereas Drexler, Moravec, Kurzweil and the like revel in their role of maverick visionaries, Hughes couches his arguments in the language of liberal academia. He advocates "democratic

transhumanism" as a middle way between the excesses of libertarian capitalist extropians and the "left-wing bio-Luddites". He reassures us that:

"Transhuman technologies can radically improve our quality of life and we have a fundamental right to use them to control our bodies and our minds. But to ensure these benefits we need to democratically regulate these technologies and make them equally available in free societies."

Hughes relies heavily on a specious form of politically-correct moral blackmail also advanced by the animal rights theorist Peter Singer (not to mention Hollywood sci-fi). It runs like this: Scientists will soon have the power to create or breed cyborgs — new life forms which are imbued with a high level of consciousness. To destroy, eat, enslave or discriminate against such sentient beings, were they alive, would be "human racist" (Singer's word is "speciesist", but "human racist" sounds more reprehensible). Since it is racist to prevent ethnic groups reproducing, it is "human racist" to prevent cyborgs being created.

The reverse argument is that it is precisely for this reason that reproductive human genetic modification should be stopped. The ability to reproduce sexually draws a clear line between one species and another — one of the few clear lines in nature — and it defines unambiguously what is human. Once we blur or destroy that line, in a biological world which runs on species eating and exploiting each other, we deal ourselves an ethical dilemma that no human (least of all a scientist) is sufficiently wise, or impartial, or authoritative to resolve.

Hughes doesn't subscribe to the "singularity", and the tone of the book suggests that he is wary of the more madcap proposals of extreme transhumanists. But a careful reading shows that he anticipates most of the developments that Kurzweil advocates, on only a slightly longer time scale. Technological advances, he says will be "sudden and dramatic", and he expects uploading of the human brain onto computers to occur "somewhere between 2050 and 2100". In fact Hughes's book is more disturbing than Kurzweil's precisely because it is further removed from science fiction. Its tone of politically correct moderation is designed to soften up policy-makers into accepting as safe and normal, what would once have been regarded as wacky. Next to appear will be text-books on transhumanism for undergraduates, which will give a "balanced" appraisal of the pros and cons and encourage fudged "non-extreme" conclusions that lead us further down the slippery slope.

Meanwhile, those who stand to benefit from the advance of the transhumanist agenda, the Frankenstein scientists and the cowboy corporations, are pushing, pushing, pushing at the boundaries of public opinion and policy. Those bound-

aries haven't yet been reached in the nano and robotics fields yet, but they are steadily being breached on the human genetics front. As the Human Fertilization and Embryology Bill winds its way through the UK parliament, one scientist after another has been wheeled out to state the case for stem cell research and animal/human embryos, while the only opposition comes from the right to life lobby, whose understanding of the long term social and indeed spiritual issues at stake is close to zero. No MP has come forward with a secular critique of the Bill's measures.

Those of us who believe that it is not the mission of humanity to conquer the universe, but to co-evolve with the other species who share with us this special and wonderful planet, ought to be taking more notice and kicking up more of a fuss. Every step that gives scientists more control over nature and reproduction is a step towards the dire new world that the prophets of transhumanism have mapped out for us.

Part 2 of this article, exploring why resistance to the transhumanist agenda from the green left has been restricted to GM crops, will be published in the next issue of *The Land*.

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Human Genetics Alert Briefing PLEASE ACT NOW

to Shut the Door on GM Human Beings!

This summer, British MPs will decide whether to allow scientists to start research on the ultimate step in genetic engineering: the creation of GM "designer" human beings. In the Human Fertilisation and Embryology Bill, now going through Parliament, the Government wants to allow the creation of GM human embryos, in order to develop safe technology for creating GM babies. This is not just a hypothetical scenario: leading British scientists, such as Robert Winston and Ian Wilmut, have already patented techniques for doing this, including patenting human semen and embryos.

If you care about the impact of GM on food and the environment it makes no sense to be quiet about this. (We are a secular campaign - this is not about the "rights" of embryos, but about the social consequences of GM humans.) The driving forces behind the push for GM humans are no different from those with GM food: money and scientists' desires for control over nature. And just as with GM food, the result will be loss of genetic diversity and the creation of new inequalities. Children will be designed to compete better but, of course, the rich will be able to purchase extra genetic advantages for their children. There is no medical need for HGM (see www.hgalert.org/Stop_GM_Embryos.html for more details), but once it is used for medical purposes, it will soon be used for cosmetic and "enhancement" purposes, just as drugs and surgery are being used today.

Human beings are the only species left on the planet where there still exist major technical, ethical and legal barriers to genetic engineering - this is a battle we can win. Most governments have banned HGM - Britain would be the first to allow it. Although this Bill prevents the creation of GM babies (with a major loophole) for now, while the technology is still unsafe, Government documents show that GM babies are the ultimate goal. So there must be democratic debate now.

WHAT YOU CAN DO

- Write to your MP, and to the Minister responsible for the legislation: Dawn Primarolo MP, Department of Health, Richmond House, 79 Whitehall London SW1A 2NS; Andrew.Earnshaw@dh.gsi.gov.uk. It is always better to use your own words, but, you can use www.hgalert.org/Sample_letter.html. Please copy your messages to david.king@hgalert.org.
- Support Human Genetic Alert's (www.hgalert.org) campaign: let us know what you have done, and, if possible, send us a donation. For more information on this issue, visit www.hgalert.org/Stop_GM_Embryos.html.

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FARMING

STOCKFREE BRITAIN

JENNY HALL responds to the challenge in our last issue to paint a picture of British land use without domestic animals.

When I saw Simon Fairlie's article, "Can Britain Feed Itself", I was really pleased that such important issues were eventually being discussed. My premise is that organic livestock farming systems as currently practised cannot feed world populations as livestock and people compete for natural resources. Massive increases in world populations would not have been possible without synthetic fertilisers. If you overlay the world oil use graph with the world population graph you will see they are identical. The big question is – how do we survive peak oil and climate change with large world populations? To me the answer is simple – change our culture away from eating meat and dairy and move towards plant-based diets. Produce most food, fibre and timber within closed-biological cycles, rely on trees and have as local economy as possible. The achievement of these goals will occur through widespread and honest carbon accounting where we measure our carbon equivalent emissions with a view to massively reducing them. Tackling food emissions will not reverse climate change but to me it is a tangible starting point.

The veil as to what is currently happening on specialized organic livestock units needs to be removed. Cereal grains (often imported) are readily fed to organic animals even if there is a higher proportion of grass in the feed than in non-organic farming. The "livestock permaculture" illustration is more in line with what the founders of the organic movement had in mind when describing mixed organic farming within closed systems, where these animals rarely eat cereal grains. I have checked the figures myself and agree with Simon's figure of 7.2 million hectares for the "vegan permaculture" scenario. I would however like to rename it "stockfree-fertility". "Stockfree" has been adopted over "vegan" as a term to be inclusive to the whole farming community who have the skills to put much of what we are talking about into practice.

"Stockfree" means grown organically without animal inputs where all arable land is directed for crops for human consumption and all marginal lands are given to tree crops or wildlife. Soil fertility is maintained in four principle ways (1) leguminous green manures, (2) chipped branch wood, (3) composts made from plant wastes, and (4) humanure (although this is not currently allowed under organic regulations). The first two take fertility directly from the soil and the last two recycle minerals already in the system. The green manuring proportion of a farm rotation would be 25%-40% but on sandy soils more considera-



A Lap of Windfalls, Clare Leighton, 1935

tion would need to be given to fertility. Therefore in our calculations we have opted for 40% to err on the side of caution but would expect this to lower as a percentage as stockfree-fertility farming techniques improve. In other publications a 25% green manuring ratio has been used¹ and this may be technically feasible in future, making the "stockfree-fertility" arable land figures even more favourable.

The Phosphorus Question

As a side issue, in a "stockfree-fertility" scenario there is the feeling that phosphorus is being mined from the soil too quickly and as humanure is not being returned to the soil there is no biological cycle. In reality all organic farming mines elements from the soil it is just that the organic livestock do this over a larger area. Animals do not create minerals or fertility in their bodies. Specialised organic production is propped up by conventional farming with the widespread use of manures from chemically fed and routinely medicated livestock. These sources of phosphorus cannot be sustained in a post oil era. Stockfree-fertility tries to access mineral reserves deeper in the soil and does not claim sustainability into perpetuity but can make claims for the long-term. Iain Tolhurst's stockfree system in Reading of the past fifteen years has shown an increase in P and K through soil analysis. The fertility comes from deep rooted green manures like red clover and lucerne which can bring up minerals from deep in the subsoil to the realm of plant roots in the top soil.

It is the reduced greenhouse gas implications of stockfree-

fertility that are its greatest attraction. Green manures are carbon sinks providing the labile organic matter in the soil which is a short term larder. Whilst more commonly practised in Canada, stockfree-fertility can also utilise chipped branch wood from deciduous branches no thicker than 7cm, although there is the carbon footprint of the chipping machines to consider. These are applied directly to the soil and have properties in common with compost but add to the recalcitrant organic matter (long-term stores) and it is harder for them to be oxidised away through tillage. Agroforestry is an integral part of the stockfree-fertility approach to arable land. Trees obviously have deeper roots than the green manures so have access to larger reserves of phosphorus. Unfortunately for us tenant farmers it is difficult to plant trees and there would need to be an agroforestry strategy planning for the integration of annual and perennial crops. We would also need to recycle organic wastes including humanure. It would not be applied directly to the crops but to the green manures in rotation so there would be at least a 24 month gap. In the Northwest this is currently happening with chemically treated sewage sludge which has poorer ecological credentials than locally-generated, biologically-composted humanure.

Below is a working example and probably needs further elaboration. The wholefood plant-based diet as recommended in Stephen Walsh's seminal work Plant-based Nutrition and Health is up there with the Cretian diet in terms of its health credentials but people in Crete eat twice as much fruit to vegetables. We need to reintroduce a culture of growing perennial fruit especially as many berries will grow on marginal land and we may be able to grow more exotic species if Britain gets warmer. The problem is that organic fruit growing does not yield a quick return because of establishment costs, lead in times between planting / harvesting and the high labour costs for picking.

Greenhouse gas emissions

Carbon losses caused by tillage³ are estimated to be 13 million tonnes CO₂ for 4.3 million ha. If we take use this as a guide:

- the "livestock permaculture" at 4.6 million ha annual crops causes 13.9 million tonnes CO₂ from tillage and
- the "stockfree-fertility" arable land figures are 5.1 million ha which causes 15.4 million tonnes CO₂ from tillage.

However, within both scenarios there is carbon sequestering because of the growing of green manure or grass ley. At a recent Soil Association conference the figure of 4 tonne carbon sequestering per hectare⁴ was given so in

- the "livestock permaculture" at 2.9 million ha = 11.6 mil-

Methane from livestock in the 'livestock permaculture' scenario

Animal	Livestock permaculture population ⁵ millions	Enteric ⁶ Fermentation tonne CH ₄ head per year (approx)	Manure tonne CH ₄ head per year (approx)	Total million tonnes methane	CO ₂ equivalence million tonnes	Scenario populations compared to 2006 populations
Cows	3.8	0.075	0.003	0.296	6.22	37%
Pigs	9.9	0.015	0.006	0.208	4.37	202%
Sheep	18	0.008	0.0003	0.149	3.14	52%
Chickens	66	N/A	0.0003	0.020	0.42	38%
					14.15	

Stockfree Fertility to Feed One Person

Food	Daily Kg	Annual Tonnes	Yield per ha	Area required ha	Daily Energy (kcal)
Cereals	0.30	0.1095	4.3t	0.026	1050
Potatoes	0.45	0.164	25t	0.007	380
Greens	0.23	0.084	25t	0.003	44
Roots	0.23	0.084	35t	0.002	61
Alliums	0.23	0.084	30t	0.003	133
Legumes	0.23	0.084	7.5t	0.011	50
Sugar	0.03	0.011	7.5t	0.001	100
Fruit & nuts	0.23	0.084	7.5t	0.011	117
Omega 3 oils	0.04	0.015	0.8t	0.019	357
Clothing		0.007	3t	0.002	0
subtotal				0.085	
Green manure 40%				0.034	0
TOTAL				0.119 per person	2292

Adapted from Can Vegan Organic Farming Save the World by Dave from Darlington, Growing Green International, Sum-

lion tonnes carbon sequestering and

- "stockfree-fertility" at 2.1 million ha = 8.4 million tonnes carbon sequestering.

Unfortunately the methane emissions make the "livestock permaculture" less attractive. Methane is accounted for in terms of greenhouse gas warming potential, stated in terms of carbon equivalence, and is multiplied by 21.

From this table we can see the carbon equivalence emissions for the livestock permaculture scenario and compare it to the stockfree-fertility scenario.

Carbon emissions from "livestock permaculture" = 13.9 minus 11.6 add 14.15 = 16.45 million tonnes CO₂

Carbon emissions from "stockfree-fertility" = 15.4 minus 8.4 = 7 million tonnes CO₂.

From this very crude exercise we can see that "stockfree-fertility" farming emits less than half of the greenhouse gas emissions of the "livestock permaculture" scenario. I haven't taken into account the "zero tillage" systems that would occur on a localised level which would result in less CO₂. These take land to grow mulching materials, haulage to move the bulky materials and you cannot grow trees next to mulched beds because of the spread of tree roots.

(cont)

It is beyond the realms of this article to discuss further carbon emissions from inputs including those which are direct (e.g. fuel), indirect (e.g. off farm purchases) and capital (e.g. embodied energy in building a tractor). Embodied energy is largely linked to the level of mechanization in the system. I am however, happy to present this information in a subsequent article. What surprised me is that 'livestock permaculture' and 'stockfree-fertility' scenarios have more in common than what divides them; the large scale reduction of livestock populations (with the exception of pigs), only 28% of present UK feedgrains and stopping £23 billion worth of food imports⁷. I do, however, have misgivings in "livestock permaculture" about so much bovine milk for human consumption linked to onset of early puberty⁸, certain cancers and (whilst it is counterintuitive) osteoporosis.

Draught Animals and Biofuels

I think that Simon's figures for draught animals on arable land are too low. The figures seem scant but each draught horse takes approximately one hectare⁹ but I am too inexperienced to know how many you would need. In bygone times draught horses would not only be fed grass but also oats to keep them in good condition and from anecdotal evidence we understand that it would be approximately a third of the productive land of any farm. With a large population I am not sure whether this is the best strategy. I am a fan of the tractor because they don't require as much responsibility. I would like to see the tractors of the future run on woodchip steam units for high draught requirement and solar/renewable electric tractors for light work. Whilst these suggestions may lead you to think that I am a technical optimist, I personally feel that these are tools of appropriate technology.

However, I fundamentally oppose liquid biofuels grown from arable crops. Following on from the research of Pimentel¹⁰ liquid biofuels require more energy to produce than you get from their combustion and therefore I have not included them in the "stockfree fertility" scenario. Also the carbon loss from tillage needs to be added into the equation. Pimentel advocates burning biomass to produce thermal energy and the steam and electric tractors are in line with this. I would like to challenge Simon's view of willow monoculture as it is more biodiverse than grassland. Willow can be grown on marginal land, provide an alternative income to hill farmers¹¹ and has many redeeming features. On the farm where we rent there is a small willow plantation and we think it is beautiful as we have seen wrens, chaffinches and reed bunting and best of all a tree sparrow (who likes this habitat), a declining species and the first one my partner has seen in fifteen years of avid bird watching. It is also great camouflage in summer for our market garden and I am sure a fundamental reason for low pilfering even though we are close to urban populations.



Marginal Land

What to do with the 14.8 million hectares of marginal land: this is the crux of Simon's challenge. History has shown us clearing forest for domesticated grazing animals leads to mass species extinction. In a low carbon Britain pasture, rough grazing and set-aside (2006 figures) could be freed for more forestry, willow coppice, berries, fuel wood and managed "wildlife conservation" (e.g. open moorland or forest glades grazed by semi-wild herbivores) and "wild land" — what Mark Fisher describes as "self-willed land"¹². Our uplands would be relieved from their grassland monoculture and with their new tapestry of habitats could provide carbon sinks, food, renewable energy and much more biodiversity. Grazing these lands with domesticated livestock ensures their methane emissions undo the good work of the carbon sinks. These are some figures that I have come up with (again on the back of an envelope job) and there may be leeway for change for example, the managed

wildlife conservationists could jostle their hectares with the supporters of "wildland". This is really just an initial attempt that will inevitably be revised. My gut instinct is that as oil becomes scarce and if renewables cannot keep pace (as their infrastructure is energy intensive in its manufacture) then more land will become wild anyway. If we aim to heat and supply energy for two thirds of the 24.7 million households¹³ 16 million hectares will satisfy this. Simon has already given the figure of 6 million hectares for managed timber/pulp woodland based on 3/4 current usage. This means we are already up to 22 million hectares, the total land in Britain. As there would be heating from other sources e.g. geothermal and energy from wind and tidal I feel:

- 10 million hectares of woodland for all needs is a realistic target.
- 1 million hectares - Fruit berries and nuts. These are a really important consideration especially if sea levels rise Most of our best arable/horticultural lands are in low lying areas and so we should take the precautionary principle and plant food trees and bushes over rearing grazing animals.
- 1 million hectares — Managed wildlife conservation.
- 2.8 million hectares — "Wildland."

This level of biodiversity is needed for climate change adaptation. As weather patterns and pest/predator/pollinator populations change we need as much diversity as possible to fill in potential gaps in the food webs which could send our crop pests out of balance.

Lopsided Rural Economy

The difficulty would arise as arable and marginal land is not evenly distributed across Britain. For example in the Northwest we have 6.7 million people (the legacy from our industrial heritage) living on 2.17 million hectares of land of which only 0.14m ha is suitable for cultivated crops. To make matters worse much of this arable land would be lost in West Lancashire and Fylde if the sea levels were to rise. So there would need to be (1) mass

urban resettlement of particularly Liverpool and Manchester or (2) a degree of regional specialization. In the Lancashire / Greater Manchester area we could concentrate on the berries and trade with Cumbria for our timber and the Midlands for our arable crops. Agrarian resettlement can be mobilized quite quickly - for example the Women's Land Army in WWII. However, history has also shown us that relocating blighted urban areas to the countryside is likely to create ghettos. The level of agrarian resettlement would depend on the level of work on farms. If there is zero oil and no machinery run on renewables then we will have to resort to muscle power.

I favour appropriate technology which requires a strong design system — the strength of the permaculture approach. I would argue that steam and electric tractors are appropriate technology and their widespread use would lead to more urban settlement hence the link between mechanization and rural employment. On the other side of the coin, my idea of 1 million hectares of berries will certainly take a lot of picking and if we aim to be self-sufficient in timber, pulp, wood biomass and thermal heating from marginal land there will be a lot of

Letter from Bill Grayson

I am really impressed with "Can Britain Feed Itself?" and am keen to see if this kind of approach could be used on a more local scale, maybe within a National Park or an AONB, in an effort to compare land resource with the needs of the local population. This should lead to a land-use blueprint that best meets the needs of environmental sustainability.

But overall I feel it could do with one last level of analysis in which the need for meat and particularly milk, which in land terms seems unjustifiably expensive, is completely reassessed. We needn't be using livestock to generate fertility if we are properly recycling the nutrients that we ourselves are using, particularly as the need for N can largely be met from the appropriate use of legumes (which will greatly reduce the release of N₂O from fertilizer applications) Animals should be complementing our system for producing staple foods, with ruminants utilizing areas that cannot be cropped or are needed for specific and complementary amenity purposes and pigs and poultry being reared on food waste and by-products. This would bring down the amount of overall production to levels that the land could support most sustainably and our diets would need to reflect this.

I think your estimates of 3700 litres per grass-fed cow in the Permaculture scenario may be a bit low. Of course you can only base these calculations on established data and there is very little to go on when it comes to milk yields from forage-only diets. However I do think UK data will be particularly unreliable as a guide because of the heavy dependence on concentrates in recent times. There are reports of much higher yields from New Zealand where the emphasis is on maximising production from forage, resulting in a much smaller type of Holstein cow. Large size is regarded as a negative trait there because they need more maintenance feeding. Also you will get a lot more beef animals if you keep cows that last more than the 5 lactations that your data is based on. And a lot better ones (ie more efficient converters of forage and by-products) if they are bred out of more dual purpose breeds like the Shorthorn or Red Poll.

rural jobs in both primary and secondary industries. I do not perceive urban settlement per se as a bad thing; as to whether it is sustainable — I doubt anything is into perpetuity. However, I perceive "stockfree-fertility" as offering the best option, on the current state of knowledge, for a low carbon economy which feeds, clothes and shelters everyone in Britain. As always access to land is the biggest barrier to making it happen.

Jenny Hall is an organic grower, teacher, children's author of the series *Organic Alice* available through www.sowandgroworganics.co.uk and activist for carbon sequestering food. Thank you to everyone, too numerous to mention, who helped with feedback.

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Corrections to Can Britain Feed Itself

Jenny Hall is correct that I got the figures for horse-power wrong, though the performance of horses is not as bad as she makes out. Figures of around a third of all land required for horse-power relate to the days when crop yields were far lower than today. I took the figure of 10 to 1 from the data I used in "Biofuel, Horsepower and Hectares", in *The Land* 2. My figures are based on a team of two horses being needed to cultivate 10 hectares, whereas according to Charlie Pinney (who is the source of Jenny's information) subsequent increments of 10 ha only require one additional horse, so only five horses are needed to cultivate 40 ha,

However I failed to factor in that the 10 to 1 figure was based upon high yields of 8 tonnes of grain per hectare (because that's what the biofuel analysts use) whereas I should have used the organic figure of 4.3 tonnes per hectare. This means that the Permaculture Livestock figure for horsepower, and for the biofuel tractor, jumps 396,000 ha to 861,000 ha, while the Permaculture Stockfree biofuel tractor goes up by 623,000 to 1,348,000 ha. This is a significant mistake allround leading one to look for cheaper solutions, such as biogas for a tractor, or oxen. However horses can do a great deal of other work aside from cultivation on this diet, including road work, whereas oxen are rather slow for this, while the tractor would require extra fuel. Horses currently occupy very roughly 800,000 hectares today, though not all of this is potentially arable.

I am aware that grass-fed dairy farmers in New Zealand and the US are achieving considerably higher yields than those I have used. But information about stocking rates was sparse, and I kept the yield low on the advice of a leading UK organic analyst.

As for Bill's and Jenny's misgivings about cows, I agree that the methane is a problem. Figures in *Farmers' Weekly* ("Milk yield holds the key to lower carbon footprint", 20 Aug, 2007) suggest that that a pint of milk a day is responsible for methane equivalent to 100 kg of CO₂eq, and this tallies exactly with Jenny's figures. This is about one per cent of an average person's current carbon expenditure. Since the cow is far more efficient than anything on four legs or four wheels at turning grass into edible food, and since grass is what Britain grows best, it seems to me a one per cent worth keeping.

The health problems associated with milk may seem important at the moment, but tend to pale into insignificance in comparison to the nutrition milk affords poor people in less affluent times, which is why we were all given it at school. There would be far worse malnutrition in India if it were not for its dairy sector (the largest in the world) which to a considerable extent is fed on crop residues.

I also feel cows are worth their costs because I suspect a dairy-focussed UK food economy would be more equitable, local, diverse, rural and natural than a stockfree one. More equitable because livestock are harder to mechanize and so it is far easier for a smallholder to compete with agribusiness by rearing livestock than by growing wheat or field beans.

S.F.

DEFAULT LIVESTOCK FARMING

SIMON FAIRLIE considers how meat and dairy fit into a sustainable farming systems.

The stockfree system advocated by Jenny-Hall is clearly more sustainable than the current agricultural economy. As she notes: "Most organic livestock farming systems as currently practised cannot feed world populations as livestock and people compete for natural resources."

However not everybody wishes to see agriculture become completely stockfree. Anyone who wants to continue eating meat and dairy products, and to keep animals in our farmed countryside, needs to consider how animals can be raised without competing with humans.

In *Livestock's Long Shadow*, the FAO refer to what they call a "default land user strategy" for livestock. It is an ungainly term, but it does accurately express the main role that animals can play in a sustainable food economy. This is what the FAO have to say:

"Livestock are moving from a 'default land user strategy' (ie as the only way to harness biomass from marginal lands, residues and interstitial areas) to an 'active land user' strategy (ie competing with other sectors for the establishment of feedcrops, intensive pasture and production units.) This process leads to efficiency gains in the use of resources."

How growing corn and feeding it to livestock at a five or ten to one conversion ratio can be construed as an "efficiency gain" is a mystery that only FAO economists can unveil. But they are correct to state that in traditional agricultural communities the main role of animals is to turn vegetation that cannot be eaten or economically harvested by humans into useful goods and services. Default livestock eat vegetation growing on marginal or uncultivable land, crop residues, by-products from food processing, substandard crops, spoilt or wasted food, and surplus crops. Their dead bodies supply fat, meat, leather, horn, sinews and a host of lesser products; alive they provide traction, a food storage system, companionship, heat and manure.

This last item is particularly significant. Livestock do not create the nutrients in manure — these are extracted from the atmosphere, or the crust of the earth by plants, bacteria and other organisms. The service which grazing animals perform is to recuperate surplus nutrients from places where it would be uneconomical for either man or machine to do so, transport them to the farm, digest them and deposit them on or close to arable land. A grazing animal is a mobile mower, chipper shredder and compost digester rolled into one.

Stall fed animals provide a similar service, except for the transport, by increasing the value of waste nutrients. Whereas municipal compost made from green waste and catering waste in the UK is worth from £5 to £11 per tonne (and so has to be subsidised by waste disposal charges) the price of animal feed and litter is higher, ranging from around £30 per ton for corn stover, and £60 per ton for straw or poor hay, to £280 per ton for oilseed cake and surplus grain. This makes it economical to shift



An FAO picture bearing the caption "Cows eating rice straw. The most efficient way at present to recover the energy of the straw."

the nutrients in byproducts to where they are needed. Unfortunately in an industrial farming economy, dependent upon economies of scale, nutrients are often moved to the wrong place — they accumulate in huge quantities at "confined animal feeding operations", increasingly sited on the outskirts of large cities, where they cause a pollution problem (what *Livestock's Long Shadow* calls "the urbanization of livestock"). In a default livestock economy, animals are spread around a more decentralized network of small farms so that even industrially processed nutrients can cascade back to the land through the sale of bags of feed.

If we returned to a default livestock system, the number of animals farmed worldwide would decline considerably, as would the amount of meat eaten — but neither would be negligible. According to California University food analyst J G Fadel, the processing by-products of seven industries (vegetable oil, sugar beet, grain milling, distilling, citrus fruits, almonds and cotton) in 1993 amounted to about a quarter of a billion tonnes of dry matter, which if fed to animals would be sufficient to support the production of 435 million metric tonnes of milk — more than the entire world's milk supply at the time, or about a quarter of a litre per person per day. Milk provides approximately a third of all the nutrients provided by livestock in the world (1997 figures).

About 15 per cent of the above figure comes from the meal left over after making soya bean oil — which is more a co-product than a by-product, because it is worth as much as the oil itself. But Fadel also calculated that the crop residues from wheat, rice, barley, maize and sugar cane (bagasse) totalled a further three-quarters of a billion tonnes of dry matter. Being mainly fibrous straws, these are often not fed to animals when better food is available — but sometimes they are, and in total they provide enough energy to support nearly 60 per cent of the entire world's milk supply, and enough protein to supply 27 per cent.

On top of that there is all the post consumer food waste. In the US, according to USDA figures, consumers only eat 44 per cent of available food, while in the UK Lord Haskins estimates that consumers waste 30 per cent of the food bought in shops.

Finally, there is grass. An estimated 25 per cent of the world's land is classified as rangeland or permanent pasture unsuitable for growing crops. In 1997, when the FAO published a comprehensive analysis of global livestock figures, farming systems based solely on grazing produced about 9 per cent of the world's meat and 8 per cent of the world's milk. In addition there would have been a fair amount of "default" grazing on the mixed farms which at the time produced 54 per cent of the world's meat and 92 per cent of its milk.

It is hard to arrive at a total figure for the amount of meat, dairy produce, leather and other commodities that are provided by livestock fed on food we cannot eat, or land we cannot cultivate. In 1979 D and M Pimentel cited figures showing that 60

per cent of livestock protein was derived from grasses and forages that cannot be used by humans, while the remaining 40 per cent was derived from food that could have been fed to humans. Since then the world's meat consumption has risen but so have crop residues and food waste, though perhaps not to the same degree. In 1997 the FAO estimated that world-wide animals consumed 74 million tons of human edible protein and produced 54 million tons. If we assume an average 5:1 conversion rate of feed protein to animal protein, that means that over 72 per cent of animal protein was fed on feed that humans cannot eat.

Not all of that 72 per cent, or of the Pimentels' 60 per cent, can necessarily be regarded as produced by default livestock rearing. Some animal forage is grown as part of a rotation on land where one might have instead grown human edible foods, though not necessarily with a great difference in nutritional efficiency. There are other issues which complicate the picture. Should high protein oil seed residues fed to animals, in particular soya, be viewed as a primary product which could be fed to humans? Might it be more rewarding to burn some of these byproducts for bio-energy instead of feeding them to animals?

Nonetheless, it looks as though a default livestock system could provide somewhere between a third and two thirds of our current supply of meat, dairy and leather without using any more land than an entirely stock-free system. Those who wish to

maintain livestock farming as a cultural and economic asset in the face of mounting criticism of its lack of sustainability should be moving in this direction.

A default livestock approach should not be seen as being in conflict with a vegan approach. On the contrary, as Jenny Hall points out, "the 'livestock permaculture' and 'stockfree-fertility' scenarios have more in common than what divides them." History supplies us with one outstanding example of vegetarian/carnivore symbiosis: for centuries the Indian subcontinent has hosted communities of vegans, vegetarians and meat-eaters living side by side. Hindus, very understandably, don't kill cows — but meat and leather doesn't get wasted either.

In this and subsequent issues of *The Land* we will be publishing articles examining the complex issues that surround default livestock farming — and (as always) considering not just the ecological efficiency of any given approach, but its implications for social justice, land access and the ability to resist the monopoly tendencies inherent in global capitalism. The first of these articles is on pigs.

SOURCES: • FAO, *Livestock's Long Shadow*, 2006. • J G Fadel, "Quantitative Analysis of Selected Plant Byproduct Feedstuffs, a Global Perspective", *Animal Feed Science and Technology*, 79, 1999. • USDA figures on waste in Smil, V, *Enriching the Earth*, MIT, 2001, p.166. • FAO, *Animal Agriculture and Food Supply*, 1997. • D and M Pimentel, *Food, Energy and Society*, Edward Arnold, 1979, p.53.

Reluctant Sarcasm

Regarding your article "The FAO's Long Shadow" in *The Land* 5, I have been left intrigued as to what sort of agricultural worker you used to be? Your attack on the UN report contains several surprising and bizarre arguments.

You suggest that if you removed all livestock, the result would be that these domestic creatures would inevitably be replaced with a large number of wild animals. So many wild animals that their methane emissions would be around 60 per cent of current livestock emissions. You're joking, right? I don't want to stoop to sarcasm but I find it hard to respond to this argument otherwise. Will these wild animals learn to grow fodder crops and to take up arms to push humans off the land?

Another point you make is that if you got rid of livestock, inevitably people would resort to increased rice consumption. Imagine that by some miracle, the world did wake up to the damage caused by livestock and decided to outlaw meat/dairy consumption. In this unlikely scenario, would our newly enlightened community decide to destroy the gains of a vegan existence by growing food of a similarly damaging nature? "Is that what you want? - coz that's what'll happen". No it won't!

You talk about reversibility and the remedial capture of carbon released into the atmosphere from deforestation, methane and manure. But the period of time you suggest for this recapturing process is "a century or so". It is my understanding that we don't have a hundred years to play with. We don't have half that amount of time. In a nutshell if you're talking more than 25 years time, it's an irrelevance to the greenhouse gas crisis we are facing.

Put aside the nitrate pollution of our waterways, the decreasing effectiveness of antibiotics, ecological damage through over-grazing, increasingly wasteful effects of foot and mouth, blue tongue, scrapie, bird flu, BSE, swine fever, etc, etc... the links between meat/dairy consumption and various cancers, osteoporosis, heart disease, etc, etc... the suffering of the animals, the wasteful misuse of land resources for grazing and fodder crops, inefficient conversion ratios of plant protein into meat and dairy protein, high energy requirements for refrigeration of meat/dairy products, the huge amount of greenhouse gases released into the atmosphere through livestock farming.

Put all of this aside because according to your article, the story that really matters is that 'Livestock's Long Shadow' is a stealthy attack on the lowly subsistence farmer. To return to my initial question - what sort of agricultural worker were you? I think I can guess at the answer.

Yours, Ian (via e-mail)

Simon Fairlie writes: I have worked as a farm labourer (fruit picker, sheep and goatherd, vine-worker) and a smallholder, concentrating on dairy cows and forestry.

Organic Food Security

I particularly appreciated the articles on the vital questions "Can Britain Feed Itself?" and "Can Organic Agriculture Feed the World?"

In the second article you concentrate on the question as to whether sufficient food could be produced by organic methods to feed the world's growing population, ie on the supply side. An important question about whether the world does get fed, however, requires a look at the demand side. There is enough food available now, but not enough of it is getting to the groups who are too poor to buy it.

Here the difference between industrial agriculture methods and organic agriculture is crucial. Agribusiness can feed the world, in theory, but when we ask whether it will, the answer is clearly, no. It tends to concentrate land and income in ever fewer hands, because of its high capital costs and the economies of scale resulting from mechanization. When I studied the Green Revolution in India in the 70's, this logic was becoming clear. Since then countless peasant farmers have been reduced to debt, bankruptcy, and in many cases, suicide, because the cost of inputs raises the risk if crops fail. High intensity chemical agriculture increases the numbers who lose their land and flock to the towns to eke out a marginal living.

Organic agriculture, though it can also be done in an "industrial" way, does not present the same risks, since small mixed farms can produce their own fertility. When poor people have land to produce from, their food supply is more secure. Productivity per unit of land is often greater from small than large holdings because of the labour lavished upon them. Widely distributed smallholdings and the use of more organic methods can achieve much better food security for those who most need it, than the plenteous supplies produced by agribusiness on land from which peasants have been expropriated.

Gill Westcott, Exeter.

THE PLIGHT OF THE PIG IN THE NANNY STATE

by SIMON FAIRLIE

*"Right now it's hard to make a living
Rearing all your pigs for pork and ham
Supermarkets make all the money
We don't make any money
And that's quite hard to understand
Stand by Your Ham . . ."*



In March 2008, pig farmers from around Britain staged a rally at Whitehall, memorable mainly for reworking a Tammy Wynette song under the title "Stand by Your Ham". The pigmen were drawing attention to the second crisis in their industry within nine years. In 1999-2000 world pig prices crashed because of lack of demand, largely as a result of the economic downturn in SE Asia. In England, weaners weighing 20 pounds could be bought cheaper than hamsters. This time pig prices are more stable, but the cost of feed has more than doubled. Producers claim to be making a loss of £26 on every pig, and a piggy-bank motif on the campaign's website shows the industry losing £6 every second.¹

One can understand the farmers' anger that the supermarkets are not paying them a fair price. But the problem goes further than this and in many ways pig farmers have themselves to blame. Their piggy bank is leaching money because they have forgotten what pigs are for. Why do children put their pocket-money in piggy-banks? Because the role of pigs throughout history has been to accumulate resources, and to act as a hedge against the oscillating availability and price of grain.

Pigs do this in two ways, the first of these being through their omnivorous appetite. Ever since the prodigal son turned his nose up at the pig swill and went back to daddy, the pig has been the main repository for nutrients that were unfit for human consumption in sedentary cultures. In his 1814 treatise on swine, Robert Henderson observed that pigs will: "feed on anything. They are a kind of natural scavenger: thrive on the outcasts of the kitchen, the sweepings of barns and granaries, the offals of a market, and most richly on the refuse of a dairy . . . The facility of feeding them everywhere, at a small expense, is a national benefit." In Flora Thompson's *Larkrise*, every house had its pigsty right outside the kitchen, ready to receive the "little tatars, the pot liquor" and other detritus. Engels commented sourly on the innumerable pig pens in Manchester "into which the inhabitants of the court throw all refuse and offal, whence the swine grow fat." Pigs fed on scraps during the second world war made up for the lack of animal feed (see box, p.29). The beaches of Goa are (or at least were) kept spotlessly clean and the latrines emptied by pigs which end up as spare ribs in the beach bars.

The other main function of pigs is to use up surplus grain in a good year. This is not just an economy measure; more importantly, it serves to introduce elasticity into the grain market,

through what is known as the "livestock feed buffer". The advantage of meat and dairy produce is that demand for it is elastic. People don't need it but they like it, and up to a point, however much you produce, they'll keep on buying it. The demand for cereals for human consumption, on the other hand, is inelastic. People need their pound of grain a day, but they don't need much more. In order to ensure that the world's farmers sow enough seed to cover a bad year, they must have a market to sell to in a good year. The livestock feed buffer ensures that a farmer can sow wheat, barley,

oats, beans, maize, and so on with reasonable confidence that, in the event of a good harvest, someone will buy it, because if everybody has sufficient to eat, it can be fed to animals. When the grain supply dropped and prices increased in 1972-4, the reduction in US feed consumption was as large as the total global production shortfall.² This dynamic is not restricted to a money economy. It works the same for subsistence farmers who can cultivate enough potatoes or manioc to cover a bad year knowing that it is not a waste of effort, because in a good year the surplus can be fed to pigs.

Pigs are not the only recipient of feed-buffer grain — it is also fed to beef, dairy animals or poultry. But feeding it to cows is notoriously inefficient because the bovine gut is designed to digest fibrous materials such as grass, not high protein feeds like grain. Poultry convert grain into meat more efficiently than pigs; but the advantage of pigs is that they have a high percentage of fat — which is not only in short supply in temperate climates, but also makes it easier to preserve the meat (which is why we don't have chicken "bacon" or chicken "ham").

A farmer who feeds his (or her) stock entirely upon bought-in grain is putting himself in a risky position, since he is completely at the mercy of an inherently volatile market. A farmer who wishes to hedge against disaster, should either be growing the grain himself, or else be partially reliant upon alternative feeds. The main alternative feed for cows is grass; for pigs it has always been, and it always will be waste.

This is what the UK's pig farmers have manifestly failed to do — they are now largely dependent upon grain, and market-linked products for their feed — and that is why their piggy bank is now losing money.

The Origins of the Swill Ban

In the early 1990s Professor Peter Brooks of Devon's now defunct Seale Hayne agricultural college gave a lecture entitled *Rediscovering the Environmentally Friendly Pig*. In it he provided figures

showing that only 33 per cent of UK compound pig food consisted of grains fit for human consumption; 22 per cent was oil seed residues and the remainder consisted mainly of various other kinds of animal and vegetable food residues.³

However he warned that the pig's role as recycler of waste food was under threat from a number of factors, including:

- (i) Changing animal feed legislation
- (ii) The concentration of the animal feed industry into national corporations too large to cope with intrinsically variable raw materials or those only available in small quantities.
- (iii) Lower cereal prices as a result of EU policies and trade liberalization.
- (iv) The influence of the supermarkets who were "increasingly dictating methods of production . . . and imposing limits on the range of raw materials and dietary inclusions".

Brooks concluded:

"the Pig must not be allowed to become a competitor with Man for food products but must remain a converter of that which Man cannot eat, or rejects, into a product which he can and will eat."

Fifteen years later Professor Brooks fears have been fulfilled. The proportion of cereals in pig food has almost doubled. Mole Valley Farmers' grower mix contains 66 per cent cereals, while Simon Mounsey of Feed Statistics reckons that "off the top of my head the proportion of cereals is now around 60 per cent." The bulk of the remainder consists of oil seed residues — rape, sunflower, but mostly soya — international commodities whose price is linked to the global grain price.

All the trends which Brooks pointed to have played a role in making pigs dependent upon cereals. But much of the blame for the decline of the environmental pig must be laid on DEFRA and its predecessor MAFF who have done everything in their power to regulate this recycling industry out of existence. The pressure to do so has come, not from the pig industry, but from the requirements of the more influential beef and dairy industries. In the second half of the 20th century, "improvements" in the yield of dairy cows were so great that cows could not physically eat enough grass and grain to produce the milk that their metabolisms were capable of generating, so it became necessary to find a more concentrated source of nourishment. Initially this was provided by fishmeal from the Peruvian



History of Pigs 1: Swineherd knocking down acorns

anchovy fishery, but when the fishery collapsed in 1972, because of overfishing to meet European demand, another source of instant protein had to be found. The answer was to feed meat and bone meal (MBM), which for years had been rendered and fed to omnivorous pigs and poultry without any problem, to herbivorous cows, and the result was BSE.

The BSE scare made the British public both aware and fearful of the rendering industry and prompted a series of crack-downs on the use of rendered meat and catering waste. Having caused a health scandal by feeding dead meat to herbivores,

the government reacted in 1996, by banning the practice of feeding meat and bone meal to omnivores. The result is that now large quantities of slaughterhouse wastes, particularly rich in phosphorous which the world is gradually mining to exhaustion, are being landfilled or incinerated, instead of finding their way back into the food chain and thence into the soil. Meanwhile, pigs and cows alike are now increasingly fed on GM soya from North America, or non-GM from the Amazon.

In 2000 the United Kingdom Renderers' Association was still petitioning the government to allow MBM to be fed to cross-species omnivores.⁴ But worse was to come. When the 2001 foot and mouth epidemic was revealed to have originated on a farm which had been illegally feeding uncooked swill under slack MAFF inspection, the Government temporarily banned the feeding of all swill and animal residues to any animals, including pigs and poultry — a move conveniently obscured by the smoke from the burning pyres. The Irish and French governments did the same.

When the foot and mouth crisis was over, instead of rescinding the temporary ban, the UK government made it permanent, with the approval of the NFU and the British Pig Association, who were happy to disassociate themselves from such mucky practices, and pour nice clean grain down their pigs throats. There was minimal public consultation, and no compensation for waste food recyclers who had invested thousands of pounds in new machinery to comply with the government's increasingly stringent regulations. The Association of Swill Users complained

to the Parliamentary Ombudsman who, six years later, concluded that both MAFF and its veterinary service were guilty of maladministration, but still refused to grant compensation.⁵

On 1 November 2002, with support from the UK, swill feeding was banned throughout the EU, partly because it was held responsible for some outbreaks of classical swine fever (though this is also endemic in the wild boar population).

(cont)



History of Pigs 2: Well-fed peasant farmyard, Hungary,

Germany and Austria were given a four year derogation because the ban put an end to their highly efficient food waste recycling systems, which fed an estimated six million pigs on swill, without their ever suffering a disease outbreak even a hundredth as serious as the UK catastrophe. In the peasant strongholds of Eastern Europe the ban may be having less effect. Hungarian Gábor Miklósi reported:

“Although no cases of swine fever have been reported in Hungary for quite a while now, farmers resigned themselves to the ban on swill without a grumble. They probably doubt that any authority is going to carry out dawn raids on hundreds of thousands of farms to check whether the regulations are being adhered to.”⁶

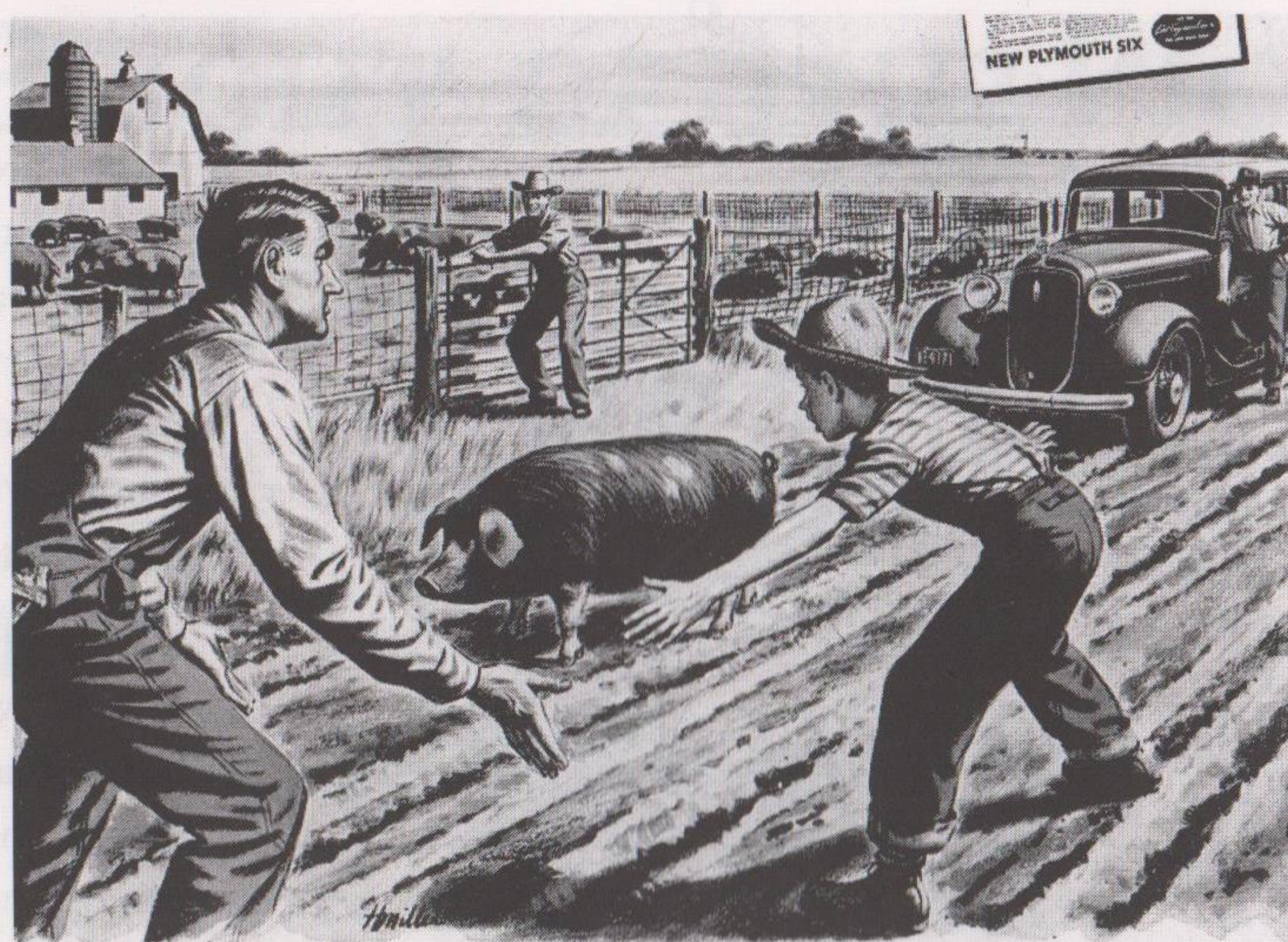
The European pig swill and rendering industries thus served as the scapegoat for the UK government’s century-long mismanagement of foot and mouth, a disease which causes no harm to pigs and is about as serious to cows as measles is to European children. Over 6 million animals were slaughtered by MAFF in 2001, to protect a beef export industry whose existence creates a vacancy for the very imports which cause the problem. The Government pinned the blame on the pig industry and helped persuade the EU to shut down the food recycling system right across Europe.

A Waste of Waste

The swill recyclers were not helped by their image. The Coop had already banned swill-fed pork from their shops in 1996, stating that it “was not a natural feeding practice”;⁷ and there was a conspicuous silence from the champions of recycling, Friends of the Earth, who were no doubt afraid that raising the swill issue might alienate some of their more sensitive supporters. One of the rare voices raised against the swill ban was that of Boris Johnson, MP for Henley. At a parliamentary debate in 2004 he reported:

“To take one example, Phyllis Court Hotel in Henley must now pay an extra £1,000 a year to a licensed collector, whose responsibility is to remove wet waste that previously went to a pigswill feeder. Given that there is room for only three years’ waste in our landfill sites, that is not the cleanest and greenest solution. It is estimated that the ban on swill feeding is generating an extra 1.7 million tonnes of waste per year, and that which does not fill up our landfill sites must be going down our drains, clogging up the sewers and attracting vermin.”⁸

Agriculture Minister Ben Bradshaw replied that when the ban was imposed, only a small percentage of the national pig herd were fed on swill and only a small proportion of our food waste was going to pigs. In other words, the once-thriving swill industry was already so decimated by regulations that one might as well kill it off.



History of Pigs 3: Family farm growing its own grain, USA.

Bradshaw didn’t specify exactly how much food was being wasted throughout the country, and there still seems to be some uncertainty. According to the government-sponsored Waste Resources Action Partnership (WRAP) “about 6.7 million tonnes — about a third of all the food we buy — ends up being thrown away”, while another report commissioned by WRAP gives a figure of 5.5 million.⁹ But these figures only represent domestic waste. According to New Labour’s favourite food consultant, Lord

Haskins, quoted in the *Independent*, we throw away about 20 million tonnes, half of all the food produced. Sixteen million tonnes of this is from homes, shops, restaurants, schools etc. The rest is lost between the farm and the shop shelf.¹⁰

“The government take their recycling targets seriously” Bradshaw continued in his 2004 speech, “and are aware that the amount of biodegradable waste sent to landfill must be reduced, not increased. DEFRA strongly supports the option of composting and the biogas treatment of catering waste.”

Not so strongly that four years later the government has actually done very much. Most of the waste is still landfilled or incinerated, and the most profitable recycling strategy has so far come from savvy car owners making biofuel from the sudden surplus of used chip oil. However in February 2008, DEFRA announced £10 million funding for an anaerobic digestion plant to process waste into energy and compost. WRAP calculates that if the 5.5 million tonnes of organic waste were anaerobically digested “between 477 and 761 gigawatts hours per year of electricity would be generated — enough to meet the needs of up to 164,000 houses.”

This is somewhat underwhelming. WRAP are proposing to take a nearly third of the food necessary to feed a nation of 60 million people and burn its energy content to provide electricity for between 260,000 and 420,000 people. At 10 p per kilowatt hour, that’s worth between £48 and £76 million.

The alternative of feeding the waste to pigs would provide 230,000 tons of pork per year with a retail value over £1 billion.¹¹ (cont p.30)



History of Pigs 4: Squeaky clean factory

Pigs through War and Pestilence

During the Second World War the quantity of imported animal feed fell from 8,750,000 tonnes in 1939 to 1,250,000 tonnes in 1943, and most of this was reserved for milk production. The number of pigs on farms was virtually halved, but the Small Pig-Keepers Council lobbied local authorities to allow people to keep pigs in their back yards. In January 1940 a national campaign to save scraps for pig swill was initiated. Neighbourhood pig clubs were formed whose members fed their pigs with scraps from homes, cafés, bakeries and anything that came to hand together with small rations of feed. In towns, waste food was boiled up into a concoction known as Tottenham Pudding — Ernest Onians, known as the Pudding King, made a fortune from selling it, which he invested in a collection of over 400 paintings. The pig clubs were so successful, that the Government exacted half the proceeds to prevent pig keepers becoming noticeably fatter than the rest of the population.

Today the government, far from encouraging feeding waste to pigs, has banned it on the grounds that it can transmit diseases. It is therefore interesting to examine DEFRA statistics on the incidence of disease during this “special period”. The two main diseases in question are Classical Swine Fever which in its acute form is frequently fatal for pigs, but doesn’t affect other animals, and Foot and Mouth Disease, which is virtually harmless to pigs, but causes unpleasant but short-lived symptoms in cattle.

CSF was endemic in Britain in the period leading up to the war with an average of about 1800 cases per year in the previous 10 years. There was a rise in the incidence of the disease in 1940 to 5019 cases, making it the worst year since 1898. Whilst this rise was partly attributed to the use of swill, it was probably helped by the fact that there was already an unusual amount of the disease around: there were 3,286 cases in 1939, making it the worst year since 1916. The government therefore embarked on a campaign to ensure that all pig swill was cooked, and by 1943 the number of cases had dropped to 547, the lowest since records began.



*Because of the pail, the scraps were saved,
Because of the scraps, the pigs were saved,
Because of the pigs, the rations were saved,
Because of the rations, the ships were saved,
Because of the ships, the island was saved,
Because of the island, the Empire was saved,
And all because of the housewife’s pail.*

after the massacre of over 400,000 pigs in three years, the disease was almost eradicated. One can surmise that the slaughter policy was reintroduced to protect the interests of emerging large scale factory farms, who stood to lose a good many more than 4.8 pigs from an infection. In 2001 the disease broke out in a shed containing 1,200 pigs on a farm in Suffolk which reared 3,500 pigs in total. Over 74,000 animals were slaughtered by the state vets before the disease was brought under control.

That, of course, is nothing compared with the bloodbaths carried out to rid the UK of Foot and Mouth, a disease which is regarded as an irritation in countries where cattle have built up resistance. Over 273,000 animals lost their lives in the 1922-24 epidemic, 487,000 in 1966-68, and in 2001, six million (or ten million according to those who believe MAFF was minimizing casualties). The increasingly apocalyptic scale of these massacres shows that the state veterinary service is run by technocratic thugs who refuse to acknowledge that disease is natural, that animals inherit resistance, and that the domestic pig as a species has thrived well enough for thousands of years on a diet of (mostly uncooked) waste.

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Maryland, USA, 1943:

"The sacrificial rite has started. Fire, water, blood: from time before recorded history, so it has been, Four ragged Negroes have rolled back the centuries, and primeval man serves his gods. Maryland, the Congo, the creeks of the Arunta, it matters not where; the elements are the same, ageless and unchanging.

They are dragging the body of the great black hog from the pen. Her blood stains the thin snow crimson as it drips from the stuck throat . . . Blood soaked into the earth of Europe: blood tinting the grey seas of the world where the waters close over the torpedoed hulks of ships. It should distress me, the sight of blood, and yet strangely I see beauty in this ceremony.

There is no hate, I tell myself. This scene before my eyes holds nothing ugly or frightening. Look at the gentle way those Negroes haul the body towards the scalding barrel, where the smoke and steam rise into the still blue air, dimming the forms of the burning logs that heat the water. There is tenderness in their movements, and a deep sense of ritual . . .

'Ma,' shouts the little Negro child by my side, "They've done killed old Betty. They've throwed her into the barrel and she's coming out all steaming and wet."

The coloured woman places the two kettles against the burning logs. She turns to the men as they lift the dripping body to its sacrificial altar. The boards of old wood bend under the weight of the men and their burden. She looks appraisingly at the wet carcass.

'You sho' must get that liver ready for dinner, Zeke,' she commands. "There hain't nothing to touch fresh hawg's liver, and you know that all right."

Slaughtering pigs on your farm is now illegal in the UK.

Picture and text by Clare Leighton from her book *Southern Harvest*, Victor Gollancz, 1943.

That's the equivalent in calories of all the food required to feed 800,000 people. To produce the same amount of pork from cereal-fed pigs would require over a million tonnes of grain, enough to feed more than 3 million people. And this is only the post consumer waste. If Lord Haskins' 20 million tonnes were fed to pigs that would produce over 800,000 tonnes of pork, about 57 per cent of all the pigmeat consumed in the UK.

Of course, it would be even more efficient if we wasted less food. But there will always be a fair amount of waste and the figures reaffirm what is common sense — that keeping food in the food chain is more sensible than burning it.

Everybody's Pride—Everybody's Business

The Stand By Your Ham campaign is a reaction to something close to a collapse of the British pig industry. The number of pigs in the UK has declined from 8.1 million in 1998 to 4.9 million in 2005.¹² The British are still eating just as much pork, but 61 per cent of it is now imported, primarily from factories in Denmark and The Netherlands, where they are fed on a diet high in imported feed, but also from France, Germany, Ireland, Spain, Belgium, USA and Poland.¹³ UK pig farmers complain, probably rightly, that they are disadvantaged by more stringent animal welfare legislation than in other countries. If Lord Haskin's figures are correct we are importing roughly the same quantity of pork and bacon as we could supply from post-farmgate food waste.

However, this is not such an ill wind. Over the last few years there has also been a discernible rise in the number of backyard and small-scale pigkeepers. There are no figures for this, and if there were they would be insignificant; but the shift in attitudes towards pigs, influenced by the campaigns of celebrity chefs like Hugh Fearnley-Whittingstall and the TV pigman Jimmy Docherty, is gathering pace. The new magazine *Home Farmer*, in its maiden issue, carried a feature article under the heading "Urban Piggies" (see photo p 35). No cottage pig-keeper has any problem finding buyers for non-industrial pork or home cured bacon.

Many of these small-scale producers will be giving whatever food waste they have to their pigs, because that is what pigs are for. Often this is a minimal quantity, compared to a pig's voracious appetite: the amount of food wasted by a normal family is nowhere near enough to fatten a hog. But if the pigs are part of a community, or kept on a mixed farm, or there are obliging neighbours, or there is a dairy, brewery, market, or even a supermarket with unlocked skips nearby, then the amount of waste food available can be quite significant.

This trend may well be a sign of things to come. If, as we hope, the fossil-fuel dependent industrial farming system gradually collapses under the weight of its own contradictions, we will have to reabsorb pigs into the life of the community. Pigs will be kept in small numbers on mixed farms, in woodlands, at schools and prisons, near hospitals, behind restaurants and pubs, on allotments, at city farms and by neighbourhood pig clubs. Waste food will be recycled by the shortest possible route, according to DEFRA's own "proximity principle".¹⁴ Welcoming pigs back into the community may sound dotty because it seems so at odds with

the sanitized suburbia promulgated by the nanny state. But we know that recycling food through pigs works because we did it during the second world war — and if the prophets of peak oil and global warming are correct, we may be headed for similar conditions.

It is also necessary if we are to get the nutrients back to the land. Peter Brooks' paper on *Rediscovering the Environmentally Friendly Pig* remained unpublished because the pigs which he urged should be fed with recycled waste were to be kept on large scale, industrial farms, where manure accumulates in a heap that causes pollution and disposal problems.¹⁵ If we are to have industrial-scale food processing at all, then its waste nutrients need to be cascaded back to mixed farms and smallholdings across the expanse of our land, and the most viable way to do this is through pig-food. It can be done through selling bags of subsidized compost, but at the current price of £10 for a 25 kilo sack, organic pig-feed justifies the transport a lot more than organic compost.

The return of the backyard pig will not only sort out our food waste problems, more importantly it will enhance the cultural life of the nation. The pig has always been a mainstay of the poor family's independence and of a community's food sovereignty. "Pigs for health" was an English expression; "the pig pays the rent" an Irish one. It is because of the centrality of the pig to the security and the aspirations of settled peasants — be they Papuan tribesmen, the labourers of Larkrise, or the Negroes of Maryland — that its life, its death and its afterlife are invariably imbued with ritual or religious significance. "Stand by your Ham" is a call that resonates more fully amongst a proud and independent peasantry than a bunch of whinging factory farmers, some of whom have probably never cured a ham in their lives. "A couple of flitches of bacon," said William Cobbett, "are worth fifty thousand Methodist sermons and religious tracts."

Reintegration into human society will also vastly improve the cultural life of pigs. "Dogs look up to us, cats look down on us," Churchill is supposed to have said, "but pigs treat us as equals." Pigs have as much to contribute to human society as the canine and feline races, and as much to benefit. Once freed from the factory, they will again be rooting in nearby woodland, sharing the life of the farmyard, snuffling around with chickens in the *basse cour*, or lying pampered in a sty by the kitchen. The congenial existence of the household pig is almost the first thing Flora Thompson describes in *Larkrise to Candleford*:

"The family pig was everybody's pride and everybody's business . . . its health and condition were regularly reported in letters to children away from home, together with news of their brothers and sisters. Men callers on Sunday afternoons came, not to see the family, but the pig, and would lounge with its owner against the pigsty door for an hour scratching the piggy's back . . . The children on their way home from school would fill their arms with sow thistle, dandelion and choice long grasses, or roam along the hedgerows on wet evenings collecting snails for the pig's supper."

In his Just-So story, "The Cat Who Walked Alone", Rudyard Kipling compares the contracts made by the dog, the cow, the horse and the cat as they submit to domestication by primi-



tive humans. Kipling didn't mention the pig — but 8000 years ago when herds of wild swine were attracted to the settlements of early agriculturalists, an interspecies bargain was negotiated. "You give us your waste food and a bit of that extra juicy grass seed you have, and we'll keep your camp clean and let you eat our surplus offspring (of which we have many)." We have broken that contract by forcing our pigs into concentration camps, and feeding them on concentrates, and we are materially and spiritually the worse for it.

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A photo from a six page feature in the April 2008 issue of *Home Farmer* entitled "Pigs in Your Garden", written by Linda McDonald Brown. *Home Farmer* is a new magazine for the "five million people who want to live a simple, more sustainable, make-it-yourself life" whether they live in a countryside cottage, a suburban semi, or an inner-city flat. Tel: 01772 652693, info@thegoodlifepress.co.uk

The Kiss of Defra

Many small farmers find it necessary to lie to DEFRA from time to time, or at least to be economical with the truth. It must have been righteous indignation that made me come clean with the woman from DEFRA when she phoned up, one Friday, enquiring what we fed to our two pigs.

"You mean you're giving them your kitchen waste?" she asked.

"Well, of course. That's what the pigs are for."

"You know that it's illegal, don't you?"

"I do; but it's a daft law."

"It may well be daft, but I'm afraid it is illegal, and we take this very seriously."

She wasn't joking – though since DEFRA must be aware that almost everyone who keeps a couple of backyard pigs throws their scraps to them, all they were really taking seriously was the fact that I was stupid enough to tell them the truth. The DEFRA woman made an appointment to see me the following Wednesday. But on Monday morning I got a phone message to say that the divisional chief in London had decided that this was a matter that couldn't wait. Three officers were being despatched and would arrive shortly. An hour later the DEFRA vets roared up the lane like boy racers, left their cars straddled across the middle of our car park, TV detective-style, and struck off into the woods to find me.

Bearded, gumbooted, and affable, the posse's chief, Giles Vellacott, began by telling me that he had a smallholding himself, and that if he didn't have to earn a crust, he would happily leave his job and live on it full time, just like us. Then he got down to the matter in hand. Was I aware that the 2001 foot and mouth epidemic originated through a farmer feeding unsatisfactorily processed imported meat to his pigs?

Yes, I replied, I was, but we only rarely ate meat, we didn't put waste meat in the pig bucket, and as loyal, post-modern peasant farmers, we wouldn't dream of buying imported meat.

Was it not possible, he continued, that a visitor could thoughtlessly drop the remains of a sandwich, containing cured ham, or some other uncooked delicacy from a foot and mouth infested country, into our pig bucket without us noticing?

It was, I admitted, faintly possible, though I could make sure that it didn't happen. But if the Government was so concerned to keep the UK foot and mouth free, why did it allow meat to be imported from infected countries – particularly when the UK exports £650 million worth of meat every year?

"Unfortunately, an import ban is not EU policy," said Vellacott. "But all imported meat from countries where foot and mouth is endemic is taken off the bone and vigorously vetted."

"So what's the problem then?"

"Smuggling. Recently two aeroplanes full of meat from South America were apprehended. That's a lot of meat, some of it could

be infected with foot and mouth, and it could end up uncooked in your pig bucket."

I faltered. I could see that, from DEFRA's point of view, there was a risk of smuggled, infected, uncooked meat ending up in someone's pig bucket, somewhere.

"Alright, in future I'll inspect the bucket to check there's no meat in it," I offered.

"Not acceptable," said Mr Vellacott. "I'm imposing a 21 day ban on the movement of all animals off your holding. If you don't stop feeding kitchen waste to your pigs, the ban will be reimposed and you'll be prosecuted."

Since we were desperate to get rid of our hired bull, who was more interested in mounting the fencing than the cows and we were now getting regular inspections from junior DEFRA vets, I stopped giving the pigs any kitchen waste for the next three weeks.

It was not easy. Asking a backyard pig keeper not to give his pigs scraps, is like asking a dog owner not to take his pet for a walk. Every time I passed them, they peered at me expectantly with their beady eyes, and rumbled and squealed in a tone that has evolved, through centuries of pig-rearing, to be as irresistible as a baby's cry for milk. With 14 people living on the farm, plus visitors, the food scraps represented about 25 per cent of the pigs grub, or 70 pounds of pork and bacon a year – twice as much if you included the whey from the cheese, which was also illegal because it was made in the kitchen, but thankfully Mr Vellacott seemed happy to overlook this.

There was also the question of what to do with the waste. I could either throw it on the compost heap, where it attracts rats (which cause Weil's disease) or dump it in the woods for the badgers (which carry bovine TB). It was just as well we weren't in the South of France, or indeed parts of Hampshire, where wild boar would have eaten the scraps, spreading the putative infection far and wide. The other option might have been a wormery – but we had already tried that and the worms all drowned in a foetid soup at the bottom of the plastic tub. Anyway, I'd rather have bacon than worms.

But what really stuck in my throat as I wandered into the woods to throw the contents of the pig bucket to the badgers was the unspeakable effrontery of DEFRA in forcing me to do this. This was the ministry that only a few years previously had been happily feeding dead cows to live cows; now it was threatening to prosecute me for feeding vegetables to omnivorous pigs.

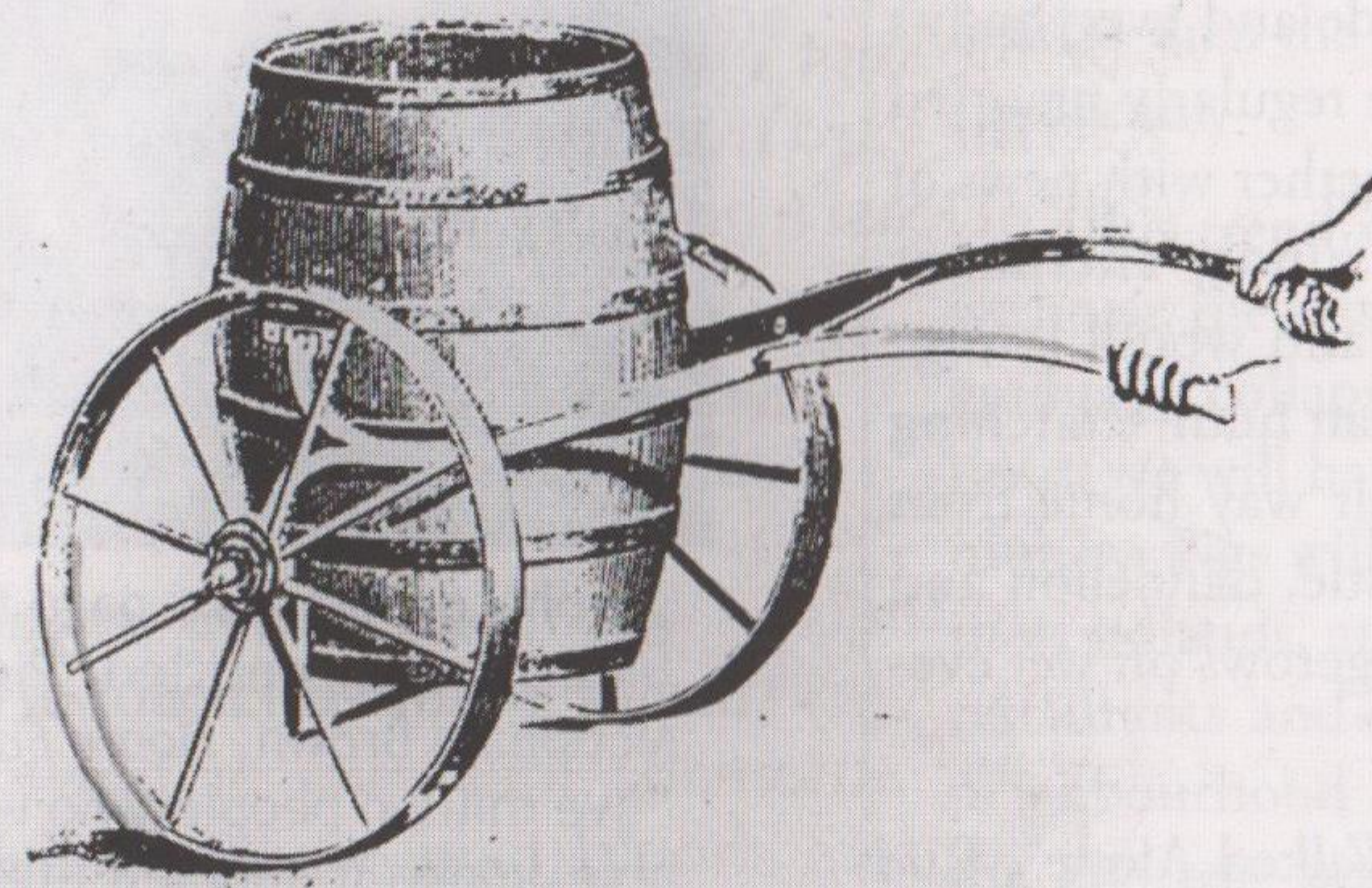
At the end of a very long three weeks, after all the tests had been carried out showing that our pigs were healthy, Mr Vellacott paid a return visit. In view of my initial honesty he seemed happy to accept my assurance that not a smidgeon of kitchen waste had gone to the pigs.

"Can I take it, then, that you will not be feeding kitchen waste to your pigs in future?" he asked.

"You can, if you so wish," I replied.

"That's fine," he said, "then I won't need to pay another visit."

ANON



19th century swill-barrow

MUSCLE POWER

All flesh is grass . . . Wood provides us with heat, but grass gives us muscle power, the most neglected, by policy-makers, of all the forms of renewable energy at our disposal. In the following pages we explore some of the ways in which this most intimate of energy resources can be used.



La Faneuse, Julien Dupré

THE REHABILITATION OF MANUAL LABOUR

*Said a philosophical ermine
There's one thing I cannot determine:
When a dame wears my coat
She's a person of note,
But when I do I'm treated as vermin.*

The "ermine effect" is the compulsion which leads the wealthy to take up for their amusement pursuits which the lowly undertake out of necessity. Or (as Northcote Parkinson might have postulated, but didn't): "The status accorded to an object or activity is in inverse proportion to its usefulness."

The original and most enduring manifestation of the ermine effect is hunting, which became the exclusive domain of the wealthy as soon as agriculture had made them rich. But over the last 150 years the ermine effect has come into its own. No sooner was sail replaced by steam, than the middle classes, who never before dreamed of climbing rigging, tying bowlines or eating salt pork, suddenly became inspired to buy yachts. Once skiing ceased to be an economically viable mode of transport, people flocked to the mountains for winter sports. Only when clothes became cheap enough to throw away did patches and rips in jeans become fashionable. Farmworker's hovels, as soon as the labourers were kicked out, were reincarnated as desirable rural retreats for urban refugees.

Yet there remains one sphere of human activity which, by virtue of its abject lowliness, has so far shown some resistance to gentrification. The virtual extinction of manual labour and its replacement by tractors, mechanical diggers, forklift trucks, chainsaws and other contrivances has not yet resulted in the elevation of digging, scything, sawing wood or shovelling wet concrete to the same status as skiing, sailing or hunting.

This is partly because of the depth of the contempt in which it has been held. Throughout history the manual worker has enjoyed a social status only a little above vermin. Veblen, who coined the term conspicuous consumption, talked of its "shamefulness" and concluded: "This pervading sense of the indignity of the slightest manual labour is familiar to all civilized peoples." The labouring classes are, *ipso facto*, the lower classes.

With rather more justification, manual work is also associated with drudgery. What makes manual labour so unenjoyable that it becomes drudgery? In some cases poor tools, want of skill, or a lack of motivation in individuals who wish to be doing something else. It may come from trying to squeeze out a living from a resource base that is too small or exhausted. But mostly drudgery means working long hours for insufficient reward with no prospect of improvement, and it is usually the result of exploitation. Peasants with sufficient land and means of production to make a living, rarely complain of drudgery however hard they may work. The memory of exploitation, in factories and on some farm estates, is still raw in the collective consciousness of the working-class, and only as this memory fades are we likely to see the rehabilitation of manual labour.

For the time being, it has been supplanted by other activities, in the first instance sport. However, the fact that most people participate in sport as spectators rather than as athletes suggests that its primary role is not to keep the populace physically active, but to divert aggression, competitiveness and tribal allegiances into pointless, and hence harmless pursuits.

Nowadays the more fashionable displacement activity for

manual work is PPE: pointless physical exercise, sometimes of the most punishing kind. People who wouldn't dream of using a pick and shovel to dig a small ditch when a mini-digger can do the job in twice the time, willingly subject themselves to hours of physical stress pounding along the road in their trainers, pedalling a stationery bicycle, or pumping iron.

The only thing that distinguishes this kind of physical exertion from manual labour is that it has no discernible purpose, other than the expenditure of energy — so no one gets paid for doing it. Marathon runners do not earn their living as couriers (which literally means "runner"), though at 10 miles an hour and with no vehicle to park they could provide the speediest delivery service in central London. Nor do weightlifters seek to exercise their talents as dustmen even though the archaic method of using muscles to flip the content of a bin into the back of the cart is far quicker than the robotic wheelybin emptier. (There are few more pathetic spectacles than that of a trio of burly males in donkey jackets standing around watching the hydraulic tail lift of a dust cart disgorge a payload weighing all of ten kilos.)

Human physical activity is demeaned by becoming an end in itself, rather than a means to the production of something beyond. Poor performance becomes acceptable, while high performance is gratuitous. It doesn't matter that the portly figure waddling along the pavement in shorts and trainers is a burlesque parody of an athlete, since he is not delivering news of battle, or even late for the bus — all he wants to do is burn off calories. Nor do we expect the young executives toning their limbs in the plate glass windows of high street gyms to be anything other than self-infatuated poseurs, for when the sole purpose of physical activity is to improve the body, narcissism is the only motivation for achievement. These people may be fit, but they are fit for nothing.

Moreover, the displacement of human energy into such vacuous pursuits is hardly consistent with a society that is trying to reduce its carbon emissions. If we took physical activity out of the gymnasium and put it back in the workplace where it once belonged, we could not only dispense with a fair amount of machinery whose effect has been to deprive people of the exercise they need, but also get rid of the electric treadmills and other contraptions designed to supply people with the physical activity they have been deprived of. The carbon savings may be small compared with insulating houses or giving up flying, but the symbolic and spiritual significance of using human energy creatively rather than fatuously, is considerable.

Gandhi once wrote:

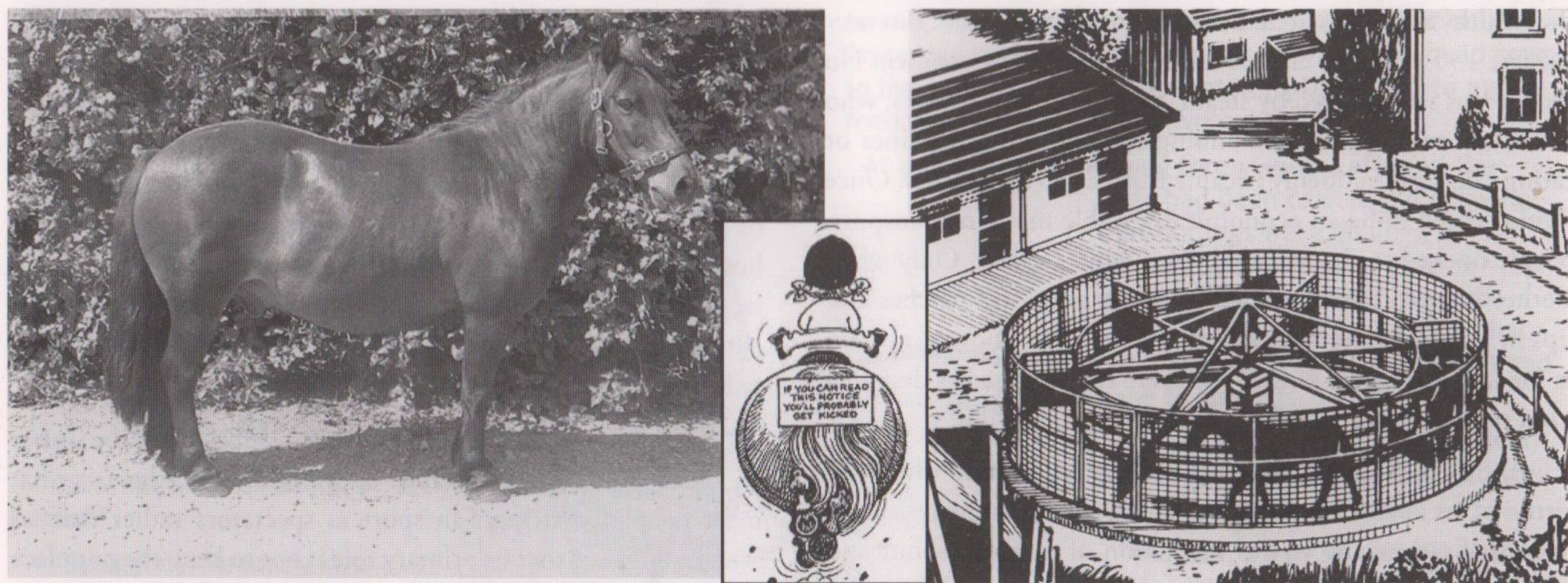
"It is a tragedy of the first magnitude that millions have ceased to use their hands . . . It is highly likely that a time will come when we shall be so incapacitated and weak that we shall begin to curse ourselves for having forgotten the use of the living machines given to us by God."

The growing media obsession with obesity suggests that humanity is already beginning to curse itself. The flabby office worker, grimacing and sweating in his effort to shed superfluous pounds, is not only cursing, but punishing himself. The days of gym culture are numbered. As its vacuousness becomes more transparent, as the memory of industrial drudgery fades, and as the price of oil rises, there will be a revival of manual work. The mattock, the axe, the scythe, the pick and shovel and the hundredweight sack will return, not to the exclusion of machines, but as part of our inventory of convivial tools. People seeking to make the most of their bodies during the short time they have them will discover that there is more skill to be acquired, more beauty to be glimpsed and more fulfilment to be found by engaging in an ergonomic relationship with the world around us.

Simon Fairlie

"A people can be just as dangerously overpowered by the wattage of its tools as by the calorific content of its foods, but it is much harder to confess to a national overindulgence in wattage than to a sickening diet."

Ivan Illich



Horse are suffering from the same malaise as humans. There are an estimated one million horses in the UK occupying about two million acres — enough horsepower to cultivate most of our arable land. Most of them have so little to do they are towed to shows and gymkhanas by Range Rovers. From left to right: picture from an article on fat horses in NFU Countryside magazine Sept 2006; Norman Thelwell cartoon; Claydon treadmill for unworked horses.

Energy, Equity and the Bicycle

Selected quotations from *Energy and Equity*, by IVAN ILLICH.

Energy

It has recently become fashionable to insist on an impending energy crisis. The proponents of an energy crisis confirm and propagate a peculiar vision of man. According to this notion, man is born into prolonged dependence upon slaves which he must painfully learn to master. If he does not employ prisoners, then he needs motors to do most of his work. The energy crisis focuses concern on the scarcity of fodder for those slaves. I prefer to ask whether free men need them.

Hysterical concern with machine fodder can reinforce the present escalation of capital-intensive growth and carry us past the last turn-off from a hyper-industrial Armageddon. Even if non-polluting power were feasible and abundant, the use of energy on a massive scale acts on society like a drug that is physically harmless but physically enslaving. No society can have a population that is at once autonomously active and hooked on progressively larger numbers of energy slaves.

A people can be just as dangerously overpowered by the wattage of its tools as by the calorific content of its foods, but it is much harder to confess to a national overindulgence in wattage than to a sickening diet. Calories are both biologically and socially healthy only as long as they stay within the narrow range that separates enough from too much.

The typical American male spends four of his sixteen waking hours on the road, or gathering his resources for his car. He puts in 1,600 hours to get 7,500 miles: less than five miles per hour. In countries deprived of a transportation industry, people manage to do the same, walking wherever they want to go, and they allocate only three to eight per cent of their society's time budget to traffic, instead of 28 per cent.

The development expert who looks down compassionately from his Land Rover on the Indian peasant driving his pigs to market refuses to acknowledge the relative advantage of feet. The expert tends to forget that this man has dispensed ten others in his village from spending time on the road, whereas the engineer and every member of his family separately devote a major part of every day to being in traffic. What distinguishes the traffic in rich countries from the traffic in poor countries is not more mileage per hour of life-time for the majority, but more hours of compulsory consumption of high doses of energy, packaged and unequally distributed by the transportation industry.

Equity

Beyond a certain speed motorized vehicles create remoteness which they alone can shrink. They create distances for all and shrink them for only a few. Beyond a critical speed no one can save time without forcing another to lose it. Accelerating speed inevitably concentrates horsepower under the seats of a few and compounds the increasing time-lack of most commuters with the further sense that they are lagging behind. Beyond a certain point, more energy means less equity.

It appears that everywhere in the world, after some vehicle broke the barrier of 15 mph, time scarcity related to traffic began to grow. After industry had reached this threshold of per capita output, transport made of man a new kind of waif: a being constantly absent from a destination he cannot reach on his own, but must reach within a day.

Imagine what would happen if the transportation industry could somehow distribute its output more adequately: a traffic Utopia of free rapid transportation for all would inevitably lead to a further expansion of traffic's domain over human life. In this fool's paradise, all passengers would be equal, but they would be just as equally captive consumers of transport.



While upwardly mobile countries such as India and China try to ban rickshaws, people in overdeveloped countries are starting to appreciate their advantages.

The per capita wattage that is critical for social well being lies within an order of magnitude which is far above the horsepower known to four fifths of humanity [in 1974] and far below the power commanded by a Volkswagen driver. It eludes the underconsumer and the overconsumer alike. For the primitive, the elimination of slavery and drudgery depends on the introduction of appropriate modern technology, and for the rich, the avoidance of an even more horrible degradation depends upon the effective recognition of a threshold in energy consumption beyond which technical processes begin to dictate social relations.

The Bicycle

A century ago, the ball bearing was invented. It reduced the coefficient of friction by a factor of 1000. The ball bearing also made possible the bicycle, allowing the wheel — probably the last of the great neolithic inventions — finally to become used for self-powered-mobility. Man on a bicycle can go three or four times faster than the pedestrian, but uses five times less energy in the process. The bicycle lifted man's automobility into a new order, beyond which progress is theoretically not possible.

Bicycles are not only thermodynamically efficient, they are also cheap. The cost of public utilities needed to facilitate bicycle traffic versus the price of an infrastructure tailored to high speeds is proportionately even less than the price differential of vehicles used in the two systems. The bicycle has extended man's radius without shunting him onto roads he cannot walk.

The bicycle also uses little space. Eighteen bikes can be parked in the place of one car, thirty of them can move along in the space devoured by a single automobile. Of all vehicles, only the bicycle really allows people to go from door to door without walking. The cyclist can reach new destinations of his choice without his tool creating new locations from which he is barred.

Every increase in motorized speed creates new demands on space and time. The bicycle creates only those demands which it can also satisfy. The use of the bicycle is self-limiting.

A grizzly contest between bicycles and motors has just come to an end. In Vietnam, a hyperindustrialized army tried to conquer, but could not overcome, a people organized around bicycle speed. The lesson should be clear. High energy armies can annihilate people but they are of very little use to a people which defends itself.

These selections have been slightly edited for clarity. *Energy and Equity* was published in 1974 by Marion-Boyers.

KICKING THE PINK DIESEL HABIT

REBECCA LAUGHTON looks at the steps some smallholders and farmers are taking to reduce their use of fossil fuels.

Climate change and rising oil prices are forcing us to think carefully about how we produce and distribute food. The creation of thriving local food economies is reducing long distance food transport, and members of the organic movement claim that their methods result in lower greenhouse gas emissions. But how many farmers and smallholders are trying to reduce their dependence on fossil fuel powered machinery? And what are the implications for their physical and mental health of endeavouring to run financially competitive businesses with reduced mechanization?

I have been investigating how smallholders sustain their own "human" energy, whilst earning ecologically sound, land-based livelihoods, and living in a low impact way. Variables such as social structure, mental attitude, age and role in life, and choice of technology, all contribute to a lifestyle in which health, harmony and happiness are either sustained or compromised. Whilst studying thirty different land-based projects I found a variety of combinations of technology, including hand tools, horse drawn tools and different levels of mechanization. I set out to discover why and how people make compromises to balance their environmental principles, economic viability and their need to sustain their physical and mental energy.

Nearly all the projects I visited used hand tools to some extent. Some only used them for jobs that it would be hard to do with machinery, such as fine weeding or pruning fruit trees. Others employed well-maintained and well-designed hand tools for tasks that many would consider it was inefficient to do without a machine. For example, two farms used scythes to mow grass for hay, and several regularly used various kinds of well-sharpened hand hoe, while weeds were small, to keep substantial areas of cultivated land clear. Efficient use of hand tools relies on a combination of mindful use of the body and adjusting the appropriate tool for the job to the worker. (Is the tool sharp enough? Is the spade/mattock the right weight? Is the hoe/scythe set at the right angle?) In other cases, plastic mulch was used to reduce the work of weeding and watering. Although plastic "tools" such as mulch, polytunnel plastic and netting are made from oil, and many people find them visually offensive, if they are reused over many years and can save labour or food transport, they are arguably a better use of oil than burning it. There is an urgent need for research into the comparative environmental impacts and resource efficiency of using oil for plastic equipment versus burning it as a fuel — and of course leaving it buried beneath the earth's crust

Most of the commercial market gardens I visited employed some kind of internal combustion engine alongside hand tools. Machines ranged from lawn mowers, strimmers and small,



Clare Leighton

two wheeled rotavators to tractors (40-100hp), which could be used for topping fields, spreading muck and thumping in fence posts as well as cultivation. The main tasks for which machinery was chosen included field scale cultivation of vegetables and cereals, spreading manure, topping pasture and field margins, making hay or silage and moving heavy materials. The decision to use machinery generally reflects the scale of operation and the availability of labour. Where a single person or couple were cultivating more than two acres of vegetables or kept livestock that required large volumes of fodder and produce quantities of manure, a tractor was often considered necessary. In other instances, shortage of time or money is the main factor which pushes people to choose machines over hand tools, for tasks such as mowing around vegetable beds or weed control.

Three of the commercial market gardens also used horse drawn horticultural equipment, but employed a tractor for certain jobs such as spreading muck or the initial ploughing of pasture. Two of them also used a horse and cart to deliver vegetables. Besides producing minimal carbon emissions, the advantages of horses over tractors are that they are lighter, narrower and more versatile. They therefore cause less soil compaction and can weed between close rows of mature crops. Draught animals require feeding and looking after whether they are being used or not, although they require much less feed when at rest than when in regular work. All those using horses considered their "running" costs to be low, since work was intermittent, and their horses were hardy enough to be kept at grass and require little concentrate feed. However, a draft horse working full time at heavy work such as ploughing, as in the days before tractors were widely used, requires significantly more feed and hence land. Despite all three farms using tractors to make hay, each believed that substituting horse power for tractor power in vegetable work resulted in their using less fuel, and producing fewer greenhouse gas emissions. Compared with hand labour, horse drawn tools enabled them to work at an economically viable scale (2-4 acres of vegetables), when



combined with direct marketing via a box scheme or market stall. For me, one of the most appealing aspects of horse drawn tools is that they are mechanically simpler than engines, so easier to understand and fix if they go wrong.

Only three places in my study (Tinkers Bubble in Somerset, Valley de Merens, and La Borie Noble in South West France) avoid fossil fuel altogether in managing their land. Two out of the three are communities while the third hosts visiting volunteers, which suggests that having a pool of motivated, co-operating workers with a range of skills is a pre-requisite to completely cutting out internal combustion engines. Another factor common to low carbon holdings is an emphasis on subsistence, rather than commercial production. That is not to say that they do not sell any of their produce, but their main effort goes into meeting their own needs for food, fuel, electricity and shelter directly from the land. Hence, they are less closely tied to the cash economy and feel less pressure to be commercially competitive. Instead of fossil fuel powered machinery, these places use a combination of hand tools, horse drawn tools and, in the case of Tinkers Bubble, a wood fuelled steam engine to power a saw bench. In all three places hay-making was carried out using either scythes and pitchforks, or a horse drawn finger mower, tedder (for turning hay) and side delivery rake (for putting hay in rows). At the two communities, teams of between five and twenty people were typically involved

in hay-making. Despite the physically hard work, enthusiasm and enjoyment are maintained by turning this annual event into one of celebration, involving picnics under shady trees and wine at the end of the day.

A fourth community, Steward Wood, had recently moved from being fossil fuel free to allowing the use of a chainsaw powered by the natural gas derivative Aspenfuel, for cutting firewood. Prior to this they had tried both a chainsaw powered by hydro-electricity and one fuelled with a mixture of bioethanol and petrol. Insufficient winter stream flow and battery storage capacity rendered the electric chainsaw impractical, while the bio-fuel tended to clog up the chainsaw and reduce its durability. Despite being a fossil fuel and twice as expensive as petrol, Aspenfuel produces fewer fumes and enables flexibility, since the chainsaw can be used in the rain and requires no electric cable. The decision to allow the use of chainsaws illustrates the balance between principles and pragmatism. Steward Wood have calculated their carbon foot print to be only 23% of the national average. By attracting residents who might otherwise be living more conventional lifestyles, by making it easier to cut firewood, their compromise is arguably bringing a net environmental benefit.

Firewood management is a theme that arose repeatedly during the study, reflecting the importance of domestic use of energy as an integral part of a land-based livelihood. At the end of a winter day's work on the land it is vital to have a warm comfortable home to return to. However, too much time spent on domestic tasks, such as cutting firewood and maintaining a renewable energy system, can eat into the time available for other work. Wood was frequently the sole source of energy for space and water heating, as well as cooking in a few places. Brithdir Mawr, a community who use wood for heating and cooking, also use a chainsaw, but power it with their off-grid renewable electricity system. The combination of a large wind turbine, a small hydro generator and solar panels provide them with sufficient electricity to run a 240V circuit and use conventional appliances. Hence, the availability of a washing machine frees up time, from doing hand washing or travelling to the laundrette, for land management activities. At La Borie Noble and Valley de Merens, where no such labour saving devices were available, efficient hand-washing systems had been developed, leaving time for other land-based work. It was notable that at both places, however, there was a traditional gender division of labour and women seemed to work outside on the land only after they had completed their domestic tasks.

The time is approaching when the skills of people who are able to manage land without fossil fuels will be highly sought after. Alongside the evolution of efficient new technologies that utilize renewable energy and re-learning the skills of the past, we must look holistically at the design of our farming and land management systems. For low carbon farming to succeed and endure into the future, it is vital that the people who are central to smallholdings, farms and forestry projects are motivated, able to thrive and enjoy their way of life.

The issues in this article are expanded in Rebecca Laughton's book *Surviving and Thriving on the Land*, which is due to be published by Green Books in the autumn.

Neglected Muscle-Powered Tools (Human)

Mattock

The mattock can be used both for digging, for hoeing and clearing and is far more commonly used around the world than garden spades or forks, because it is about twice as fast. The only disadvantage is that it is more convenient to stand on the ground you have already dug. This may explain why the mattock is less favoured in a wet country like the UK.

Spanish mattocks are available from <http://www.get-digging.co.uk/>

Scythe

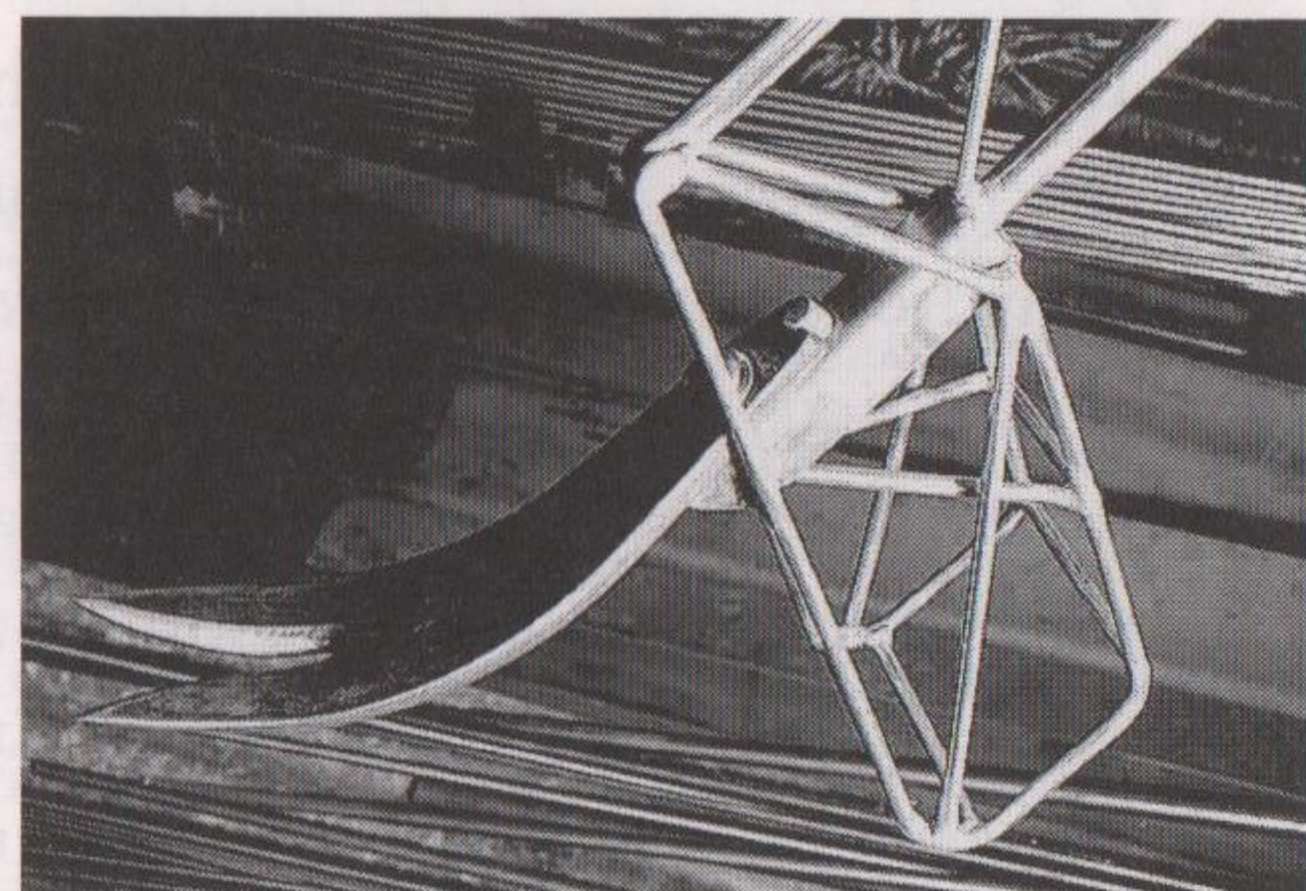


A hand scythe can probably maintain up to an acre of grass with less hassle than a two wheeled mechanical scythe. For clearing vegetation, a scythe is faster than a cheap strimmer, and not a great deal slower than an expensive brushcutter (though quicker when the vegetation has to be cleared away).

On a lawn a scythe is almost as quick as a small power lawnmower. It is a good deal more pleasant to use than any of these.

www.thescytheshop.co.uk; www.scytheconnection.com/; www.youtube.com/watch?v=dVv597m848s

Dock-Puller and Lazydog



Dock pullers are two-teethed pry bars that can lift entire dock plants out of the ground. They can be found secondhand, but the concept has been modernized and improved by Lazydog tools, which supplies a number of different detachable heads for different perennial weeds. Lazydog can supply a team of workers to strip a field or even a farm of perennial weeds.

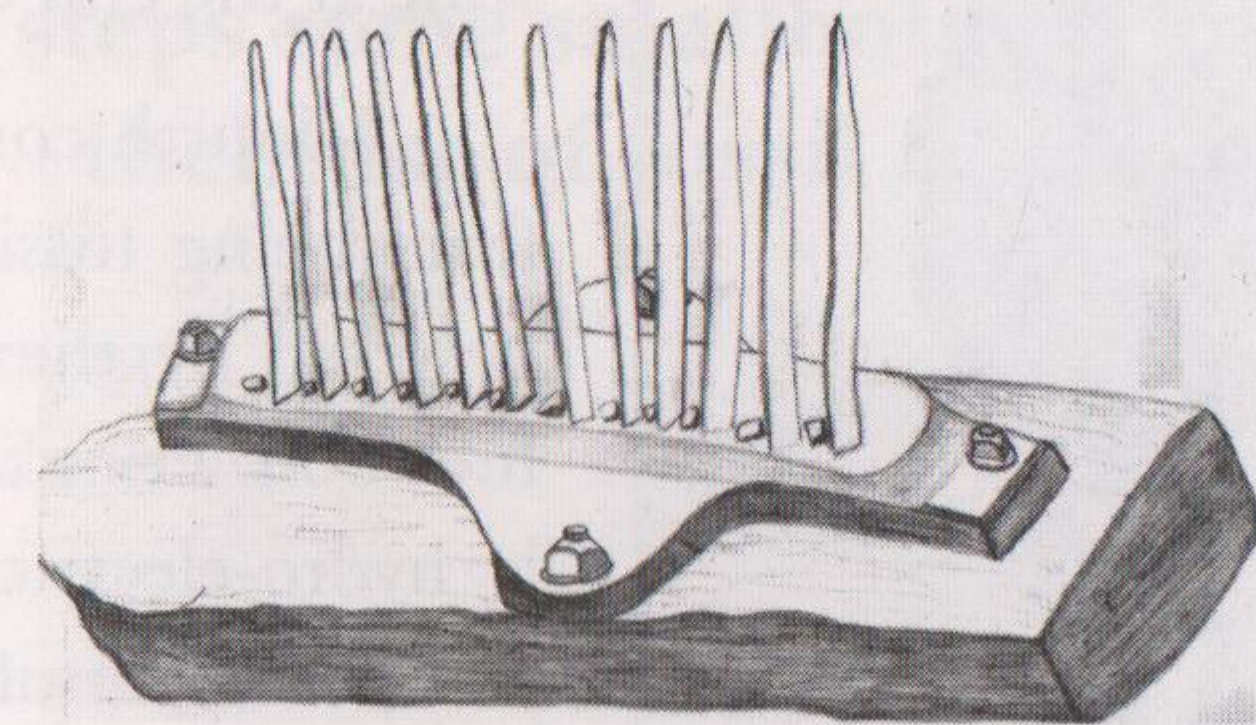
www.lazydogtools.co.uk/lazydogtools/

Posthole Borer

Not so good on stony ground, but otherwise an effective way of sinking a hole up to four foot deep for a post. They can be found secondhand in diameters ranging from 3 to 8 inches. The English toolmakers Faithfull supply a new six inch one.

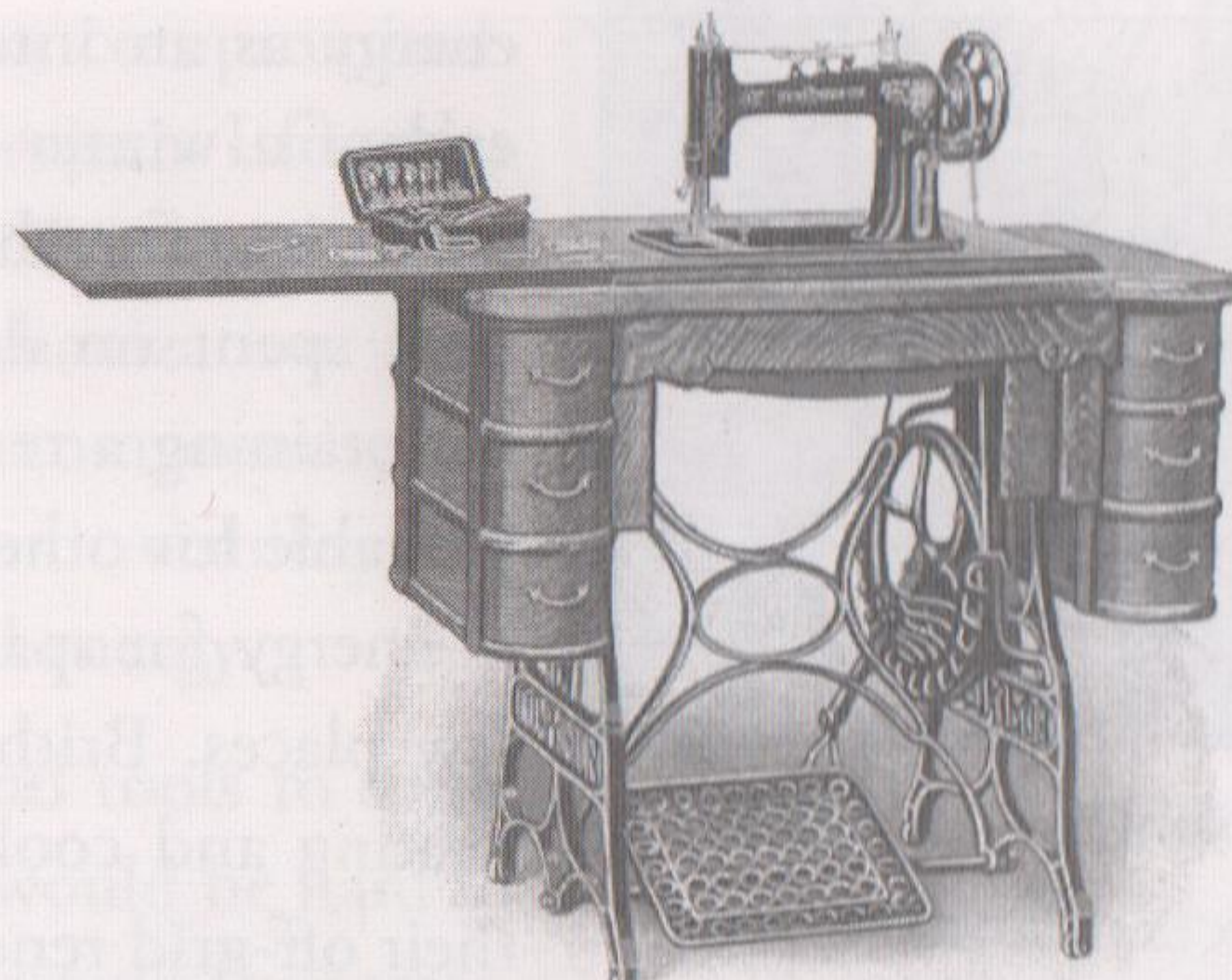
<http://www.tooled-up.com/Product.asp?PID=109856&Referrer=Kelkoo>

Threshing Tools



The traditional hand-tool for threshing corn is a flail, little more than two sticks held together by an articulated coupling. It looks incredibly inefficient, but by all accounts it isn't. Skilled threshers were dead accurate and worked in a closely synchronized team in big barns, with wide open doors. If you are inexperienced, and/or threshing on your own, a reed comb may be easier. It looks like a huge nit-comb, with square sectioned metal tines through which you pull the ears of a small sheaf of corn. If the grain is ripe, 80 per cent of the grains will scatter with the first sweep, and no more than three or four passes will get nearly all the stragglers. Hard to get hold of.

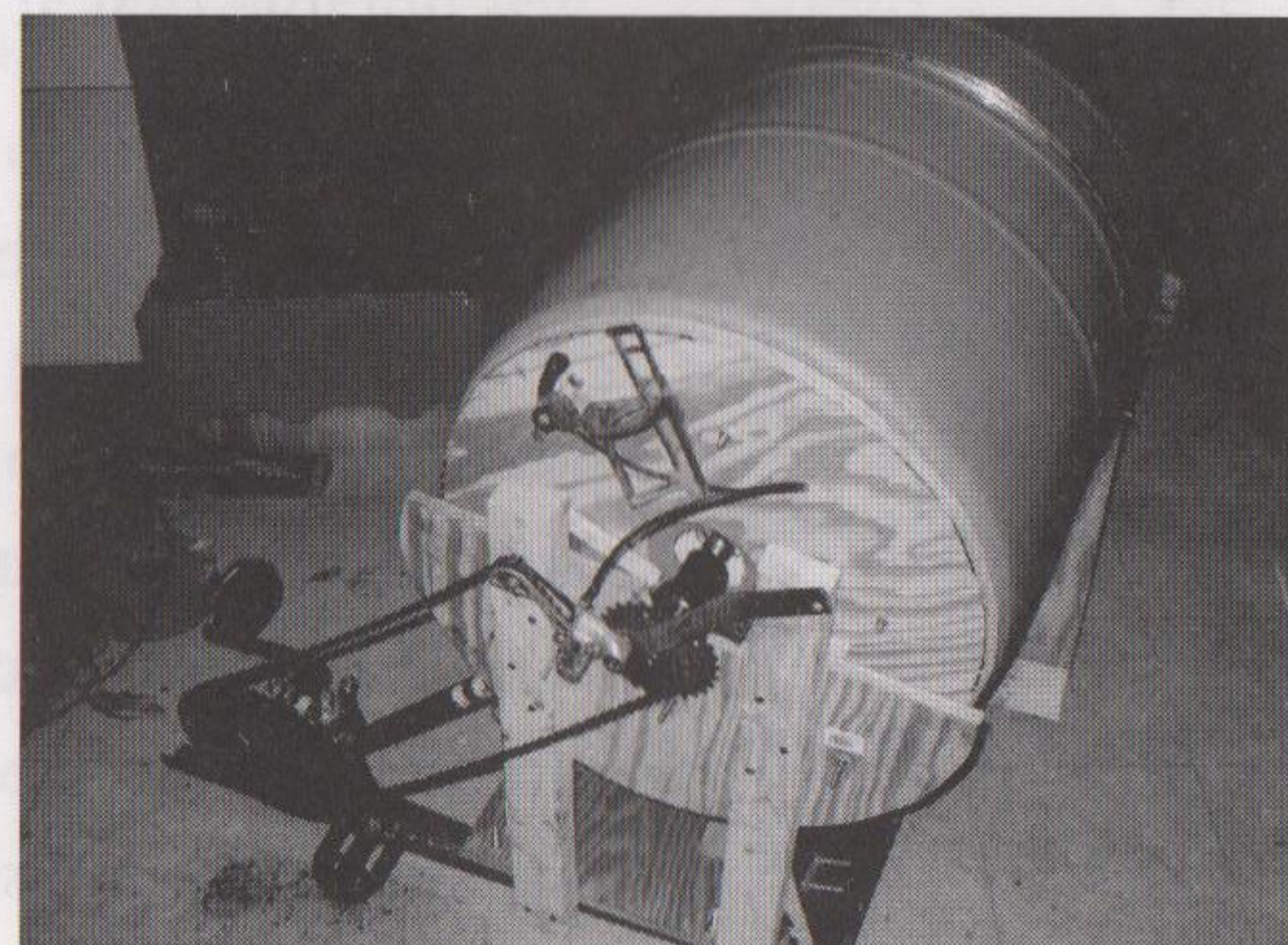
Treadles



Treadles can be used to power pole-lathes, sewing machines, spinning wheels, grinding wheels, band-saws, cobblers equipment, organs etc.

James, C MacCullough and David Gordon Wilson, Pedal Power in Work, Leisure and Transportation, Rodale Press 1977. www.nleindex.com/index.php?PID=HTDI&SID=BrowseIndex&tID=E/3544

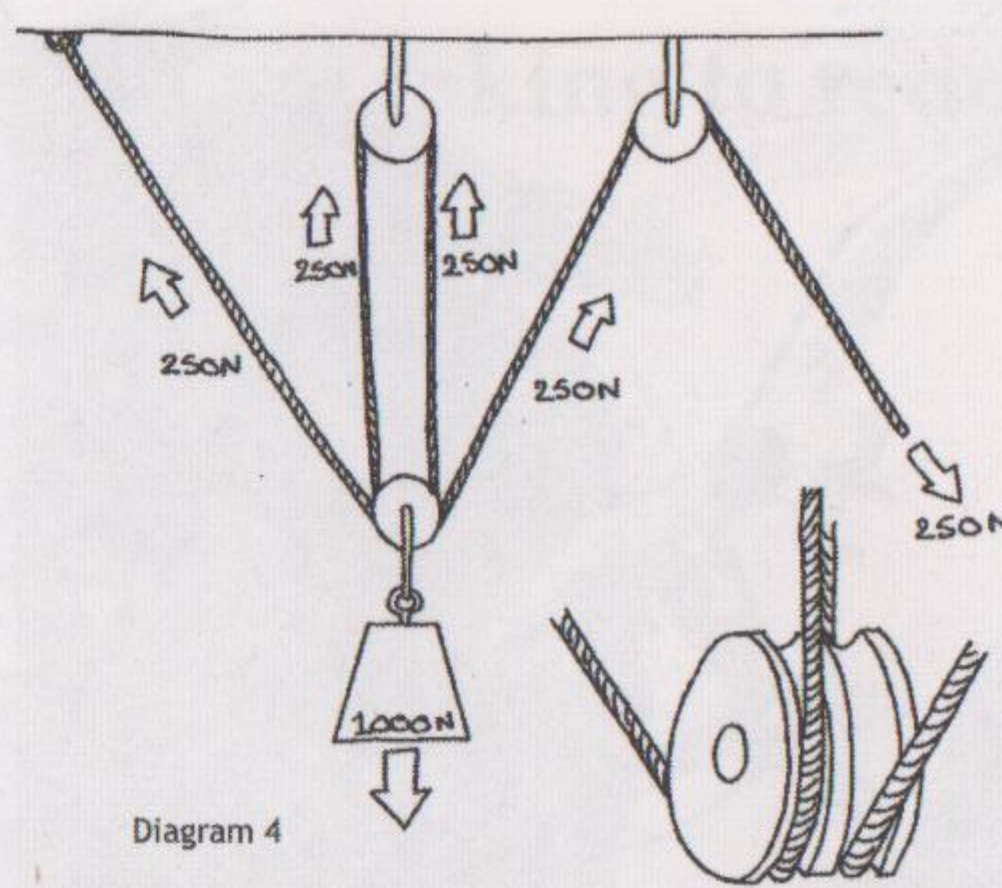
Pedals



Pedal power has been adapted for knife sharpening, pumps, winches, washing machines, a thresher/winner, and a host of other applications.

www.humboldt.edu/~ccat/pedalpower/ rdon Wilson, Pedal Power in Work, Leisure and Transportation, Rodale Press 1977

Human Gearing



There are a number of contrivances for transferring reciprocal muscle action into a lower gear. These include: the lever, as in a crow bar; pulley blocks, chain blocks for short hauls and Tifor cable winches for long hauls, in which a hand arm operates two mechanical hands which pull the cable like a sailor pulling a rope.

http://www.liftturnmove.co.uk/hurricane_hcb.html

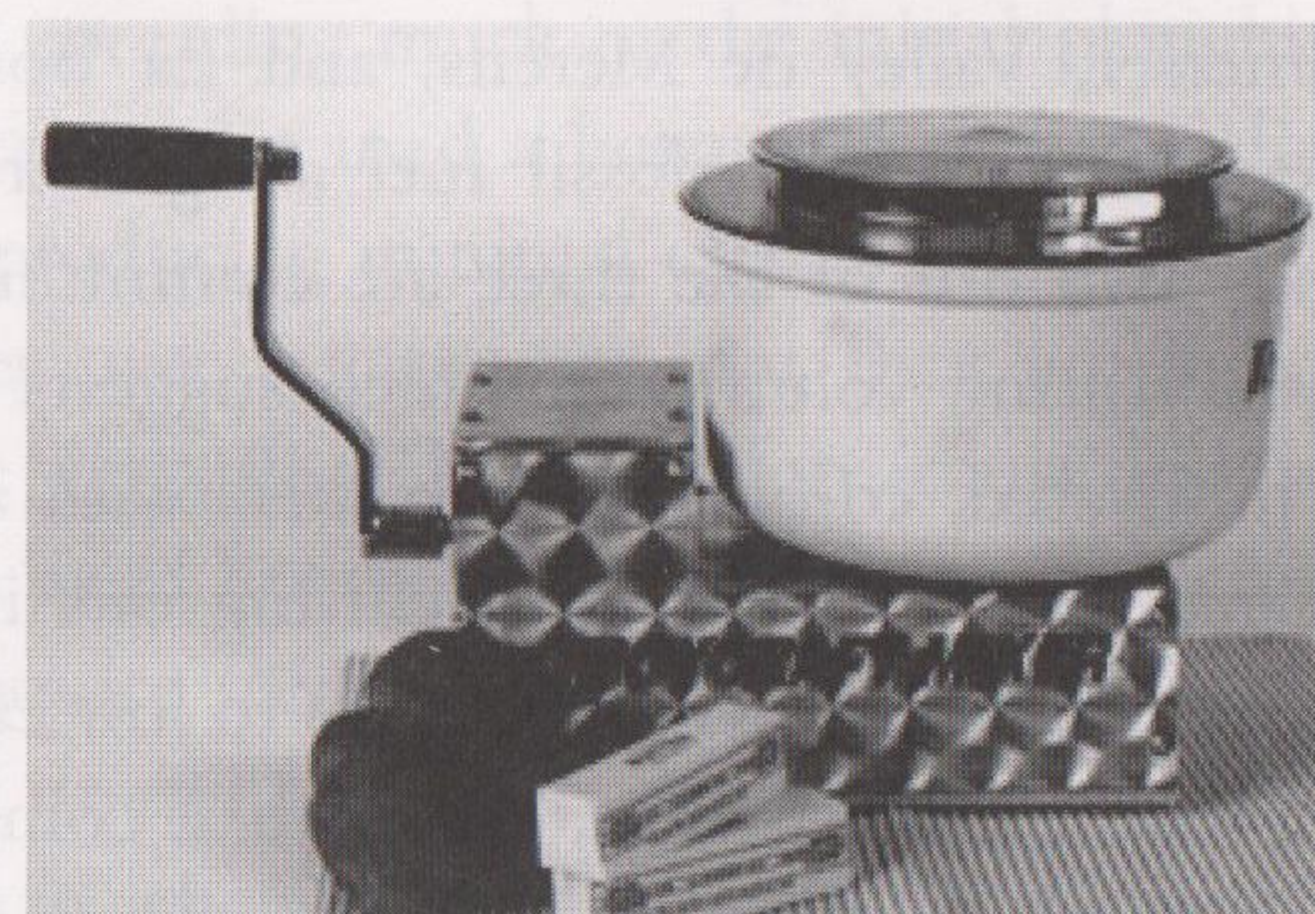
Post Drill

The post drill works with pressure rather than speed. It can drill through metal considerably faster than a hand held electric drill, and will penetrate very hard materials, such as gritstone, which burn the tungsten out of masonry bits used at electric speeds. It can only be used when you have access to both sides of the material to be drilled. No longer made but still available secondhand.

www.beautifuliron.com/yeold.htm



Blender



Food blenders are one of a family of kitchen tools that are so easily powered by hand one wonders why they ever bothered to electrify them. This hand-powered model for commercial use is sold by Lehman's who started in 1955 supplying equipment to Amish families without electricity, but have become more orientated to electrically powered products in recent years.

www.lehmans.com/shopping/product/detailmain.jsp?itemID=7152&itemType=PRODUCT&iMainCat=1107&iSubCat=1110&iProductID=7152

THE NATURE OF MANUAL SKILL

The terms "unskilled labour" and "manual labourer" are often used interchangeably, but it is doubtful whether there was any such thing as an unskilled labourer in the days when all labour was manual. It was when workers became component parts of industrial production lines that work became deskilled. Even Adam Smith, the world's most eloquent advocate of division of labour, acknowledged the superior skill of the peasant manual worker



"Not only the art of the farmer, but many inferior branches of country labour require much more skill and experience than the greater part of mechanic trades . . . whose attention from morning till night is commonly occupied in performing one or two very simple operations."

It seems that as the changes that Smith advocated became widespread, city dwellers began to assume that if modern factory workers were unskilled, then how much more so must be those uncouth peasants. By 1833 Harriet Martineau, feminist writer and smallholder, was warning: "All works of tillage have been mixed up together under the name of unskilled labour." Forty years later the historian J A Froude referred to "the lowest and most unskilled labour of all, that of the peasant in the field."

One wonders whether Froude (Westminster and Oxon) let loose with a spade, could have dug an acre in 13 days, at a rate of about 30 square yards an hour, which Cobbett tells us was the rate for an "able labouring man". Or how he would have fared digging peat beside Seamus Heaney's forbears:

"By God, the old man could handle a spade,
Just like his old man.
My father cut more turf in a day
Than any other man on Toner's bog.
Once I carried him milk in a bottle
Corked sloppily with paper. He straightened up
To drink it, then fell to right away
Nicking and slicing neatly, heaving sods
Over his shoulder, going down and down
For the good turf."

In fact, if you care to investigate what manual workers were capable of before the arrival of machinery and machine tools, you often find that their performance was prodigious. The standard rate for mowing grass according to Gervase Markham was an acre a day of "deep loggy meadow" or two acres a day of "upland meadow". Two acres in a 12 hour day is over 13 square yards a minute, and there are few people Britain who can mow at that rate for two minutes, let alone for 720. Or consider this account of logging in Maine:

"In the bucksaw and axe days, logging horses were assigned to a pair of pulpwood cutters who worked one in the woods felling, limbing and topping, and one in the yard, bucking and piling. A good crew could cut six cords in a day."

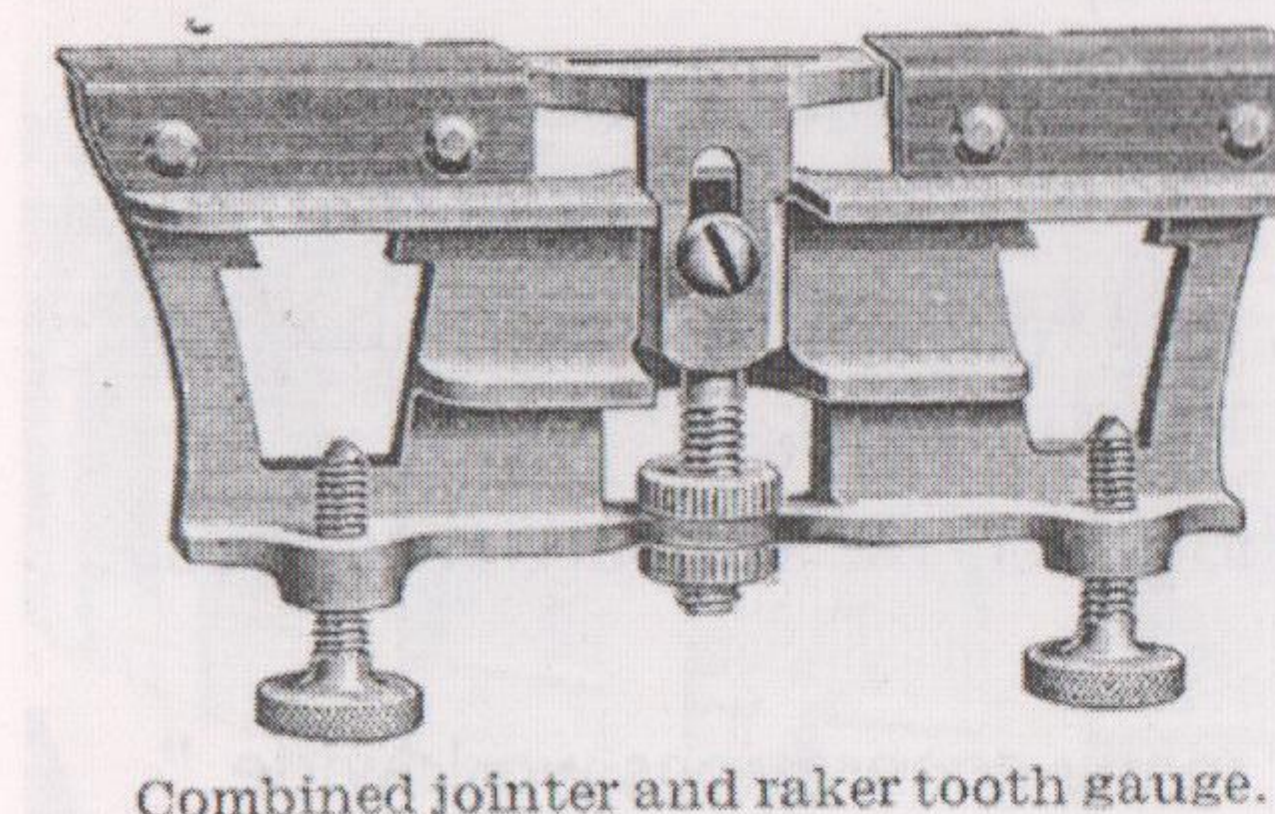
A bucksaw is a wooden bow saw. Six cords a day is a pile of logs four feet wide by four feet high by 48 feet long. More than enough to keep a family warm all winter, harvested in a day. Many people today would have a job stacking that much in a day, let alone sawing it all up, even with a chainsaw.

The regularity with which one encounters suggests that they may not be exaggerated. Demonstration teams such as Adam's Axemen can saw through a 15 inch wide softwood log in about 15 seconds, faster than a chainsaw. If it is possible to do it once or twice, then with fitness, finesse and a good file one can presumably learn how to keep it up all day. Some might consider such behaviour obsessive — or the society which imposes it oppressive — but in no way can it be viewed as anything but surpassingly skilful.

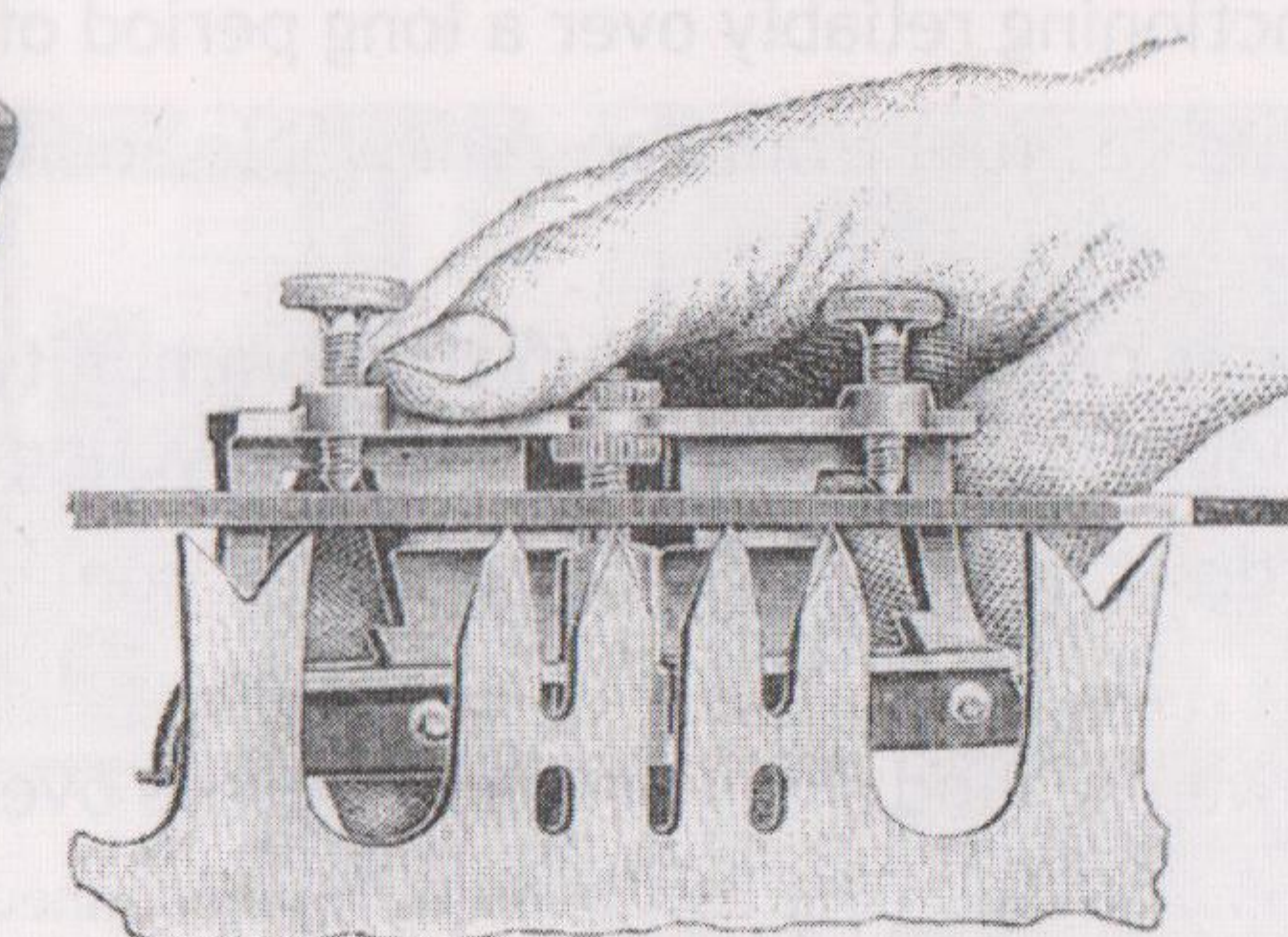
(Cont)

SAW SETTING TOOLS

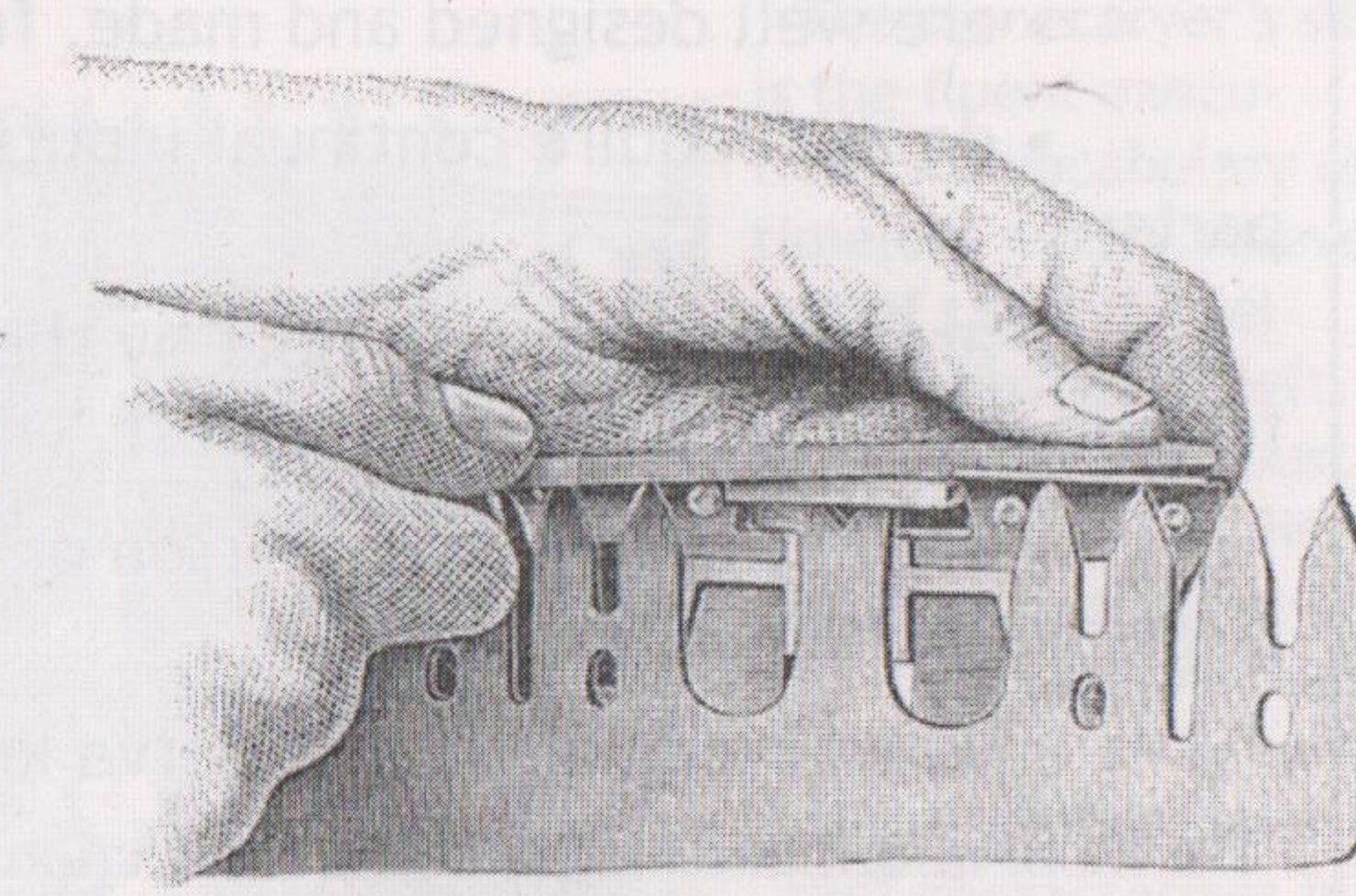
DISSTON'S IMPROVED IMPERIAL



Combined jointer and raker tooth gauge.



As jointer.



As raker tooth gauge.

A Range of Skills

The skills involved in repetitive pre-industrial manual labour are complex. There are in fact several different kinds, some of which can be categorized as follows.

Strategic skills In the 1980s a couple of labourers with shovels could knock up several cubic metres of concrete for footings cheaper than Readimix. Though this required reasonably deft shovelwork, it was more a matter of strategy than muscle. It required a full understanding of the properties of the materials — aggregate, cement and water — and the knowledge of exactly when, in what quantity and in what pattern to move each of these to achieve a consistent mix with a minimum of shovelwork. In agriculture such strategic considerations have to be undertaken at the beginning of the season, before planting. Acres are laid out to the nearest inch. Our measurements of an acre, a furlong and a chain result from the deduction, through years of experience, that 22 yards was the optimum distance between one rectangle of concentric ploughing and the next.

Tool Setting Much of the skill in ploughing consists of knowing how to set the various adjustments on a plough. A two-horse plough, if its depth and draught are set perfectly and it is pulled by a team that knows the job, can turn a straight furrow without the ploughman having to touch it or the reins once. To provide similarly effortless transmission of human muscle-power, hand tools must be shaped, sharpened and

adjusted to an equivalent standard. Profiling and sharpening an axe, a scythe or a saw is a complicated matter; for example instructions for sharpening Sandvik raker saws published in the 1920s specified 17 separate steps. The tool as a whole must be tailored to the stature and stance of the user, and the condition of the material being worked. It was said that you could no more lend a man your scythe than you could lend him your false teeth. Unfortunately education about these matters nowadays is lamentable. Most people learn to use an English shovel with the knuckles of their left hand facing the ground, although the grip commonly preferred by professionals is with the knuckles facing the sky. Sandvik (alias Bahco) now sell their bow-saw blades with the warning that they cannot be sharpened — but make no mention of the fact that the blade life can be prolonged by setting the teeth with a pair of pliers.

Finesse Within the context of a well organized strategy, a skilled worker develops a finely honed choreography of body and tool — for example, the neat nicking and slicing of Mr Heaney's spade. If a single repeated movement or tool stroke takes only two seconds, or two calories, then a tenth of a second or of a calorie shaved off that performance is significant. Deft toolwork is also important to ensure that all members of a team are co-ordinated, working synchronously and not getting in each other's way. I have a magnificent, very early film documentary of five Sami mowers, side by side, and fortified with a tot of vodka, wielding double-bladed scythes

Essential Tools and Skills
A Grassroots Global Network

"The old tools were better" is a sad refrain of craftworkers. It is common knowledge amongst those who use hand tools that (with some exceptions) their quality has declined over the last 50 years. According to farmer and scythe expert Peter Vido:

"The rampant outsourcing of manufacturing to countries with cheap labour and nearly no environmental or human abuse laws has had at least three decidedly negative effects:

- a) Vast amounts of materials are shipped across the world, and back again in processed forms, using fossil energy.
- b) Hundreds of reputable domestic manufacturers, large and small, as well as individual craftspersons, unable to compete with cheaply-produced imports, have had to close up shop.
- c) In the process, the quality standards are typically lowered. The present generation of tool users is being 'dumbed down' to accept poorer performance and/or a shorter life expectancy from nearly all household and trade products. (There are exceptions, but this is the major trend.)"

In order to counter this trend Peter and his son Kai are compiling a directory which will locate, consolidate, distil and present information pertinent to the use of essential tools.

"We define 'essential' tools as those which:

- are well designed and made, functioning reliably over a long period of time;
- do not require continual inputs such as fuel from non-renewable sources or frequent replacement of parts;
- are generally repairable by the user or someone within the community, and when worn out can be transformed into other tools, or compost, without the need for a complex recycling infrastructure;
- are powered by a) a person or a draft animal; b) wind, water or sun — however, we are partial to those powered by human energy;
- when used, help to preserve knowledge and skills proven valuable over many generations worldwide."

For more information <http://scytheconnection.com/network/index.html> • <http://scytheconnection.com/network/survey.htm>



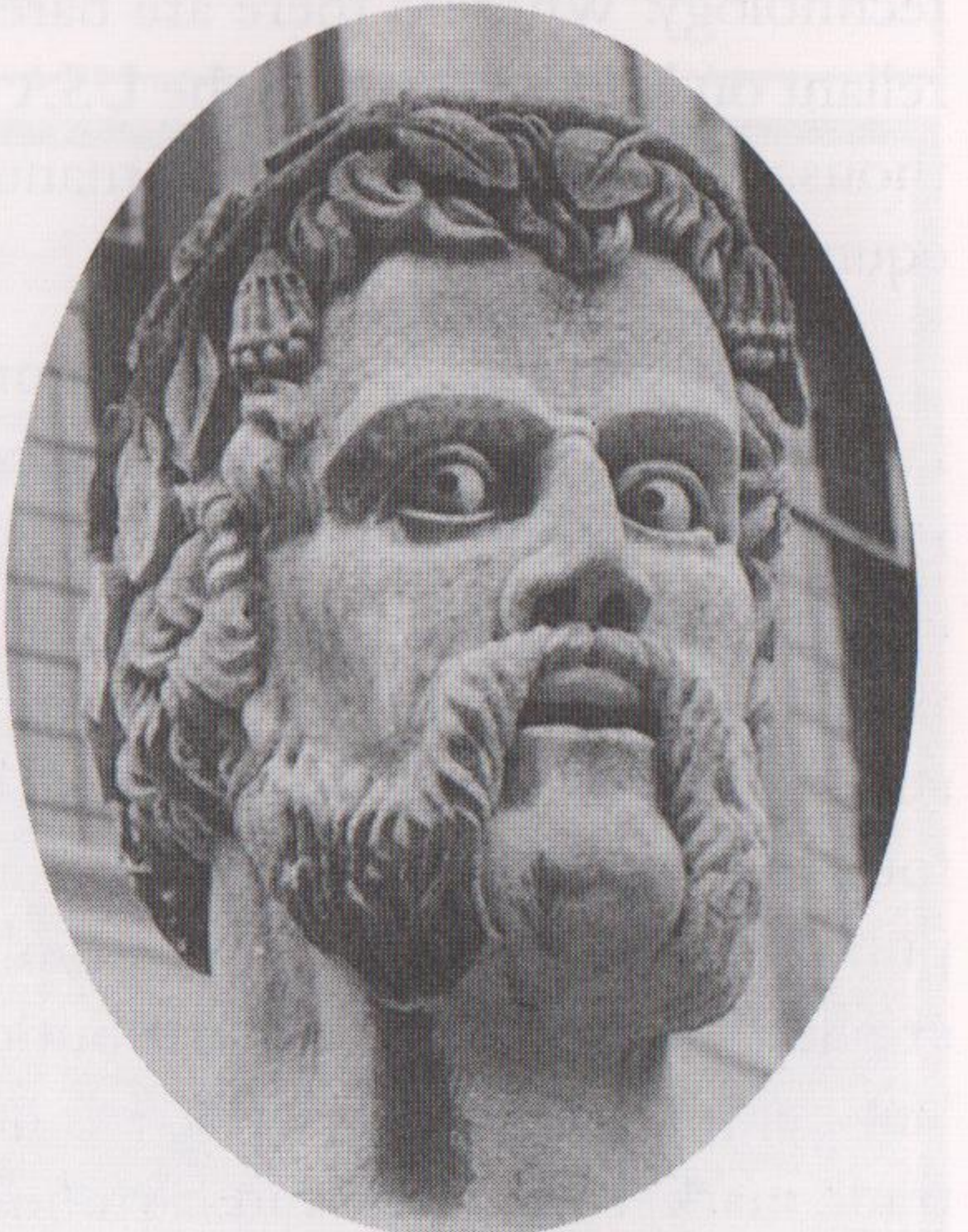
Bromley

The craftsman designing and producing one-offs must have skills that the repetitive labourer does not need to acquire. But repetitive work requires another kind of skill. Anybody with a sharp axe can make a serviceable tent peg; but to be able to make thousands of them competitively, efficiently, to a consistent standard, and without getting bored, is a skill of an altogether different order. Adam Smith reported seeing practised nail makers with no other forging experience making 2,300 nails a day, whereas an averagely skilled blacksmith who has never made nails in quantity can barely manage 300. The ability to repeat is what makes the craftworker more skilful than the artist. When in 1972 stonecarver Michael Black with two assistants carved replacements for the 13 huge bearded heads that ring the Sheldonian Theatre in Oxford the first took 300 hours and the last took 30 hours.

Satisfaction The final, and for some the most elusive skill is the ability to enjoy repetitive activity. This does not come easy to many youngsters. One approach is to set targets, monitor form and performance, both physical and mental, and take reward from identifying and eradicating minor efficiencies. Motivation may come from pride of performance or a John Henry like determination to outperform the machine that threatens to take your job. But for many the magic incentive is piece work, when every vine you hoe, box of apples you pick, or fish you gut is another silver darling in the pocket.

Another way to enjoy repetitive labour is to sink into a timeless meditative cadence. This requires profound familiarity with the tool, the material and the technique so that the action becomes as effortless and as instinctive as walking. This approach finds one expression in rhythmic team work where all members are functioning as a single unit. This kind of work is almost extinct in Britain, as are the songs that accompanied it, now drowned out by the noise of machinery. It is ironic that the same degree of co-ordination can be found in a rowing eight, now a sport, though once a means of propulsion, and at times a punishment.

Simon Fairlie

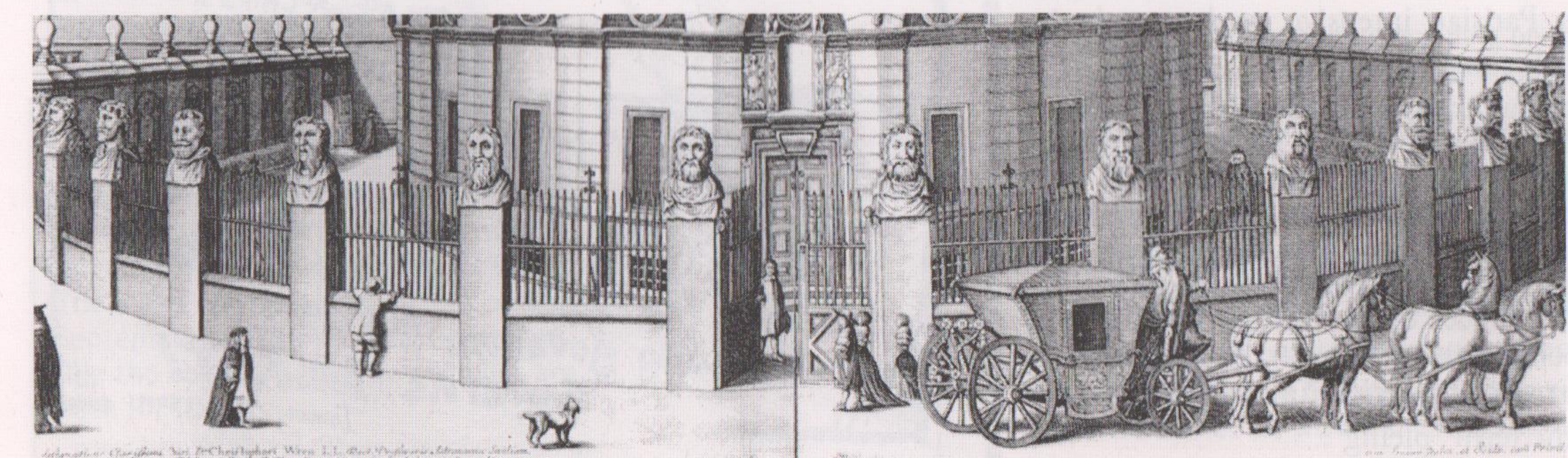


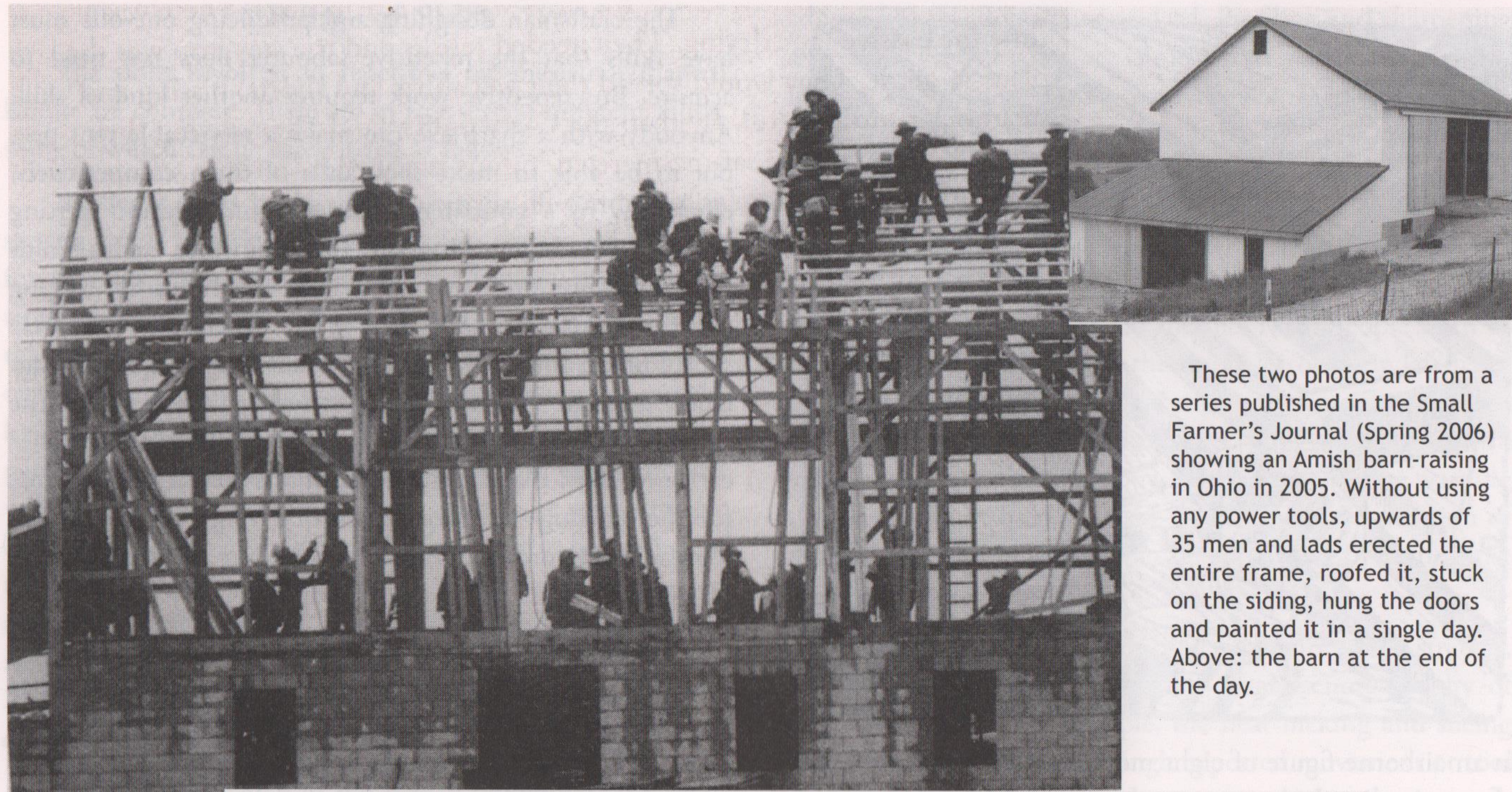
The stonecarver's skill is the fluent execution of timeless motifs. Above one of the 1972 Sheldonian busts; and left, the original 1662 busts, recarved in 1868. Henry Moore wanted to leave the 19th century busts to weather away to the total featurelessness that characterizes his own work.

in an airborne figure of eight motion so close that no blade of grass is missed.

Strength Fitness is required, and strength helps, but does not play as large a role in manual work as those who never practice it are inclined to imagine. Lifting a hundredweight sack of cement onto your back is less an act of strength than a matter of learning how to flip it from the ground onto your shoulder without it ever falling out of equilibrium. Not many women know how to lift a sack of cement, yet a woman can carry her toddler up a hill with greater ease than most men can, because the child knows how to lie in relaxed equilibrium with his mother's body. For the same reason it is easier to carry a compliant live body than a dead body, and harder to carry a resistant one.

Repetition There is a widespread assumption that repetitive manual work must be unskilled, presumably because unskilled machine work is repetitive. As anyone who has ever employed paid or voluntary workers knows, even the most basic repetitive agricultural job, such as picking apples or digging potatoes, requires some degree of skill, and elicits considerable variations in performance. More sophisticated forms of repetitive work require a process of initiation equivalent to an apprenticeship. It was said to take five years for a lad to learn how to mow with a scythe well enough to keep up with a team. Skilled tent-peg makers eventually learn to make the perfect peg with 17 cuts of the knife (though some do say it can be done in 16).





These two photos are from a series published in the Small Farmer's Journal (Spring 2006) showing an Amish barn-raising in Ohio in 2005. Without using any power tools, upwards of 35 men and lads erected the entire frame, roofed it, stuck on the siding, hung the doors and painted it in a single day. Above: the barn at the end of the day.

Small Farmer's Journal



It is curious that although the US is famous for its convoys of combine harvesters and its huge acreage of GM crops, it is also at the forefront of small farming and animal-power technology. Whereas there are barely a dozen farms in the UK reliant on horse-power, in the USA there are hundreds, possibly thousands, and more than 20 manufacturers of horse-powered equipment.

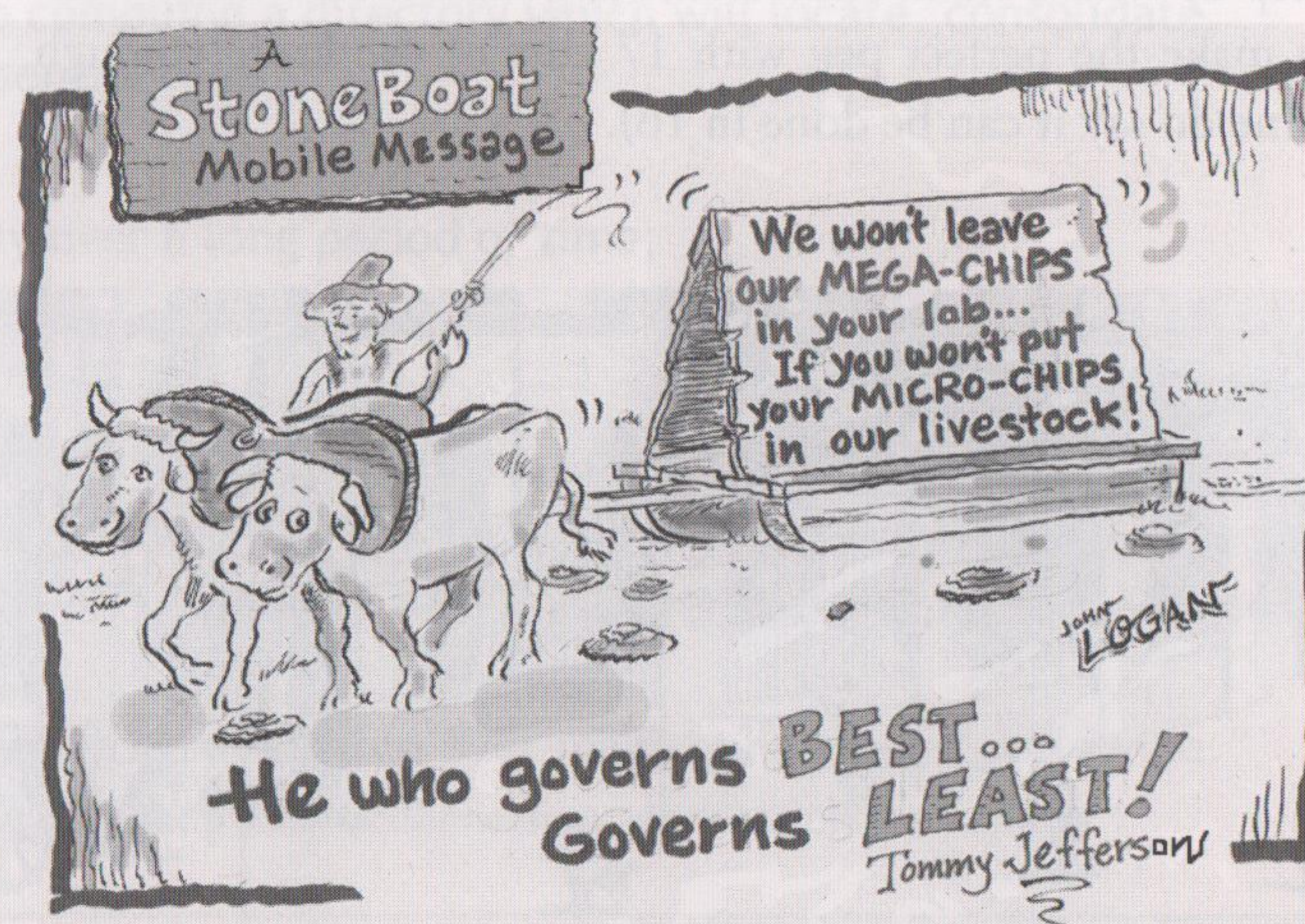
The undisputed source for information about modern horse farming is the *Small Farmers Journal*. The magazine, published in Sisters, Oregon, was established 32 years ago by Lynn Miller and his father Ralph. By any standards, the SFJ is one of the world's great magazines — distinctive, cultured, provocative, accessible, generous and exhaustive. With over 100 large format pages, similar in size and design to Lloyd Kahn's *Shelter* publications, each issue has ample space for long technical articles, lengthy reader's contributions and letters, 20 pages of "farmer's marketplace" ads, scores of photos, and the magazine's trade mark, engravings and cartoons culled from 19th and early 20th century books and magazines. SFJ recently reprinted the entire contents of a book, originally published by the *Daily Mail* in 1908, explaining how Parisian intensive market gardening could be adapted to English conditions.

The magazine's stance is a wee bit more libertarian than some people in welfare-state Europe may be used to, but it steers well-clear of looney survivalism. Its recent campaign against the introduction of ear-tags, microchips and other animal IDs will strike a chord with all small farmers in the UK plagued by DEFRA's bureaucratic interferences. Certain items hurled by farmers against the Department of Agriculture bureaucrats have given a new meaning to the term "pieing".

Despite its fondness for old engravings, SFJ is not (as some horse publications seem to be) an exercise in unalloyed nostalgia, but is committed to the advancement of equine technologies. It helps promote Horse Progress Days, an annual event held in the Mid West, where farmers and toolmakers demonstrate new developments in tool design. Recent new products include not only improvements to ploughs and harrows, but also cultimulchers, discs, raised bed makers, plastic mulch layers, transplanters and many more. Some examples are shown on the next page.

Small Farmer's Journal appears quarterly. One year's subscription costs \$50 including postage, from SFJ, PO Box 1627 Sisters, Oregon 97759 www.smallfarmersjournal.com

To view a gallery of photos from Horse Progress Days, see www.mf-tech.de/html/horse_progress_days_2002.html. the 2008 event occurs on 4-5 July in Mt Hope, Ohio.



Neglected Muscle-Powered Tools (Animal)



Much new horse tool design revolves around the use of ride-on hitch carts which take a range of fittings, much as a tractor can. Hitchcarts can also be fitted with a ground-driven PTO capable of powering small tractor tools; (see above a rotary hay tedder) or with a ground driven hydraulic system (right).



It is sometimes said that tractors replaced horses mainly because horses can't operate front-loaders. That's not entirely true as this 1930s Jayhawk hay loader, featured in SFJ, shows (below). However the Jayhawk would be little use in a small farmyard.



One Horse Farms

In the US, where there is plenty of spare land, and in the UK where there isn't but farmers are greedy, agriculture has been dominated by teams of two horses or more. Farmers and growers, whose land only warrants one animal can find it difficult to find single horse equipment, which is more easily available on the continent. But there are well tried, low tillage systems devised for single horses, particularly for row crops

Since 1991, the French firm PROMMATA, has been designing and manufacturing cultivation tools which can be drawn by one or two horses or donkeys, or by oxen. Their *Kassine* system is designed to minimise deep cultivation, and relies on a combination of harrows, hoes, subsoilers and ridging equipment attached to a lightweight two wheeled frame. They also supply heavier systems with a ride on hitchcart.

PROMMATA has supplied over 150 tools systems to French and Swiss market gardeners, vineyard managers and farmers, as well as providing tools and instruction in countries such as Madagascar, the Ukraine and Burkina Faso.

<http://www.prommata.org>

The British Festival of the Working Horse

The British Horse Loggers are organising a major festival of working horses - the first event of its kind in Britain. They emphasise that it will be for working animals, not for showing. The event will be held over the weekend of the 8th and 9th September 2012 in Windsor Great Park. Yes, that's 2012 - if you flee the country while the olympics are on, don't forget to come back for it.

www.britishfestivaloftheworkinghorse.co.uk/



The Demise of Hollesley Bay

A single-horse-drawn street sweeper at Hollesley Bay Colony, near Ipswich in the 1980s. Hollesley Bay began as a training establishment for the unemployed in 1887 and became a prison farm for young offenders in 1938, with much of the work performed by Suffolk Punches.

In 1988 Keith Chivers wrote: "Boys from inner city situations, without prior knowledge of animals, frequently evidence an innate horse-sense and learn basic skills with enthusiasm." And the 1990 Prison Governor's report stated: "We are blessed with excellent facilities. Our 1,700 acre Estate and Packing Sheds produce milk, meat and processed vegetables for consumption both here and in other Prison Service establishments.

In 2003, the farm was sold off. The Independent Monitoring Board's 2003 report stated: "The first review of Hollesley Bay's farm was in 1996, since when the indecision and lack of investment have reduced it to a soul-destroying state, with demoralized and bewildered staff, some poor quality produce and dilapidated buildings - little short of an embarrassment for those of us who live nearby. Let not the London-based 'experts' undervalue the local and national asset which exists here, both in environmental and economic terms, for this and future generations."

Chivers, K., *History with a Future*, Royal Agricultural Society of England, 1988 • http://www.btinternet.com/~fred.stentiford/hollesley/hm_borstal/hm_borstal.html



CHARLIE PINNEY

A picture of Charlie Pinney, standing on the right, who died in 2007. Charlie valiantly promoted, imported, invented, manufactured and sold horse-drawn agricultural machinery throughout an epoch which will no doubt prove to have been the historical nadir of draught animal use in this country. According to his wife Lucy, Charlie "drove all his horses using foul language and they responded eagerly". The picture is taken at least 20 years ago and shows a low-slung tipping cart with cable and winch, designed for big bales, but no doubt useful for other heavy weights. Some of his exploits are described in Lucy Pinney's delightful memoir, *A Country Wife* (Ebury Press 2004).

His website lives on: www.carthorsemachinery.com

THE CUBAN OX REVIVAL

ROBERTO SÁNCHEZ MEDINA reports that despite the revival of ox teams in Cuba, they still suffer from an image problem.

On a global scale, manual work represents the most important proportion of energy employed in agricultural work. Working animals and machines make up the rest. Agricultural machinery, although it dominates so-called modern agriculture, is only significant in the so-called "First World" and even there it is facing a crisis, owing to concern about the future of fossil fuels.

Cattle and horses arrived in America with the discovery of "The New World". In time they formed part of the agrarian culture of the continent. In Cuba, until the second half of the 20th century, the bulk of agricultural work was carried out manually, or with animal traction. While oxen were used to prepare the soil and pull merchandise on carts, horses and mules were employed mainly for carrying people and merchandise on their backs. It wasn't until well into the second half of the century that mechanization became a significant agricultural force. In 1959 only 9000 tractors were used for farm work. Some 30 years later 76,800 tractors (8.5 times as many) were available for use, and the future of Cuban agriculture seemed irreversibly linked to mechanization.

From Technification to the "Special Period"

At the end of the 1960s, agricultural development strategies were focusing on "technification" and the specialization of agriculture as the way to increase production in the sector. As a result of this vision and the profound social transformation initiated by the revolution, small and medium-sized properties were progressively incorporated into co-operatives and larger businesses. By 1992, 75.2 per cent of cultivated land was concentrated in large specialized state businesses. Meanwhile the population living in rural areas had fallen from 56 per cent in 1958, to a little below 25 per cent in 1990. The massive employment of agricultural mechanization seemed the most viable way to increase productivity and make up the labour shortfall. High-input agriculture triumphed throughout the country. In the period 1980-1989 investment in agriculture took up 30 per cent of the island's total investment. In 1989 530,800 tonnes of diesel were consumed in agriculture, while the number of oxen teams fell from half a million in 1960 to 211,700 in 1990.

The 1990s began with the collapse of the Soviet Union. Cuba had maintained more than 85 per cent of its commercial relations with the Soviet Union, and sourced all of its fuel from



the USSR and Eastern Europe. The crisis this collapse provoked in Cuba, along with the North American economic blockade, had major economic and social consequences, which became known as "the Special Period". For the agricultural sector, the most visible problem was the acute and immediate scarcity of inputs and resources, particularly fuel and spare parts. The most technologically advanced enterprises were the ones that were hit hardest.

It was necessity, rather than conviction which imposed a transformation of Cuban agriculture. The need to apply sustainable and organic forms of agriculture led to many efforts to rediscover ancestral agricultural traditions — including a revival of animal traction.

The challenge of the Special Period was to increase not only the number of oxen teams, but also their productivity, and stimulate the training of boyeros — the people in charge

TABLE Changes in land tenancy, 1990-2000 (% of total farm land)

Sector	1990	2000
State farms	75 %	33 %
Agricultural Production Cooperatives (CPA)	10 %	10 %
Basic Cooperative Production Units (UBPC)	0 %	42 %
Credit and Service Cooperatives (CCS) and private smallholder farms	15 %	15 %
Total	100 %	100 %

"Another important change that contributed to the use of animal traction was the transformation of many large state farms into cooperatives. Forty-two percent of Cuba's farmland is now allocated to Basic Production Cooperatives (UBPCs) that are entitled to use the land on a usufruct basis (Table 4). For these cooperatives and the small-scale private agricultural sector, the use of oxen and simple implements remains economically attractive."

Source: MINAGRI, 2000, cited in Animal traction in Cuba: an historical perspective by Arcadio Ríos and Jesús Cárdenas Instituto de Investigaciones de Mecanización Agropecuaria (IIMA), Havana, Cuba, <http://www.recta.org/pdf/iimahistory-en-22april03.pdf>

• Staging gatherings, courses and other national and international events.

This strategy achieved its best results in 1996 and 1997. In these years 598,125 hectares were counted as worked by animal traction by the Ministry of Sugar, and a further 1,073,620 hectares under the Ministry of Agriculture. The number of oxen teams had doubled to 400,000, the number of implements doubled, and there were four times as many blacksmith's workshops as there had been in 1990.

The majority of oxen teams, around 80 per cent, are concentrated in the private smallholder and co-operative sector, which occupies a little over 20 per cent of the land. It is amongst private landowners that the culture of working with animals is conserved and enriched.

On the other hand, this experience has enabled the development of important studies and innovation in the design of implements and tools for animal traction. The most important of these is the family of attachments which fit onto the *multi-arado* or multi-plough. This new implement, developed by the Instituto de Investigaciones de Mecanización Agropecuaria (IIMA) is capable of a number of different operations in the preparation and cultivation of the soil; and unlike conventional ploughs is designed to cut the soil horizontally.

Enthusiasm Levels Off

However the increase in the number of oxen achieved in the early years of the Special Period has not been maintained. Nowadays new oxen teams replace those lost. The production of tools and implements is still affected by a lack of materials and many research results and new designs for tools are not being followed up.

There are a number of reasons for this slowdown. Several analysts agree that overenthusiasm to increase the number of ox teams in a short time resulted in poor selection for breeding, and in inadequate care of the animals, which shortened their working lives. The lack of implements is another frequently cited reason. But above all they point to lack of motivation of the *boyeros*.

An old joke dating back generations tells of a peasant who sends his mother a photo of himself with his team of oxen. At the foot of the photo he writes "Here I am with my *junta*. The one in the middle is me." The joke highlights the close bond which is created between oxen and *boyero*, but it is told to poke fun at the intelligence of *campesinos*, and indicates the low esteem in which they are held.

The Cuban experience shows that substituting oxen for tractors can't be achieved overnight as the biggest obstacles are cultural, rather than technological. The top down transference of technologies can achieve results; but when institutional interest wanes, the adoption of these technologies stalls or declines. The search for permanent solutions has been limited by a failure to consider the socio-cultural aspects.

(cont)



Here I am with my *junta*!

Draft animals, such as oxen, donkeys and mules (though less so horses) suffer from an image problem. The United Nations Food and Agriculture Organization comments:

"Increasingly, the constraints to animal power development are psychological or social rather than technical or economic. Rural and urban based decision-makers and educators do not consider animal power as a modern development option. There is need to counteract existing negative and outmoded media coverage if people are to continue to consider animal power as a realistic option. Animal traction needs to be portrayed as a renewable technology that is relevant to the modern world."

From: *Draft Animal Power An Overview*, Agricultural Engineering Branch, Agricultural Support Systems Division, FAO

of oxen teams. On small subsistence plots or those producing for a local market, few doubt the advantages of oxen. The principle argument in their favour is an economic one: the expense of machinery cannot be justified on a small scale. On uneven ground, land liable to flood, and in periods of heavy rainfall when tractors get stuck, animals can still work, pulling and carrying without major difficulty. But on large holdings, or where ploughing is hard-going, the productivity of tractors is hard to compete with.

In 1992, the Ministry of Agriculture and the Ministry of Sugar Production introduced a national strategy for the revival of animal traction. This strategy included, amongst other recommendations:

- The distribution of oxen pairs to state enterprises, and "Basic Units of Co-operative Production" (see table p.44). These co-ops were subdivided into smaller units after 1993.
- Limits on cattle slaughter, and the selection of good quality bulls suitable for breeding working oxen.
- The formation of basic infrastructure (blacksmiths, small manufactories etc) for making implements for cultivation and traction.
- The creation of centres for teaching people how to break, train and manage oxen — these courses were incorporated into the state education system at national superior level.
- Research into the design of new implements, zoo-technical management and other related themes.

Three Approaches to Animal Use

The initial response to the crisis in Cuba was to view oxen as a temporary substitute for tractors and other agricultural machinery. Efforts and resources were dedicated to developing every type of implement that could be powered by a tractor such as brush-cutters, sprayers and seed drills. Amongst decision-makers and even producers, animal work is still often viewed as a stopgap. It is this same outlook that has prevented the country getting past the stage of trying to substitute one input for another in the development of its agriculture.

An intermediate vision, perhaps the most widely accepted, seeks to combine the roles of machines and animals efficiently, allocating each task to whatever is the more appropriate source of energy. This approach relies on achieving high levels of productivity through tractor use, whilst maintaining the fertility capacity of the soil through the use of animals.

A more radical option has been gathering force over time, but has yet to prove itself in practice. This approach proposes animal traction as part of an agrarian culture sustained by a more intimate relationship between human beings and the rest of nature. This means creating an agricultural system that satisfies the material and spiritual needs of rural people, whilst protecting biodiversity and improving the soil by using organic fertilizers rather than agrochemicals, and integrating crops with livestock. This type of agriculture can only be realized at a human scale, as opposed to an industrial scale.

Animal Traction in The Future

In the past few years, with the help of oil from Venezuela, Cuba has emerged from the depths of the Special Period. En-

What Makes a Good Ox?

- large size : up to 1200 lbs recommended.
- tough strong horns, well formed and positioned, at least five inches long;
- flat forehead, short robust neck and a straight broad back;
- straight strong legs, solid, smooth and well-formed hoofs;
- Indian Zebu types preferred to European races which are less hardy in tropical conditions;
- the animal's character can be seen in its walk: it should be neither too placid, nor too rebellious.

Breaking in begins around two years old, but they are not ready for full work until they are three. The breaking in is carried out with the assistance of the *narigon*, a short rope tied to a nose ring. They are taught how to walk tied by the horns, then they are put to the yoke alongside a more experienced animal. Each ox is given a short easy to pronounce name. A team is considered to be broken in when the oxen recognizes voice commands, allow themselves to be yoked easily and can be guided to left or right in response to the *narigon*. Oxen are castrated late, around 18 to 24 months old – apparently they learn quicker if they haven't been castrated. Oxen are only shod when working on very stony ground.



ergy supply has stabilized, agricultural production has increased and other sectors have been revitalized. The sense that we have passed through the crisis, though it may be an illusion, has diverted attention from these attempts to reinvent old methods. Nonetheless, although the increase in the number of ox teams in Cuba has slowed almost to a halt, numbers are not declining and animals are being replaced. The increase in economic activity, especially in the agricultural sector means there is still a place for them. Although new tractors are replacing old tractors, this may not necessarily lead to a significant increase in the use of mechanical equipment. Oil is now more available, but the recent steep increase in price obliges producers to continue to consider cheap alternatives.

The experience of the Special Period holds lessons for the future role of animal traction in agriculture. First, crisis or no crisis, mechanization generates a dependence upon external inputs and the market, which has caused, and continues to cause poverty and loss of land for millions of peasant farmers all over the world. The increasing scarcity of oil and the rising price of fossil fuels will make animal traction an important issue in years to come.

Secondly, oxen have an advantage on uneven ground, on land liable to flood, or in periods of heavy rain when tractors get stuck.

Finally, oxen may have a role to play in improving soil fertility and reversing erosion and compaction, due, amongst other factors, to the use of heavy machinery. However the use of oxen in itself is not guaranteed to conserve and protect soils. The type of implements used, and above all the type of agriculture practised are the key factors.

In the meantime, demonstrating in practice the work of animal traction, developing successful productive systems and restoring agro-ecosystems degraded by conventional agriculture – these are the principle priorities for those involved in rescuing and promoting animal traction as a viable element of the farming of the future. Progress will be slow, but Cuba's agricultural future will undoubtedly be linked to more sustainable production methods which will inevitably involve working with animals.

Roberto Sánchez Medina works for the Fundación Antonio Núñez Jiménez de la Naturaleza y el Hombre in Cuba. The article was translated by Chris Brock and Zöe Wangler.

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HORSE POWER, PEASANTS AND POLITICS IN POLAND

by JULIAN ROSE

The small peasant farms of Poland form the bedrock of traditional farming practices in this highly diverse and relatively unspoiled country. I say "relatively", because over the past decade Poland has been subjected to a full frontal corporate and EU attack upon its indigenous resources - industrial as well as agricultural.

However, in spite of a big post-communist sell off of national industries and a predictable fascination with capitalist 'free market' carrots, Poland retains a certain solidity and is not yet wedded to the urban-inspired life style that so strongly influences UK socio-economic patterns.

Around 22 per cent of the Polish working population are engaged in agricultural pursuits and farming remains Poland's single largest gross domestic product earner. There are still approximately one and a half million Polish farms with an average size of seven hectares, spread across the country.

The largest farms, many with foreign owners, are mostly situated in the north and west of the country. Some of these holdings are thousands of hectares in size and are largely agrochemically dependent, monocultural cereal enterprises, geared to taking advantage of the export market and EU subsidy payments. Many of these farms occupy land once run as State Co-operatives by the pre-1989 Communist regime.

In Poland, the Communists never succeeded in establishing co-operative farms on the scale found in Czechoslovakia and Hungary. The Polish peasants resisted all attempts to remove them from the land, and many farms in southern Poland are much smaller than seven hectares. They form a colourful patchwork of fertile land strips reminiscent of mediaeval English strip farms, spreading out around the villages they supplied.

There are no enforced privacy laws on this land. Anyone can walk freely over the fields and only if one deliberately damages growing crops is there likely to be any retribution from the farmer. Hedges are scarce and fences non-existent on most of the small farms. Demarcations between separately owned strips of land are known only to the owners.

A Robust Peasantry

The countryside's peasant farmers continue to take pride in the fact that they can feed their families and sell any small surplus locally. These robust farmers demonstrate an extraordinary blend of skills. It is common for the farmer and his family to build and equip their own home, dig their well and even construct a makeshift tractor. Their wives are equally adept in the art of traditional, "fridge-free" food preservation, butter and cheese making, general livestock management and home sewing skills.

What is most striking to the Western European outsider is that these small holdings are working models of a subsistence farming model long since abandoned in our part of the world. The majority use only very minimal amounts of chemical inputs, or none at all. All biodegradable materials are recycled,



Julian Rose

crops are rotated and farm yard manures are well utilized. Most of these farms use local woodland areas (legally) for their firewood, which forms a key part of farmhouse winter heating and cooking needs.

These farmsteads could be described as organic by default. Very few are officially registered as organic, although it would only take a small adjustment in their practices to do so. There is a very limited local market for certified organic produce in Poland, perhaps because the traditional food is already of a high quality and flavour, and few consumers seem ready to pay more for something with an organic label on it.

The main interest in organic farming comes from somewhat larger farmers, mostly located in central and north western Poland, keen to improve their incomes by exporting their products to Germany, the UK and elsewhere in Europe.

Horse-Power

Small 35 horse power tractors and traditional working horses combine to provide the main power requirements. There are said to be around 500,000 work horses still engaged in tilling the land and working the forests in Poland. These beasts occupy an important place in the overall economy and ecology of Polish smallholdings, as they compare favourably with tractors in their ability to work the land with a light ecological footprint and to transform the fruits of the land into inexpensive pulling power.

The main advantages of using horses are as follows:

- The horse requires a diet of renewable energy in the form of home grown hay and oats, whereas the tractor requires a diet of non renewable and finite fuel in the form of oil and diesel.
- The tractor's manufacture and upkeep also relies heavily on the same oil based energy source, whereas the horse arrives in this world as part of a natural breeding cycle requiring no additional energy inputs.

(cont)

- The tractor's life span may be a fraction longer than the work horse's. However, providing the farmer has a mare, she will reproduce and provide many generations of working horses that will still be working the land long after the tractor has expired. Foals that are not needed to grow on for immediate farmwork are sold at a good profit. Tractors cannot reproduce (yet!) therefore there is only one opportunity to get a financial return on their second hand value.

- The costs of buying a tractor and keeping it in a good state of repair during its working life, far exceed the veterinary costs of the workhorse over the same period of time. Local medicinal herbs remain naturally integrated in the meadows, so farm animals benefit from a species rich diet.

- The soil over which a tractor repeatedly passes is steadily compacted and loses its capacity for free drainage and good nutrient recycling, thus negatively affecting yields. The horse's more gentle footprint helps the soil to retain its optimum levels of fertility.

- The horse contributes to the overall fertility of the farm via the manure and urine passed during the passage of his/her life. The tractor contributes a negative emissions balance via CO2 and other related pollutants.

- The horse and its owner (plus friends) form a close and often mutually supportive relationship. Children also benefit and greatly enjoy the horse's company.

These are just some of the main attributes that Polish farmers — and all others who work with horses around the world — have discovered during the course of their lives. The only clear advantage attributable to the tractor is that it can do most jobs 20 per cent faster than the work horse. This does not apply to tree trunk haulage in the forests.



Anna Michalek

The amount of land required to fulfil the workhorse's dietary requirements (1 to 1.5 acres per horse as a rough rule of thumb) has to be taken into account in the overall scheme of things. However, this has to be set against running the tractor on non renewable imported oil based fuels coming from hundreds if not thousands of miles away.

Agribusiness as Usual

Poland is blessed with a remarkable variety of indigenous wild plants and an equally impressive native farmland bird count. A recent RSPB report stated that Poland retained a 40% higher native bird population than any other country in Europe. At the last national count, there were 44,000 pairs of nesting storks still choosing Poland as their summer residence, far more than in any other country.

Polish farmers must be doing something right. The wildlife thrives on the mixed traditional farmland with its minimal use of agrochemicals and the perpetuation of native, non hybridised crops. All in all this amounts to about the best model we have in Europe for a low carbon footprint society of the future. It is streaks ahead of even the most fastidious "first world" organic practitioners.

Ironically, the European Union is demanding the "restructuring and modernizing" of Polish agriculture just at the time when their own "best practice" model agribusiness farms are being slated for their major contribution to global warming and poorly maintained soils.

It is an iniquitous position. One ounce of common sense in the right heads would be enough to reverse such misplaced policy decisions. As it is, through the imposition of completely inappropriate "hygiene and sanitary" standards, EU bureaucrats have found the perfect weapon for driving Poland's small farmers off the land. Such land clearances are a precondition for the official restructuring of small peasant farms into large agribusiness enterprises designed to supply the burgeoning number of hypermarket chains (led by Tesco).

As we in the UK, and others throughout Western Europe, have experienced to our cost over the past three decades, the bacteriological police have ruthlessly executed their task of imposing completely inappropriate and costly sanitary conditions upon those farms that can least afford to comply with them. For thousands of farms struggling to cope with the inequalities of a rapidly expanding global food market, the imposition of these new hygiene standards is the final straw.

To their great credit, there are a number of small peasant farmers in Poland who remain unwilling to comply with such exigencies. They continue to hand milk their cows and sell their dairy produce to the neighbours; to retain the cow's straw bedding and shun the concrete demanded by officialdom; to let the swallows fly into their barns and animal sheds rather than denying them access, as demanded by the EU.

We see such farmers every day, sitting nonchalantly astride their horse carts and slowly moving down the Malopolska village streets. Their gentle pace, perfectly in tune with the rhythm of their farming lifestyles, allows modern life to go speeding past in a cloud of carbon dioxide fumes.

The question is, can this peasant resistance, which defeated the Communist regime's attempt to take over their land, now be extended to the wider farming population? This would include the medium sized family farms that have been particularly badly caught by government exhortations to modernize and specialize, only to find themselves squeezed dry by the rock bottom supermarket prices subsequently offered for their mass produced commodities. If dissatisfaction with government, European Union CAP policies and globalized corporate agribusiness should spread across the majority of Poland's extensive acreages, we could be in for a big surprise.

The International Coalition to Protect the Polish Countryside supports and promotes all well-intentioned attempts to maintain, or to wrest back control of time honoured, sustainable farming systems and the rugged independent life styles that go with them. It's a fundamental commitment that we all need to make and a reality we may well have to face ourselves — in the not too distant future.

Sir Julian Rose is President of the International Coalition to Protect the Polish Countryside. For more information, please see the following websites: www.icppc.pl and www.gmo.icppc.pl

Great Britain 92 — Poland 3

Cows are highly productive animals. Currently the average organic cow produces about 5,800 litres of milk with a retail value once bottled or processed of from £4000 to £8000.

It ought then, to be possible to make a reasonable living from a handful of cows. In the 1950s in Britain the average sized dairy herd had 18 cows. According one Devon farmer who was working in agriculture at the time, it was possible for a man to save up enough money to buy land by milking just five cows.

Today the average herd size in the UK is 92 and yet many dairy farmers are going out of business. DEFRA states, as if it were a matter it had no control over, that the "the trend for herd size is to increase" while the number of dairy farmers "is forecast to decline".

In Europe the average dairy herd is currently 36, and in countries such as Austria and Switzerland a herd of 6 or 8 dairy cows is not unusual.

In Poland, in 2004, the average size herd was 3.2 cows. This wasn't any bar to productivity, since in the same year Poland produced one and a third times as much milk per capita as Britain. But in its wisdom, the EU "to increase the competitiveness of Poland's dairy sector" is reducing Poland's milk quota and forcing farmers and processors who cannot comply with new regulations out of business.

It is ironic that the EU should talk about increasing the "competitiveness" of Poland's dairy sector, when what it is actually doing is reducing the number of farmers, stifling competition and introducing urban monopoly control.

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A Self-Replicating Energy Source

A US farm study conducted over a 40 year period on a 30 acre mixed farms in Michigan, analysed the operational cost of a team of two Belgian mares compared to a tractor. Over time the work horse owner derived a net revenue of \$21,000, not directly attributable to the sale of agricultural produce, from the sale of his workhorse's progeny. A tractor powered farm of the same size, where the tractor is traded in for a new one every ten years, would instead have incurred costs of \$70,000.

Code	Item	Value
A	Farm labour	\$6/hour
C	Consumption rate of fuel	1gallon/hr
D	Price of diesel fuel	\$1/gallon
F	Farm size	25 acres
H	Investment, initial for horses	\$8,000
I	Investment, initial for tractor	\$15,000
J	Additional labour, horses	20% (0.2)
K	Residual value of PTO cart	\$500
L	Tractor or team hours per acre per year	20 hr
M	Manure value per year	\$365/yr
N	Year in farm career (age 25 to 65)	40 years
O	Operational cost for tractor, tyres, oil, etc	\$250/year
P	Replacement cost for tractor	\$15,000
Q	Operational cost for 2 horses, feed, vet, etc	\$730/year
R	Replacement cost for horses	\$1,600
S	Sales of horse progeny (4/5 x 2 x 1.000)	\$1,600
T	Value at end of useful life, horses	\$2,000
U	Usable life of horses and tractor (5.000 hours)	10 years
V	Trade in value on tractor	\$5,000

Chet Kendell, Michigan, *Rural Heritage* magazine, Spring 2005; www.ruralheritage.com

HORSE CARTS BANNED IN ROMANIA

BY JULIAN ROSS

Driving from our tiny mountain village to the town of Bistrita recently, I stopped several times to take photos of villagers travelling by horse cart. I felt it important to capture these traditional Romanian images because they won't be here much longer — not if the Romanian government continues on its present course. Between new laws that make crucial aspects of the traditional Romanian lifestyle difficult to sustain, and overly strict — often downright ridiculous — interpretations of EU regulations, this government seems dedicated to destroying its country's rich traditions.

One does not have to travel far outside any Romanian city to see that most of the population still make their living from the land, through farming and forestry, using horses and occasionally oxen or water buffalo

NB Julian Rose, author of the previous article, and Julian Ross are different people.





Horses Banned in Sofia

In years to come, the practice of using horses to dispose of unwanted car bodies may become widespread everywhere, but for now Bulgaria's totters are under threat. In 2006 the municipal council of the capital, Sofia, banned horse drawn carts from the centre, including the main boulevards and the ring road. Romani Baht, an NGO representing Roma people filed a formal complaint against the ban saying that it deprived residents of three districts, mainly inhabited by Roma, from leaving their home with their vehicles. In July 2007, Bulgaria's Commission for Protection Against Discrimination recommended that Sofia municipal council withdraw the ban, but the municipal council could appeal in the Supreme Administrative Court.

www.sofiaecho.com July 2007

for both draught power and transportation. Most of these people continue to use traditional methods of agriculture by choice and necessity; modern equipment is not only impractical for the small plots of land and rough, often mountainous terrain, it is prohibitively expensive. So are petrol and diesel fuel. A million draught horses still work in Romania, a nation the same size as the UK, but with one third of the population.

Yet in its race to modernize, the Romanian government has decided that tradition, and those millions who cling to it, are expendable. One of the most damaging laws recently enacted (Article 71 of the Highway Code) forbids horse-drawn vehicles from travelling on "national highways". These are the ordinary roads between towns, not Interstates, Motorways or Autobahns, and run through one village after another. Often they are the roads used by farmers to access their fields, to get to market, to reach nearby woodland. It is a law that persecutes the majority of Romania's population, an ill-conceived law more in character with former Communist dictator Nicolae Ceausescu than with modern Europe. Apparently the urban bureaucrats in the capital Bucharest failed to consider that in many areas of the country the main road connecting the local towns and villages is the *only* road available, and therefore, was designated as a national highway during the Communist era. Beyond the congested environs of Bucharest, many "national highways" are relatively quiet and safe for animal-drawn traffic. Some "national highways" are not even surfaced with asphalt or concrete.

The Romanian government claims that "10% of road accidents are caused by horse carts." We should rephrase that: "10% of accidents involve horse carts." Most of these accidents

are caused by car drivers travelling too fast, driving carelessly, or driving under the influence of alcohol. However the law-makers are motorists, and prefer to blame peasant farmers who have no voice in law-making. The law-makers ignore the fact that making rural life more difficult will not only increase unemployment, it will rob Romania of one of its greatest assets: tradition. Banning horse carts from highways is another step towards eliminating what is unique and attractive to tourists. Romania's potential as a tourist destination is being squandered, and the Romanian people will once again be the ones who suffer for the ill-conceived actions of their government.

Unfortunately there is evidence that the Romanian police are using Article 71 of the Highway Code to persecute the Roma minority. Television news coverage has shown police officers harassing Roma and confiscating their horses. Not only is this a glaring example of institutional racism, the Romanian police force does not have the capability to care for confiscated horses, which may suffer neglect or maltreatment as a result, or simply be sold to slaughterhouses.

The Romanian Highway Code must be reviewed. We call on the Romanian Ministry of Transport to examine "best practice" from established EU member states such as Germany and Britain, and from Amish areas of the US. Horse-drawn vehicles must be allowed to travel on all highways except for those few where the risks are excessively high, applying suitable safety measures such as lights and reflectors where appropriate. A survey is required to establish the few places where motor traffic is too dense for horse-drawn vehicles to travel safely. Every other road must be available to horse-drawn traffic.

The Romanian government must be persuaded to stop persecuting people who use horses. Instead, it should take positive steps for equitable safety: funding comprehensive road safety awareness programmes, strictly enforcing speed limits and other motor vehicle regulations, and where necessary investing in dedicated tracks for horse-drawn vehicles parallel to national highways. The government should promote rural life, for productive small farms offer Romania's best chance for a healthy, sustainable future.

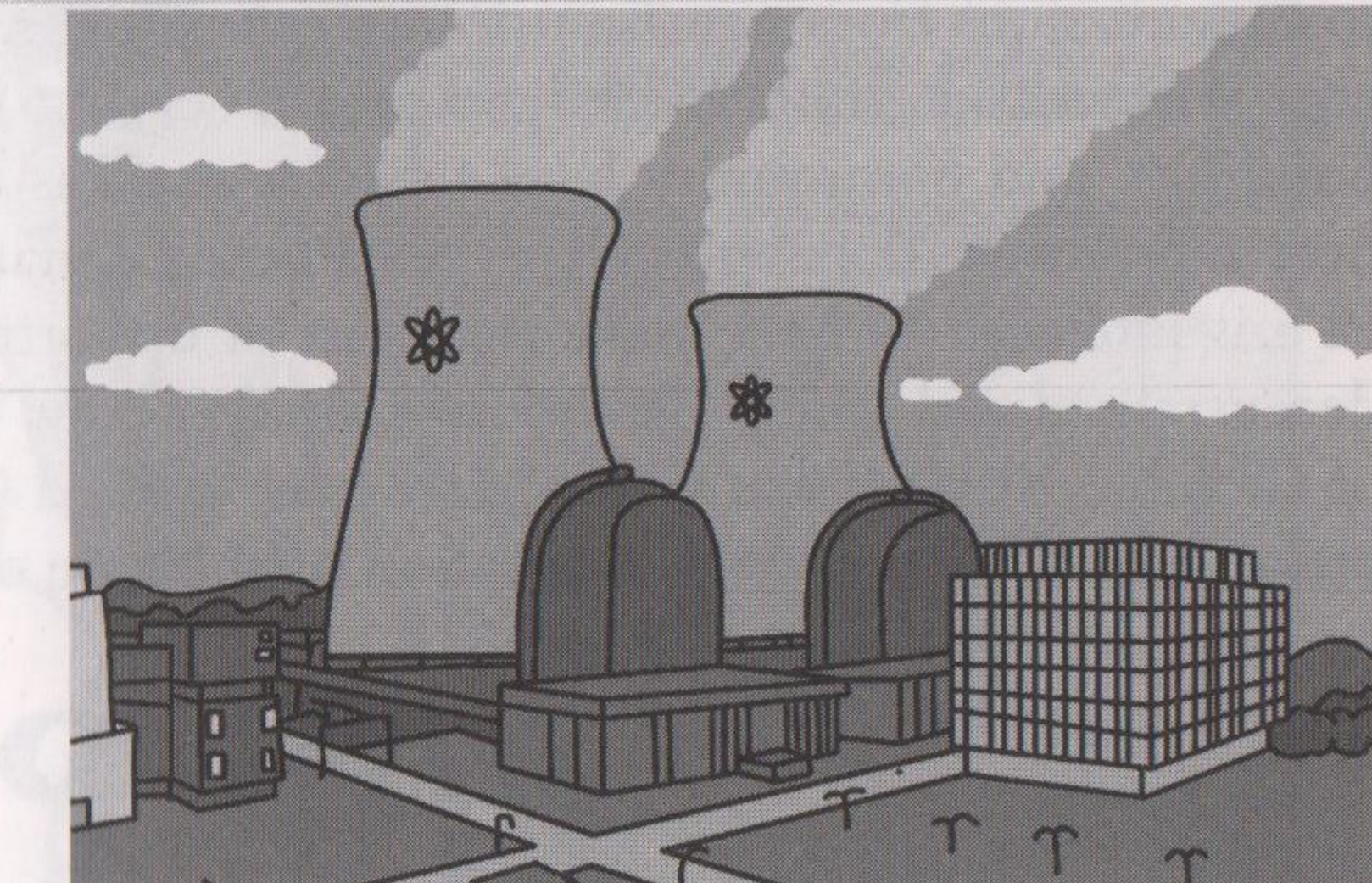
Please write to the President of Romania, Mr Traian Basescu, (a fluent English speaker) at the following address: Palatul Cotroceni, Strada Geniului nr. 1-3, Sector 5 - Bucuresti - Romania, Cod postal 060116

Please copy your letter to the Romanian Ambassador. The Romanian Embassy in London 4 Palace Green, London, W8 4QD, UK



CHAPTER SEVEN NEWS

THE TWO CULTURES BEHIND GOVERNMENT ENERGY POLICY



Ever since, in 1999, it defined economic growth as one of four components of sustainable development New Labour has tried to be all things to all people. This schizophrenic approach can be seen clearly in the Regional Spatial Strategies. For example, the one for the South West states in its opening chapter:

"The South West's ecological footprint is unsustainable as it stands. If everyone on the planet consumed such a quantity of natural resources and energy as an average South West resident, three planets would be needed to support life on Earth. Consequently, a shift is needed towards 'one planet', lower consumption, with lifestyles which are more resource efficient.

Yet within a few pages the same document is talking about "harnessing the benefits of population growth", and "overcoming barriers to economic growth. . . . To compete more successfully, the South West economy has to raise productivity" and so on. The RSS's attempts to reconcile a reduced ecological footprint with economic growth come close to self-parody in their attempt to cast airport expansion at Bristol, Bournemouth and Exeter as sustainable:

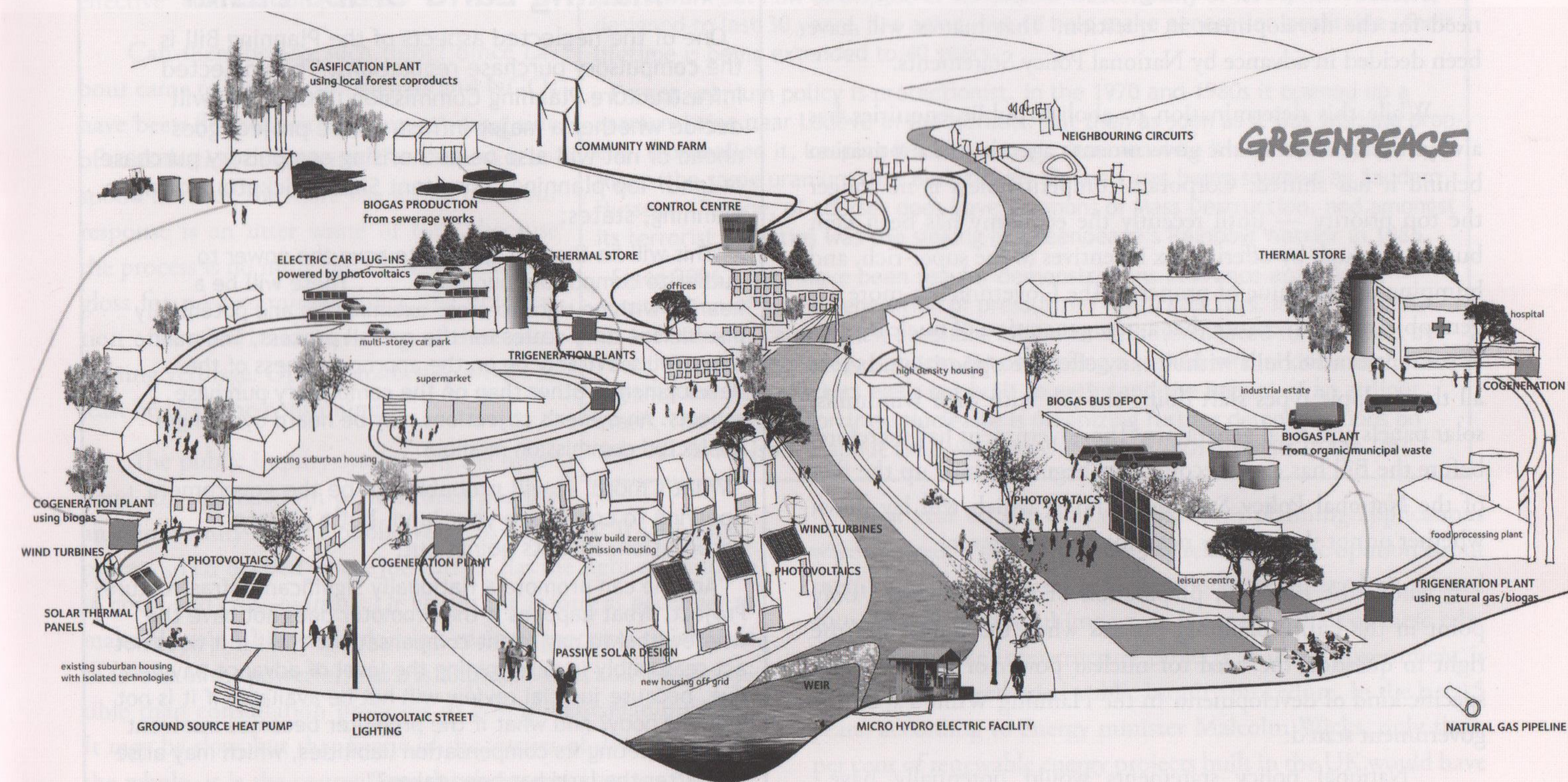
"The aim of the region's Air Strategy is to meet more of

the South West's demand for air services within the region, to reduce journeys to airports outside the region, particularly road traffic to Heathrow and Gatwick. This is considered to deliver some sustainability benefits"

Its as though two different groups of people wrote the document and that is effectively what has happened. The voices of corporate business, and of environmental lobbyists have been folded into one schizophrenic document.

In regard to national energy policy, however, the government has come round to the view that rather than attempt to reconcile the unreconcilable, it is better to give each side its own document to work on. The growth merchants and technofixers, centred round BERR (Department for Business Enterprise and Regulatory Reform, formerly the DTI) have been allowed to get on with their National Policy Framework for nuclear energy which, once in place, will allow new nuclear power stations to be constructed without being delayed by Public Inquiry (see next article). The pale greens at the DCLG, on the other hand, have commissioned a "Working Practice Guide" to back up their Climate Change Planning Policy which appeared last December.

(cont)



Draft planning guidance contains this illustration from a 2005 Greenpeace publication called *Decentralising Power: An Energy Revolution for the 21st Century*.

This little-known document, by consultants ERM and Faber Maunsell, states in its introduction:

Local renewable and local low-carbon sources of energy will be key to delivering the Government's target for all new homes to be zero carbon from 2016 and the similar ambitions to cut emissions from new non-domestic buildings. Local energy will include both micro-generation serving individual buildings, and community level schemes such as combined heat and power. The approach set out in the Climate Change PPS is intended to help make the most of opportunities for decentralised and renewable or low-carbon energy. The vision of an Efficient City that Greenpeace have created (see previous page) provides a vivid illustration of the type of low car-

bon community that the planning system can help deliver.

You could hardly find a source of inspiration more opposed to the nuclear power scenario being drawn up at the other end of Victoria Street by BERR. The word "nuclear" doesn't occur once in the DCLG's 142 page Working Practice Guide. And the word "renewable" doesn't occur once in BERR's 85 page consultation on nuclear power. It's like C P Snow's "two cultures", except the stakes are higher.

ERM and Faber Maunsell Working Draft of Practice Guidance to support the Planning Policy Statement:
Planning and Climate Change [http://www.erm.com/ERM/Website.nsf/GFN/PracticeGuide_NT_IG_SP_edits%20_3.pdf/\\$file/PracticeGuide_NT_IG_SP_edits%20_3.pdf](http://www.erm.com/ERM/Website.nsf/GFN/PracticeGuide_NT_IG_SP_edits%20_3.pdf/$file/PracticeGuide_NT_IG_SP_edits%20_3.pdf)

THE PLANNING BILL

The Planning Bill currently going through parliament is an anti-democratic measure that will do away with public inquiries and appeals at both ends of the planning spectrum.

THE STORY SO FAR

In 1997 Tony Blair commissioned a report from the US-based neo-liberal consultancy, McKinsey, arguing that the planning system thwarted competitiveness. Blair's first attempt to streamline the system, the 2001 planning Green Paper, turned into an embarrassing cock up when its architect, Secretary of State Stephen Byers got sacked for burying bad news in the wake of 9/11. John Prescott took over the drafting of the Planning and Compulsory Purchase Act 2004, and made sure that it failed to deliver any of the reforms that the neo-liberals were seeking. Prescott paid for his act of sabotage and Blair started the process all over again with the Barker report on planning, and subsequently the 2007 White Paper on planning. The process has now been followed through by Gordon Brown in the form of the Planning Reform Bill. **NOW READ ON . . .**

Three-quarters of the Planning Reform Bill, now going through parliament, is devoted to the proposal to abolish public inquiries for major infrastructure projects and replace them with a commission of appointed experts. This panel will decide whether or not a site is suitable for a major development, but will have no power to judge whether there is any genuine need for the development in question. That matter will have been decided in advance by National Policy Statements.

While this determination to abolish public enquiries has always been central to the government's agenda, the motivation behind it has shifted. Corporate competitiveness is no longer the top priority — until recently the economy has been kept buoyant enough by offering tax incentives to the super-rich, and bumping up the value of property. The Government's more urgent objective is to ensure that a new generation of nuclear power stations can be built without any effective opposition, before all those hippie types start doing the job with their windmills, solar panels and tidal generators. The government has therefore, before the Bill has even become law, begun to draw up the first of the National Policy Statement (NPS) which will lay down whether or not there is any need for nuclear power.

Under the new bill, preparation of the NPS is the only point in the entire planning process when the public has the right to question the need for nuclear power or for any other specific kind of development. In the Planning White Paper, the government stated:

"National policy statements would potentially have important and far reaching consequences, both nationally,

and for the individuals and places likely to be most affected. It is therefore essential that National Policy Statements are authoritative, and are seen to be authoritative. In order for this to be possible, the government is committed to ensuring thorough and effective consultation before policy statements are finalized and adopted."

This concern for the public interest is translated into Section 7(2) of the Planning Reform Bill, on National Policy Statements, in the following manner:

"The Secretary of State must carry out such consultation, and arrange for such publicity, as the Secretary of State thinks appropriate in relation to the proposal."

Unsurprisingly, the Secretary of State considers that the less consultation on the matter of whether or not we need nuclear power the better. In the first of three documents in the consulta-

Making Land Grabs Easier

One of the neglected aspects of the Planning Bill is the compulsory purchase regulations. The unelected Infrastructure Planning Commission (IPC) which will decide whether a major infrastructure project goes ahead or not will also be authorising compulsory purchase of land. Top planning consultant Simon Ricketts writing in Planning, states:

"This will be the first quango to have the power to authorize compulsory purchase . . . There will be a hearing with no right to cross-examination and potentially insufficient time-scales for the overall process. The main focus will inevitably be on the appropriateness of the development, rather than on the compulsory purchase aspects. An owner's objections may be heard by a single unelected commission member."

What's more, it will probably not be the government applying to confiscate your land, but a private corporation. Ricketts points out:

"Anyone can promote a Nationally Significant Infrastructure Project. What happens if the promoter does not have the wherewithal to pay blight compensation? What if it does not act reasonably in determining the level of advance payment due, because judicial review will not be available if it is not a public body? And what if the promoter becomes insolvent before meeting its compensation liabilities, which may arise long after the land has been taken?"

Planning 22 February 2008

tion process, the matter of whether or not there is any actual need for nuclear power does not figure anywhere. The 85 page document is as indigestible as its title — *Consultation on Strategic Environmental Assessment Scoping Report for Proposed National Policy Statements for New Nuclear Power*. The NPS, it says, will focus on developing criteria for assessing suitable sites and will reflect "the policy background to the NPS, including details of the Government's policy in relation to nuclear power, as set out in the White Paper on Nuclear Power".

This White Paper, published in 2008, was based on a consultation process from which, in September 2007, all the major environmental organizations, including Greenpeace, Friends of the Earth and WWF withdrew, claiming it was "stitched up". Who can blame them? While it was going on, Gordon Brown announced in his first Prime Ministers's question time "we have made the decision that we will continue with nuclear power." When asked to withdraw it, he issued a press release stating: "The government has decided in principle that businesses should be able to build new nuclear power stations and is now consulting on this." Six months later, in March 2008, when the first stage of the National Policy Statements was up for consultation, Brown was welcoming the sycophantic President Sarkozy and openly negotiating with him and EDF for the co-production of the nuclear power that was still supposed to be undergoing an "authoritative, thorough and effective" consultation process.

Can there be any such thing? Since Labour came to power, campaigners and NGOs have been flooded with an ever-growing tide of consultation documents. The more you respond to them, the more you realise that your response is an utter waste of time, because the process is no more than a public relations gloss for predetermined policy, the obfuscation of totalitarianism in a fog of time-consuming verbiage. Open dictatorship would at least be less time-consuming.

The public inquiry system, on the other hand, though far from perfect, does provide an opportunity for the public voice to be heard. It is the only process so far devised where Joe Citizen has the right to stand up in court and cross-examine Dr Expert for as long as necessary to make his point. Like most decision-making processes, it is biased in favour of the powerful, but it is unpredictable, and less susceptible than consultation processes to government manipulation. It may be slow, but that is one of the virtues of democracy. On the whole, it is the contentious developments that get delayed, while popular ones sail through with little objection.



EDF: Electricity Delivered from France

The illustration shows a 1994 protest postcard demanding the closure of EDF's Superphénix fast breeder reactor at Creys-Malville, S France. The text says: "And what if Superphénix blows up, Prime Minister?" "Impossible. The EDF pays experts to cross their fingers and burn candles."

In 1977 one protester, Vital Michalon, was killed, scores wounded and thousands (including one of *The Land's* editors) tear-gassed, when, according to police estimates, over 500,000 people marched on the site. The power plant opened in 1986 and by 1994 had only functioned for 6 months, thanks to a series of accidents and breakdowns. When it closed in 1997 there was a demonstration of 500 people demanding that it stayed open (who weren't tear-gassed).

After Gordon Brown's pally meeting with President Sarkozy in March 2008, it has become clear that he plans to team up with EDF (Electricité de France) to produce a new generation of English nuclear reactors. EDF is often pictured as an efficient producer of low cost energy. In fact it is a sinister parastatal organization, 87 per cent state owned, with a paramilitary approach to security. After the equally sinister Gazprom, it is the second-biggest energy provider in the world, operating in over 20 countries including China and the US, and is estimated to produce 22 per cent of the EU's electricity. It remains profitable through the retail distribution of electricity, including in Britain, rather than through nuclear generation, and has yet to work out how to dispose of its nuclear waste. Many of its French reactors, designed to last 30 years, are aging, but to help make generation profitable, their lifetime is being extended to 40 years.

French uranium policy is protectionist. In the 1970 and 1980s it opened up a uranium mine near Lodève in the Hérault, but then as soon as it was working properly, mothballed it, keeping it as a strategic reserve while it uses up supplies in Niger (the same uranium that Blair falsely claimed was being sourced by Saddam Hussein). France, of course, does have Weapons of Mass Destruction, and amongst its terrorist activities was the sinking of Greenpeace's Rainbow Warrior in 1985.

Since 2006, there have been regular demonstrations in France against the construction of a new generation of pressurized water reactors. In March 2008, an anti-nuclear campaigner, Stéphane Lhomme was interrogated for 10 hours by French counter-espionage services for possessing a leaked official document stating that the new reactors were not built to withstand the impact of an airliner crash. The network Sortir du Nucléaire is organizing further demonstrations on July 12, 2008. Isn't it about time we supported them with protests in the UK?

Last year 62 per cent of wind farm planning applications were allowed, a rate which roughly reflects public opinion about them. Smaller decentralized operations are allowed or refused according to their local impact. It is not on behalf of these relatively acceptable infrastructure projects that the government is abolishing the well-tried public inquiry procedure. In the last 15 years, according to energy minister Malcolm Wicks, only three per cent of renewable energy projects built in the UK would have been big enough to qualify as "major infrastructure projects" as

defined in the planning bill. The sole reason for the new bill is to push through the unpopular ones, such as Heathrow's new runway — and above all it is to rescue the nuclear industry. As fossil fuels fall into disgrace, the energy industry and is becoming desperate to maintain centralized control of UK energy through an unaccountable decision making process.

No Right to Appeal Against Delegated Decisions

The Planning Bill is also taking away the right to appeal at the other end of the planning system. There is no longer any guarantee that planning applications which are refused by delegated decision (ie are decided by officers, rather than at planning committee) can be taken to appeal. Instead, in most cases they will only be subject to a review by a local authority panel. This dispenses with the main benefit of the appeal system — the ability to have your case heard by someone independent of the partisan world of local politics.

Ostensibly this is directed at "householder" appeals — for conservatories, extensions, garages and so on. But local authori-

ties are now regularly delegating more serious applications, including those where refusal may lead to an eviction of someone from their home. The bill states that local authorities must specify which kind of delegated decisions will no longer be allowed to go to appeal, subject to guidance (as yet unwritten) from the Secretary of State. These will presumably be known as Section 75A applications; local authorities will still be allowed to delegate decisions not on the Section 75A list. When the Secretary does write this guidance, and local authorities their lists, human rights activists need to make sure that applications related to eviction from one's home or matters of similar gravity, are not denied the right to appeal.

If they are then there will be little point in putting in an application in advance for a development that is likely to be turned down by the officers. The only way of taking it to appeal will be to carry out the activity without permission, and go to an enforcement appeal. And that is probably what increasing numbers of people would do.

BOULOT, DODO BUT NO METRO

The Live/Work Network advances its cause, while government remains unenthusiastic

It's hard to see why they bothered to replace PPG4 on *Industrial Commercial Development and Small Firms* with PPS4 on *Sustainable Economic Development* — other than it is a necessary part of New Labour's policy of renaming and rewriting everything. It is difficult to detect any significant change, or to decipher out what difference the addition of the word "sustainable" has made.

Particularly disappointing is the scant reference to live-work. Since the planners' view of sustainability revolves around the need to site homes close to workplaces, you would have thought that living where you work was something to be encouraged. Yet whereas the 1992 PPG had six paragraphs on mixed use developments and another two on home working, the new draft just mentions them just once or twice in passing. True, it does actually use the term "live/work" for the first time in planning policy guidance, when it urges local planning authorities to:

"Take account of the spatial working patterns that advances in information and communication technologies allow, such as live-work units or the use of residential properties for home working."

But this is a far cry from stating that we all need to travel much less, and so living where you work is one of the best ways to reduce car use, especially in the countryside, where there is little public transport.

The Live/Work Network

The Live/Work Network is a "membership organisation for everyone with an interest in providing live/work units". Unfortunately membership costs £170. Since *The Land* can't fork out £170 every time it needs a bit of information we wrote to Live/Work requesting two 40 page reports covering rural areas, offering in return some of our own material. We got an e-mail back



A live/work unit in fashionable SW1.

requesting a payment of £45 for the two documents.

The two reports, entitled *Rural Live/Work* and *Under the Radar: Tracking and Supporting Rural Home Based Business* are not without merit. But, the first thing you notice about them is that between them there are 21 photos showing people seated by computers, against just six showing people apparently involved in something else — and only one of them has anything to do with land management, a woman making ice-cream on a farm.

The text reflects the bias of the photos: the emphasis is on "high value knowledge-based businesses", while the trend towards home-working is "fuelled by the impact of new technology" While this may be true, it misses the bigger picture. Self-employed home-working is on the rise because the UK has stopped being an industrial economy, and delegated that sort of centralized production to the third world. The more home-workers there are in Britain, the more people there are in Africa, China or India, leaving home to work in mines, factories or call centres.

"Only four per cent of the rural workforce is employed in farming," the Live/Work team write smugly, adding that the downward trend is likely to continue, "highlighting the need to diversify rural employment away from dependence on less significant and declining sectors . . . The rural economy needs to ensure it does not put all its eggs in one basket." With only four per cent of the rural workforce, and all that land to look after, you would think that farming is one of the baskets that needs more eggs in it, but that, of course, is not what they mean.

The authors of these reports seem to be blissfully unaware of the considerable number of workers in the agricultural, forestry and other land use sector, who either live where they work or

else would dearly like to. These people's problems, aspirations and indeed very existence (aside from the ice-cream lady) are ignored in the two reports. The authors' marginalization of rural land-based workers makes one suspect that their proposed live-work developments are catering primarily for upmarket urban colonizers of rural space, and hence part of the problem rather than part of the solution.

However, once you put all this bias to one side, these two reports are actually quite useful. There is nothing startling, but they supply plenty of helpful information, ranging from statistics to case studies; they make a good case for the view that home-based enterprises are "invisible" and hence undervalued; and they make useful policy recommendations. Above all they

SKEWED TOWARDS DEMOLITION

One of the main dangers associated with the new Climate Change Planning Policy Statement, published in December 2007, is the impetus it may give to new and unnecessary development. The problem is that planning authorities are empowered to impose conditions upon the energy performance of new buildings, but only in certain circumstances will they be able to impose retrofitting of energy conservation measures on old buildings.

This can be clearly seen in this statement from 3.91 of the draft Climate Change Practice Guide:

"While there are only limited opportunities through LDDs and planning decisions to influence what happens to existing buildings, planning authorities need to be . . . taking account of the poor carbon emissions performance of existing buildings, when considering the extent of identified redevelopment zones or regeneration areas."

This is a recipe for planners colluding with developers in the destruction of fine old buildings or swathes of terrace houses and their replacement by glass boxes of dubious architectural merit. If we are to protect our architectural heritage it is important that planners are obliged to weigh up the potential retrofitting costs of old buildings against the embodied energy requirements of new ones when making any such carbon emission calculations.

With these matters in mind, the Empty Homes Agency recently carried out a study showing that the embodied energy in new brick built homes was about 4.5 times the amount used in refurbishment, and equivalent in carbon emissions to about 20 years of use of the house. The Agency concludes:

"Previous studies and much of the accepted thinking on domestic CO2 emissions have suggested that demolishing existing homes and building new homes to replace them will contribute to an overall reduction in CO2 emissions. This study suggests that this is not so."



The Empty Homes Agency could have added that the construction industry is also biased against refurbishment because it is fiddly, slow, messy and offers less opportunity for architects to flaunt their egos. On the other hand, new homes built out of rammed earth or timber would probably have lower embodied energy.

Meanwhile an attack on terraced houses has been launched by the Chartered Institute of Environmental Health. Not content with forcing small-scale food producers out of business with their paranoid food processing standards, these guys have now issued a report advocating demolition of large numbers of terraced houses, rather than their upgrading, and a revival of the Pathfinder scheme for urban clearance (see "Urban Clearances",

The Land 3, p.37). They perpetrate the myth that these houses are "past their sell-by date" and "not physically able to meet the needs of the 21 century" even though they have "an inflated market value because of their location". The report notes that most of the houses identified as substandard are in the private rented sector — council and social housing perform much better — but do not draw the obvious conclusion.

ERM and Faber Maunsell, *Working Draft of Practice Guidance to Support the Planning Policy Statement*, March 2008, www.erm.com

Empty Homes Agency, *New Tricks with Old Bricks: How Reusing Old Buildings Can Cut Carbon Emissions*, March 2008, www.emptyhomes.com

Chartered Institute of Environmental Health, *Commission on Housing Renewal, and Public Health: Final Report*, December 2007/www.cieh.org/library/Knowledge/Housing/Housing_renewal_report07.pdf



Commission on Housing Renewal and Public Health Final Report

WE CAN'T BUILD OUR WAY OUT

Lib Dem MP, Matthew Taylor, is currently advising Gordon Brown on rural affordable housing problems. The thrust of his advice will be that more power should be given to "the community". But the countryside is a collection of different "communities", often with conflicting interests and some with more power than others. The rural housing problem is systemic and rooted in the structure of the planning system. Matthew Taylor might take note of the following article by his colleague, ANDREW GEORGE, Lib Dem MP for St Ives.

On the surface, it all seems very simple. There is a shortage of homes therefore we should build more.

At the macro-market level for the UK as a whole that may appear to make sense. But you cannot then apply such a two-dimensional policy across the board without taking into account the nature of the housing demand and supply relationships at a more micro level. Across large swathes of the country, building more houses is not the answer, even though there is a desperate and a substantial need for more and affordable housing.

In the last 40 years the housing stock in Cornwall has more than doubled – in fact it is growing faster than almost anywhere else in the country. Yet the housing problems of local people have got dramatically worse.

We cannot build our way out of this crisis. More house building has equalled more second homes, more retirement homes, more properties used for either recreational, investment or status purposes whilst local people continue to be priced out of the market. What is clearly needed are policies to make better use of scarce land and construction capacity.

In the last couple of years I have undertaken a survey of local estate agents operating within my West Cornwall and Isles of Scilly constituency of St Ives. Last year it showed that, once again, five times as many properties were sold to second home buyers as to first time buyers. Indeed, some estate agents reported they had sold between 60% and 65% of all available properties to second home buyers and nothing to first time buyers.

Back at the macro level, most of the political debate concentrates on the trading of relatively meaningless statistics in relation to build rates, public investment and the definitions of affordable, rural and assessments need. Most of this is largely irrelevant to the situation in Cornwall as the solutions which are required would either demand levels of public subsidy which could threaten to bankrupt the country or levels of housing development of such an unfeasibly high level which developers could not keep pace with.

Fuelled by Greed

Underpinning both the problem and the potential solution should be a recognition that the planning system is fuelled more by greed rather than by need. We need to rebalance the system to give the poorest in our communities the chance of finding affordable housing rather than continually feeding the desire of developers or those with large gardens to secure personal lottery wins through the planning system.

We need radical solutions which can be implemented at a more local level and which take account of the manner and operation of the housing market at a sub-national level. The Government could give a region like Cornwall the tools to solve its own problems, without it costing a great deal more than they might otherwise have invested through the Housing Corporation, etc.

The primary tool to achieve this would be the creation of a stronger and more sophisticated planning system. We need to create new winners and losers from the housing and planning system. The losers would be developers who currently prosper from inflated land values and from building unaffordable housing out of the price range of local families and those who use local homes for investment or recreational purposes. The winners should be local families in desperate need of affordable housing, our communities and our environment.

To achieve this, we would require two changes to the planning system. First would be the introduction of a new Use Class Order to differentiate between permanent and non-permanent occupation – i.e. the need to apply for "change of use" to turn a home into a second home. Local authorities could set absolute limits (either proportionately or numerically) within their Local Statements/Plans which would then give them the justification, where applicable, to turn down such applications. Needless to say, these permissions would only be granted for the lifetime of that occupation (in order to avoid inevitable market distortion). If the Council Tax and Business Rates system were not sufficient to assist with defining what a second home was then the Capital Gains Tax and local knowledge could be used to help resolve those cases where there was potential dispute.

Secondly, stronger controls on housing development would deliver more affordable housing. In a place like Cornwall and on the Isles of Scilly we need to construct a new significantly lower rung on the housing ladder with the creation of a new market for affordable "intermediate" housing (shared equity, mutual housing, etc) which, in my view, should be managed in the long-term by non-profit distributing Housing Associations/Trusts to ensure the benefit of this development is retained for the local community in perpetuity.

I know it sounds counter-intuitive, but the best way of meeting the need for affordable housing in this way is to stop development and draw development lines tightly around communities. Planning grounds would then need to be found on which an "exception" could be made to permit only those developments which met a raft of requirements in respect of occupants, future management and affordability. The key determinant of affordable local housing is that of land price and it is the containment of excessive profiteering through the planning system which needs to be better managed to secure higher levels of more affordable housing. In my view, that can only be achieved by dampening the "hope" values on much land through a stronger and stricter implementation of planning policy for unfettered housing development.

Of course we could carry on in the vain belief that simply heaping tens of thousands more houses onto our countryside would, by some magic of the market, solve our housing problems. The last 40 years of trying that policy should, however, tell us otherwise. •

Vandals in Suits



Fat Rent Parties

When the Zurich construction company Livit opened up its showroom luxury apartment to potential buyers it found it was hosting a "Fat Rent Party" including champagne and a ghetto blaster staged by young people protesting against the high rents – over £1100 per month for a two-roomed flat. Similar events have taken place in Paris. www.stadt-wohnen.ch

Big changes are afoot in the commercial property market. From 1st April 2008 the government is taxing all commercial landlords who leave their buildings empty. Previously owners of empties had been able to claim 'business rate relief', effectively subsidising them to keep their buildings empty, create artificial scarcity of office space inflate rents. Rents in this so-called "market" have been on a ratchet system, only allowed to go up, not down.

Gordon Brown failed to cave in under pressure to keep the scheme from the British Property Federation (BPF) who are not used to being thwarted by Westminster. They condemned the move

as "irresponsible and likely to impose a severe burden on businesses at the worst possible time".

The businesses they refer to are probably all members of the BPF, since all other businesses would benefit from a real market in office rent which can go up and down as more offices become available to rent.

But rather than allow empty buildings to be populated and rents to drop, the most mean-spirited commercial property owners are demolishing their buildings. Demolition balls began to smash up the massive nine storey Clerical Medical building on Temple Way in Bristol just days after business rate relief was withdrawn. Coincidence?

YESTERDAY'S TO-MORROW

STEPHEN E HUNT examines Bristol's Garden Suburbs in the light of a new wave of "ecovillages".

In June 2007 Housing Minister Yvette Cooper announced that Bristol was to host an "ecovillage" as a pilot for Gordon Brown's proposal to create five zero-carbon "ecotowns". Housebuilding giant, Barratt Developments, won the contract to implement the project at Hanham Hall, on the outskirts of Bristol, in December 2007. 150-200 homes are planned, of which up to a third will be "affordable".

These new ecovillage developments have several features that promise to make them more sustainable than many other housing developments currently under construction. They will have Combined Heat and Power plants, and schools and shops located within walking distance to reduce car use. Gordon Brown's inspiration for these new "ecotowns" is the Swedish high-tech innovations at Hammarby Sjostad, which, although inspiring, are largely technocratic in approach.

The most prominent historical prototype for this kind of intentional community planning for social and environmental

ends is the Garden-City movement of the early 20th century, (though it continued to have an influence on the new towns of the 1950s). However new ecovillage developments such as Hanham Hall are likely to function chiefly as commuter villages and have no aspirations to be economically self-sufficient in the sense envisaged by the originator of the Garden City movement, Ebenezer Howard.

Shirehampton

Bristol also happens to be the location of two such Garden City developments, in Sea Mills and Shirehampton. The Bristol Garden Suburb Limited at Shirehampton was set up in 1907 to implement the ideas popularized in Howard's original blueprint, *Garden Cities of To-morrow*. It attempted to provide working people with affordable, high-quality homes in a healthy environment, that was to be a modest scaled-down version of garden cities such as Letchworth and Welwyn, Financed



20th and 21st century garden suburbs. Sea Mills (left) looks pretty normal now – how will Barratt's eco-houses look in 100 years time? Will they still be there?



through £1 shares, returns were limited to five per cent “in the belief that many persons will be satisfied with a moderate return in connection with a social experiment of great importance.”

The Shirehampton prospectus follows the meticulously costed structural model and principles as set out by Howard. In anticipation of present-day initiatives for “mixed housing”, it set out the intention to build “houses for all classes”. There was to be some diversity in the size and design of the dwellings, but the prospectus promised generously adequate open spaces and a “capital garden” for each. The drive towards

economic self-sufficiency is an important part of Howard’s programme, which envisaged that residents would live within walking distance of their workplace. The site’s construction work was to be sub-granted to local builders, Co-operative societies or ideally a complementary building company founded specifically for the purpose. Applications to set up light industry were welcomed with the proviso that “factories are fitted with up-to-date appliances for the prevention of smoke and fumes emanating therefrom”.

The project got off to a promising start when Thomas Adams drew up plans for nearly 300 homes. However, only a fifth of these had been completed when the work was suspended due to the outbreak of hostilities in 1914. After the War, the house-building plan was not revived and the pre-war development with its distinctive gables and cottage-style appearance was never completed. A Passage Leaze resident told me, “It was a shame that the whole of the Shire wasn’t built like it but I suppose the Kaiser had something to do with that!”

Sea Mills

If the garden suburb at Shirehampton was to be thwarted by the outbreak of World War I, a larger development at nearby Sea Mills was to owe its advent to the bid to build “homes fit for heroes”. In the aftermath of the war, the national mood of reconstruction ensured more state involvement in the enterprise. The homes at Sea Mills were largely built as Parkinson PRC houses (Pre-stressed Reinforced Concrete), and are less cottagey than those at Shirehampton. However the radial pattern, with focal greens, cul-de-sacs and avenues over an expansive area of development is closer to the fulfilment of the garden-suburb idea. The scheme covered a substantial area of today’s Sea Mills by the programme’s conclusion in 1931.

The Sea Mills development is under immediate threat of compulsory development and a campaign group, “Save Sea



Left, dairy at Blaise Castle, 1804, and, above, the Trading Post house, 2006. The photo of Blaise comes from Gillian Darley’s book *Villages of Vision: A Study of Strange Utopias*, recently republished by Five Leaves. Darley traces the history of British Utopian architecture from the picturesque movement of the early 19th century through to the early 20th century garden cities and suburbs. There are some interesting comparisons to be made with early 20th century low impact design.

Mills Garden Suburb”, has been founded to fight Bristol City Council’s proposals to downgrade the area’s conservation status. Currently the land concerned is still afforded some protection by restrictive covenants, but Bristol City Council legal team appear to be “working on whether the Covenant can be modified or removed”.

Although these developments were originally set up to support what, according to prevailing Edwardian notions, were the deserving poor and “hard-working families”, ultimately it was perhaps inevitable that in desirable areas market forces would ensure that such homes would be unlikely to stay affordable. The “capital garden” for each has made them attractive to today’s developers keen to knock them down and redevelop at twice the density.

London’s Hampstead Garden Suburb is now the preserve of the super-rich, with the larger houses currently being offered for several million pounds, while the surrounding woodland has long since been cut down and developed. Murray Bookchin observes that Howard was to leave “undefined the nature of work, the control of the means of production, the problem of distributing goods and services equitably, and conflicting social interests that collect around these issues” – in short the other materials of which community is forged.

Peter Hall and Colin Ward argue that the mass production of the motor car and the post-war baby boom were both critical factors in preventing a revival of the garden cities in the second half of the twentieth century. A new grass roots initiative to make communities more ecologically viable, neighbourly and socially just has emerged in the Transition Town Network. Today, as more localised economies re-emerge, and commuting to work by private car becomes outmoded, Howard’s *To-Morrow* may again appear desirable.

TRANSITIONAL THERAPY

SOPHIE ANDREWS agonizes over the Transition Towns initiative which she finds worthy, but a bit anodyne.

I do like a nice handbook. And this one is lovely; practical, positive, easy to read, and full of anecdotes and interesting info-bites. It takes us smoothly from where we are now (climate change, peak oil), to where we want to be (local resilience – aka self-sufficiency) – and shows us how to organize for the Transition. You could call it the handbook of permaculture politics, written by the founder of the Transition town movement, arguably the only modern movement which is addressing these crucial issues in a practical way.

So what’s there not to like? The thrust of this book is towards inclusion, positivity, and alienating nobody, a transition towards a localized future so enticing that opposition will simply fall away, corporations naturally dissolve, and governments join in the party. It has the commendable confidence of success that reflects its middle-class nature, but I’d like to see a bit more political bite.

The book is divided into three parts; the Head: where we are now and why local is best; the Heart: the psychology of peak oil and change; and the Hands: how to create a successful Transition Initiative in a town near you. The first part is rather gloomy. As Hopkins says, “The trends at the moment, I grant you, really are not looking good”. But he remains optimistic that we can overcome our oil addiction and “business as usual” lifestyles, because “once a society decides to move, things can happen very quickly.” Indeed. And what follows is the blueprint for that happening.

The second part, looks at the reactions people have when they wake up to the cruel truth of peak oil, which Hopkins terms “post-petroleum stress disorder”. He argues that the first part of Transition needs to include “pre-trauma counselling” because “I think it is naive to expect that we could give someone a DVD of *The End of Suburbia* or *An Inconvenient Truth*, and expect them to be unaltered by the experience.’ Now, I like the fact that Hopkins and this movement have put psychology on the agenda, but I reckon I’m already suffering from “petroleum stress disorder”. It’s not the aftermath that’s doing my head in, it’s the here and now.

Hopkins interviews psychologist Chris Johnstone about “oil addiction” — the idea that this society is addicted to the oil lifestyle in the same way that some people are addicted to heroin. But the question “why are we addicted?” doesn’t come up. Levels of depression and



THE TRANSITION HANDBOOK

From oil dependency to local resilience

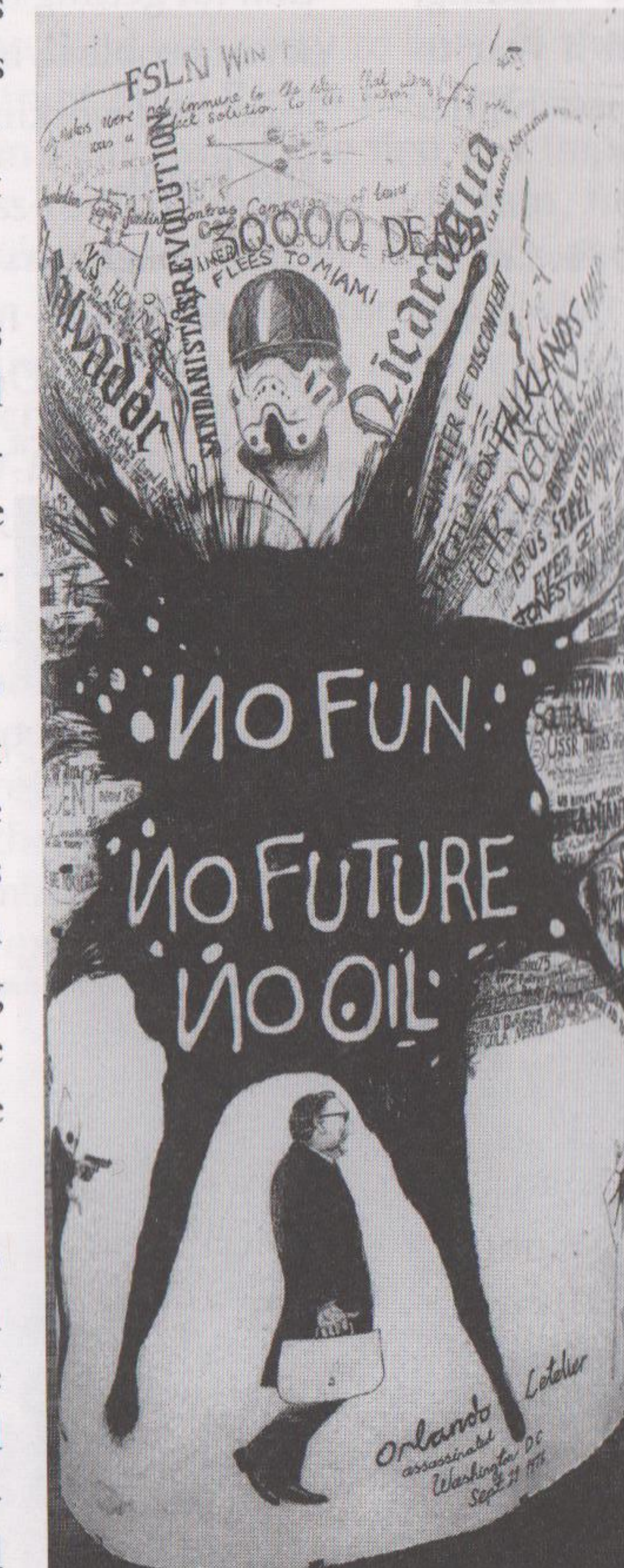


Rob Hopkins

anxiety are high in Westernized nations. Maybe lack of direct access to land and nature, or lack of community in a competitive environment, or simply “affluenza” as Oliver James calls it, have something to do with it? For Hopkins, personal empowerment comes from joining a Transition Initiative, because people really do care, underneath. I hope this is the case, but sometimes the pain people carry caused by alienation, homelessness, childhood abuse, etc, makes them despair, and cling harder to their self-medication: the reality of peak oil doesn’t even register.

Section three, the Hands part, contains good ideas for revolutionary action (eg local food, local business, local monetary system, or taking healthcare back into our own hands). There are outlines of how to organize your own Transition Initiative “planning for your own obsolescence” or write an “Energy Descent Action Plan” for your area. There are accounts of the many other “viral” initiatives in the UK. Transition Town Totnes are doing great things, including setting up their own local monetary system, bulk buying solar thermal kits for 50 households, working with an allotments group to lobby the council for more allotments, and creating a “garden share” scheme.

Hopkins seems to be advocating a sort of Trotskyite-style infiltration of existing power structures, a revolution from within. “The Transition model” he says on his website “is designed to come in under the radar . . . It is my sense that the tools the environmental movement has had thus far (campaigning, lobbying, protesting) are insufficient for the job in hand, that of navigating a society through energy descent. The idea of things being to make the process as unthreatening as possible . . . in such a way that it is perceived as positive, fun and unthreatening.” Well, on second thoughts not very Trot. But this may explain why Hopkins doesn’t appear to mention the word capitalism once in this book — the nearest I could find was “economic globalization”. It seems that the idea is for people to be aware without really being conscious. This is very much the thrust of the rest of the book; which also includes touchy-feely “talk to the person next to you with post it notes” games to encourage community spirit at meetings and talks (although frankly, they do my head in).

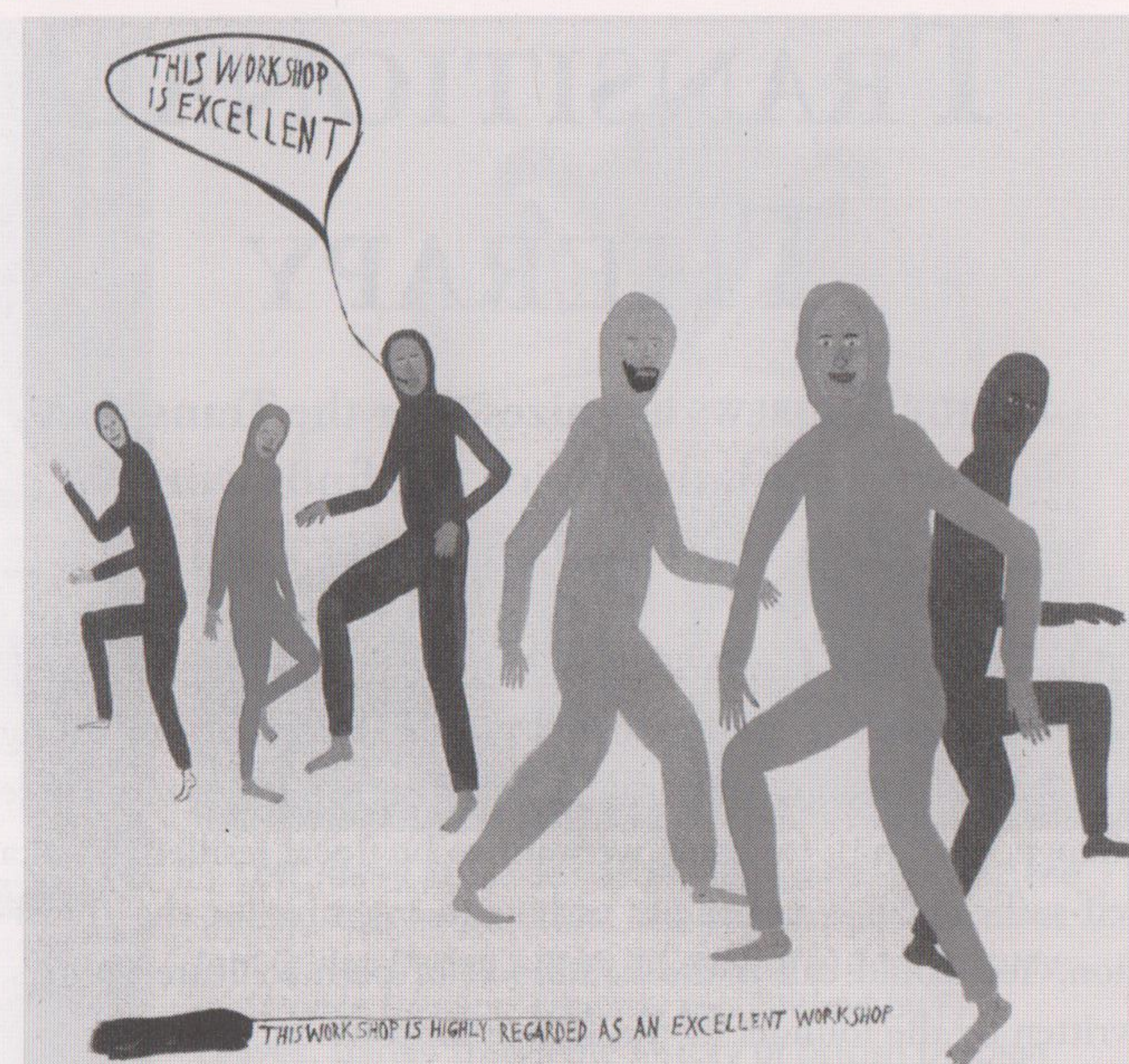


Dominic McGill

Bristol, the Transition City I live in, is at present threatened with losing 90 acres, or 2.4 per cent of its 'low recreational value' parkland in return for an estimated £100m. Transition Bristol, admittedly a very new organization still writing its EDAP, has so far kept schtum. The Transition initiative has brightened up Bristol's greenies, but I wonder how a very very non-violent revolution will be able to secure the land which is vital for successful post-petroleum societies, and for sane and equitable human communities. Bristol's anarchist activists are focused on protesting against climate change, Israel in Palestine, No Borders, Colombia. There isn't much of a cross-over between the two groups, the anarchists and permaculturists, although both come broadly from the same social milieu.

The political scientist Ronald Inglehart coined the term "post-materialism" in the 70s, to describe the effects of affluence on Western politics and society. Post-materialists have their basic needs met, are educated, and secure in their jobs and communities. This means they can "self-actualize" or begin to think about other things outside of their daily survival. But affluence means oil abundance, and the "post-materialists" that this affluence breeds are the middle class people who protest against it. This is the hippy generation, and their heirs the permaculturists, who have evolved so fluffy that I just couldn't read the rest of this book properly, even though I know it makes sense.

There is something in the Transition initiative that seems to be missing, a failure to locate the movement within its social, economic, and historical perspective, and therefore to find an answer to many of its basic questions — including the one I



Chris Johanson

have heard asked a few times in Transition Bristol contexts: "why aren't there any black people in this movement?"

On the other hand, I know from my own experience that the establishment and its supporters don't like it when you propose "direct action" as a last ditch attempt to save community resources. It doesn't sell books, or ideas. Here's hoping that this book will provoke the silent revolution we all need.

Rob Hopkins, *The Transition Handbook*, Green Books, 2008; www.transitionculture.org

UP AND RUNNING AGAIN

Communities have a reputation for going pear shaped; but they also have a capacity for reinventing themselves. SOPHIE ANDREWS pays a visit to Radford Mill, while JYOTI FERNANDES reports on Monkton Wyld.

"What would you do with a farm house, straw bale building, conference centre, and a load of sheds? We have got a year to show what we are going to do with it and then the possibilities are endless."

So say the new occupants of Radford Mill Farm. Five miles from Bath, Radford Mill has been an organic farm, run along organic, broadly hippy principles for over 30 years. It already has a reputation as a place for events, conferences, and parties, and supplier of local veg and yoghurt to Bristol through the farmer's market and the Radford Mill Farm Shop in Montpelier. Until recently, it was one of the few places providing a commercial income from hand-milked cows

After internal problems caused the farm to run to a standstill, it was squatted in 2006 when it's disgruntled soon-to-be-ex-tenants had their mates to come stay, who just happened to be seasoned activists. When the place was evicted last year, its owner, Richard Fox, began looking to rent it to another project or farm manager.

From February, a new group has taken over the running of Radford Mill. This new project is the brain child of Deasy Bamford, who is something of a local dignitary on the community circuit in Bristol, with a reputa-

tion for getting things done. Alongside Deasy, there are currently seven people living at the farm, all paying rent to cover the yearly lease, and working towards the farm eventually paying their bed and board.

The group's plans for the farm include food production (vegetable and meat), local food links, catering, accommodation, and also Deasy's original vision as an urban-rural meeting point — an idea she has been culturing for 20 years, and which is now beginning to bear fruit.

"I grew up in the middle of nowhere, but with loads of people around," she says. Her parents ran a mixed dairy farm come B&B in North Cornwall. "I'd always wanted to set up a free school, or an artist's community. I was always a little bit radical, a bit lefty, a bit outspoken." Deasy arrived in Bristol in 1989 after living in the country, in relative isolation. At first, she says:

"I used to watch the kids on Albany Green [St Paul's], and they used to, like, throw a stone, and then they'd be in trouble, and then the police cars would come round, and all they'd done was throw a stone. And I can remember, rolling boulders, down the valley, with my brothers, watching saplings smash, as they bounced, these boulders, down the valley



Deasy and Martin, another inhabitant.

Monkton Wyld

Monkton Wyld Court, a community which has been based in a Victorian house with 11 acres in Dorset since the 1960s, is also undergoing a rebirth. The structure of the community has evolved from a small school to a holistic education centre focusing on spiritual personal development courses, but has recently taken a new turn. The charity had been losing money under the arrangement and the "new age" stream of courses no longer seemed so popular. There was a general feeling that the consensus style community arrangement was too inefficient to manage the business side of things well enough to keep the place financially afloat. The trustees dissolved the volunteer residential community to start again with a new direction focused more on education for sustainable lifestyles, with courses in low impact living, practical land use skills, permaculture design and possibly a small independent green school. The community now has a team of paid staff who will manage the volunteer residents.

This new approach will bring with it a number of challenges, the main one's being that the cost of hiring staff put the expenses of running the place up much higher so the range of programmes will generate much more money than it ever did before. The other is the challenge of running a community with a built in hierarchy. It remains to be seen whether or not the efficiency of having a set of managers will justify their expense — but the place has great potential.

Monkton Wyld Court need more volunteers at the moment. If you would like to join in this exciting new project contact Ali on 01297 560 342. Jyoti Fernandes

sides. And nobody knew a blooming thing. As a kid, you do that in the morning, and then come in and have your lunch. These kids were being criminalized just for being kids."

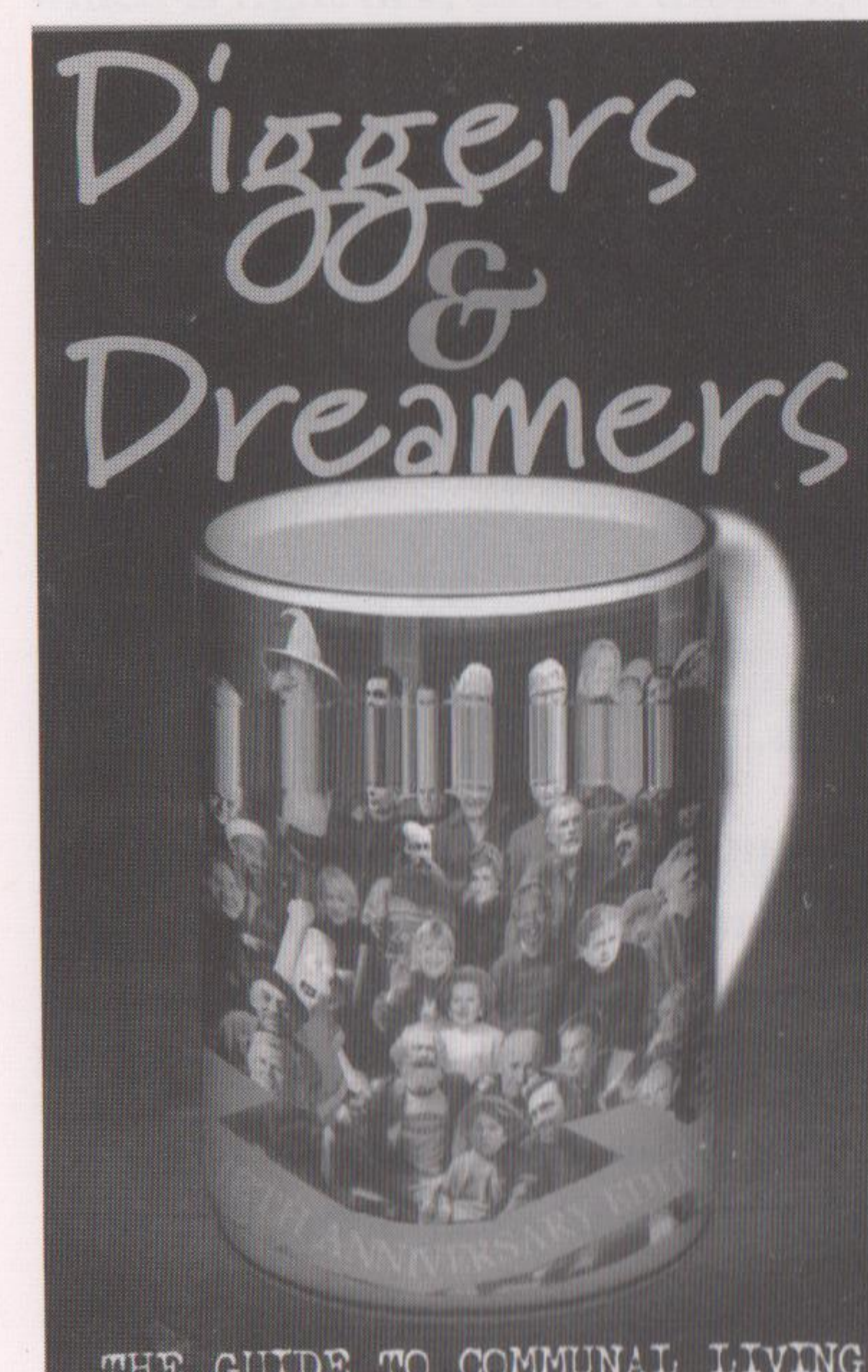
"It's about lack of space," she continues. "If you grow up in Albany Road you've got no horizon, 'cos across the road is another set of houses, the top of the road is more houses, and down the road still more. There's no trees in the street; your horizon is limited. So it's no wonder that you don't look up and think "oh! I can go where I like."

Everyone now living at the farm there feels that they are finally doing what they have wanted to do for a long time, and the three I spoke to seem almost relieved to be finally out of the city. Even the cat's ADHD is cured.

Radford Mill is already becoming a working farm again — growing veg, and playing host to groups from outside who want to use the facilities. They are forming good relationships with the neighbouring farmers, who have helped them out as they get on their feet. They plan to grow animals, but not to start up a dairy herd. But what about Radford Mill's working dairy? "That was empty when we got here, there's no equipment any more" says Reuben, the Farm Manager. Reuben talks about his cauliflowers and a teenaged urban girl who came down with a group a week earlier. "All they did was digging and weeding the veg up there, but she said it was the best day of her life."

With its closeness to Bath and connections with Bristol, how does the new project fit in with the Transition Town programme? The community is thinking of getting horses, could they be providing a transport solution to off-set peak oil. "No one out there will be bothered about peak oil until the shelves are empty in Tesco," says Reuben. "We'll link to Transition projects, but it's all about what we are doing now, not about fears for the future."

www.radfordmillfarm.co.uk



The new *Diggers and Dreamers* for 2008-9 has been published. The guide to communal living in Britain, which has been appearing bi-annually for two decades, is back to its original A5 size, after a brief life as a mini-pocketbook. This means that as well as the 107 pages of listings there are articles on various aspects of communal and low impact life by people such as Dennis Hardy, Chris Coates, Bill Metcalf and Simon Fairlie.



Brian Richardson

The Land was sorry to hear of the death of Brian Richardson last year. Brian built two of the first low impact grass-roofed buildings in Britain, first at Knockholt, Kent in the 1950s and then Romilly in Herefordshire where he lived with his wife Maureen. He described the building of Romilly in *The Self-Build Book* (Green Books 1991) co-written with Jon Broome. He was also a tireless planning campaigner, helping gypsies and marginals with planning applications and appeals, and submitting proposals on low impact building to the Herefordshire plan on behalf of Friends of the Earth (see his article in C7 News number 3). He is also remembered for his exceptionally fine home brew.

Taste Your Own Medicine

In Merseyside a 58 year old grandmother has applied for planning permission to demolish Tesco boss Terence Leahy's mansion in Hertfordshire. Dot Read is retaliating against plans to demolish her home, and 70 others, to erect Everton's new football stadium . . . and the inevitable Tesco supermarket. She commented; "I have been living under the threat of losing my home for 18 months now and it is very stressful. I want Sir Terry to have a taste of what we have to put up with." She plans to make Leahy's estate a public amenity: "It's going be a nice community area. Trees and ponds and a little play area for the children, somewhere for the old people to go and sit and relax."

Proper Job

To see how Americans do direct action against city planners go to <http://www.youtube.com/watch?v=PZbG9i1oGPA>

Left: A banner from a community campaign to prevent the Ministry of Culture, Media and Sport from selling off 3.6 acres of land attached to the British Library site at St Pancras to the highest bidder. Locals want it for social housing and community space

ENGLISH PLANNING DISEASE SPREADS SOUTH

Many British people wishing to live a low impact life have joined the "Spain Drain" or moved to other Mediterranean countries where planning rules have been less obsessively pursued than in the UK. In France the recipe for living *la vie marginale* has always been to get on well with the local mayor.

But now the English planning disease is spreading to France where a new wave of oppression has been instigated against growing numbers of shack and yurt dwellers. Increasingly the DDE (Directions Départementales d'Equipements), the regional bureaucracies in charge of *urbanisme*, as the French call the planning system, is interfering with local planning decisions and taking power away from village mayors.

In the Pyrénées Orientales, (P-O) the authorities have embarked on a veritable crusade against shack dwellers. It began with a 32 page report published in 2006 called *How to Deal with the Phenomenon of Shackery on the Languedoc Roussillon Coast* published together with 100 pages of Briefing Papers explaining how to carry out the "fight against shackery" (*lutte contre la cabanisation*).

This approach resurfaced soon after in a *Good Practice Guide in Regard to the Fight Against Cabanization* sent out to all 216 village mayors in the P-O, and signed by the Prefect and six other prominent bureaucrats, including a representative of EDF (Electricité de France). According to the website www.macabane.info, the good practice guide skips over the original reports' advice to "understand" and "diagnose" the phenomenon, and simply counsels mayors to enforce against illegal encampments — with an emphasis on demolition. Mayors are also exhorted to ensure that settlements are not connected to electricity, water or telephone services. Macabane states that the "good practice guide" has no legal standing, yet is presented to the mayors as though it were a legally binding directive.

This is not the first time that Mediterranean authorities have targeted shackery. In the 1960s and 1970s many coastal plotland settlements were demolished for hotel development, and derelict



Yurts pitched in front of the Paris Stock Exchange, March 2008



sites were raided by hippies who recycled the building materials in marginal communities in the hills. At Bourdigou, a beach plotland settlement near Perpignan, demolished in the early 1970s, there was fierce resistance, and bulldozers were petrol bombed. But now the incentive is not so much hotel development as sanitization of the environment to keep it nice for the tourists. Coming from a planning system which allows concrete villas to spread like a disease on the outskirts of every village, encourages huge retail sheds in the middle of nowhere, and is currently presiding over the evisceration of small town centres in favour of "zones industrielles", any such concern for the environment is sheer hypocrisy.



Joe Sacco

Meanwhile, in the departement of Lozère, in the Massif Central, Eric Baret, who grows vegetables on his seven hectare holding to sell at the market in Florac, was in March 2008 hauled up before the courts for constructing and living in an illegal yurt. About 100 people demonstrated in his support at his trial in Mende, where the DDE, who had instigated the prosecution, failed to turn up. The group Yurtao comments:

"Recently yurts in the Cevennes have been the target of intimidation, accusations and legal harassment. The DDE refuses to accept that individuals and families should live in anything other than official bricks and mortar and sometimes, with the help of mayors or malicious neighbours, brings legal actions against yurts on the pretext that they are 'illegal constructions'. It cannot be repeated too often: in France, yurts do not need planning permission for their erection — they are tents."

The French housing crisis took a new turn in March when Joe Sacco, founder of the alternative shelter network HALEM died as a result of injuries sustained in a fire in a squat in Rennes he was visiting on Good Friday. The circumstances were suspicious. A figure was seen escaping from the scene when the fire started; the flames were of a sudden and exceptional intensity; Joe did not seem to be seriously burned, but died after being taken to hospital in an ambulance, with none of his friends allowed to accompany him; and the municipality came within a few hours and bulldozed the remains of the building before anybody could recuperate their possessions, or search for clues as to the cause of the fire.

This summer, French housing activists will be organizing "journées d'été de l'habitat choisi" — a summer gathering of alternative housing.

- Halém, 06 18 94 75 16, halemfrance@halemfrance.org, www.halemfrance.org
- Ma Cabane, 04 68 05 69 40, contact@macabane.info, www.macabane.info
- <http://yurtao.canalblog.com/>

APPEALS AND APPLICATIONS A PLACE IN THE COUNTRY?

The static caravan in the photo below is the home of Pat and Deanne Fitton. The circle inscribed on the aerial photo shows where it is sited — right next to the 24 acre Kanes chilled factory at Littleton, near Evesham. But when the couple contacted Chapter 7 the Fitton's were facing an enforcement notice on their home because, according to Wychavon DC, they are living in "open countryside".

When the Fittons bought their yard in 1983, the Kanes factory was not much bigger than their own property. Since then Kanes, set up in conjunction with pan-European "logistics" company Christian Salvesen, has been allowed to mushroom, whilst the Fittons have had to put in six different planning proposals to replace or improve their own premises, where they run a Morris Minor parts and restoration business. All but one were refused and so were their applications to build a house or place a mobile home on the site, although for six years their son was living there in a mobile home, and even paying council tax.

In 2001 appeal Inspector, TJ Morgan, turned them down on the grounds that the mobile home was "at odds with the broader rural setting and thus unacceptably harms the character and appearance of the locality". Morgan was also concerned that "the residential use is likely to result in vehicle movements outside working hours" — though the factory operates 24 hours, seven days a week, and now has two 24 hour car parks, one of which is right next to the Fitton's mobile home.



The Fitton's mobile home is bordered on three sides by the Kanes chilled food factory. Its site is indicated by the black circle.



How They Grind You Down

The treatment described by this retired smallholder is by no means unusual in the UK.

In 1996 my husband and I bought our farm with approximately 25 acres. We expected to continue our free range egg business we brought with us. Within weeks of moving in we were bombarded with every kind of complaint from the council, we were inspected by every authority from animal welfare to environmental health. We were told to stop work on our barn repairs and to submit plans to keep hens. We were forbidden to put 2000 birds in our top barn which was half our expected income gone. We were forced to employ architects and lawyers and planners. It cost us all we had and got us in great debt, not to mention the mortgage we could

not pay. Eventually, after endless enforcement notices, public appeals and more, the council accepted that there had always been livestock on this farm. We were able to keep hens and the Inspectorate ordered the council to pay us several thousand pounds costs.

All this took years. I had cancer and my husband became ill. We sold our farmhouse and ten acres to pay off the bank, the mortgages and the lawyers. We kept 15 acres and the top barn, with hens running free in the orchard. We also kept a small barn equipped as a workers rest room which we hoped to change to residential use.

(continued on next page)

AN EXEMPLARY APPEAL DECISION

Three cheers for Inspector B J Sims, for his well-drafted decision on the enforcement appeal against residential caravans at Cabra Farm near Collumpton in Devon.

The appellants keep a variety of livestock on a mere 20 acres (40 angora goats and sheep, an Arab stallion and four mares, two sows with growers and 400 laying hens), and until recently lived in mobile homes on site. However, Mid Devon District Council placed a stop notice on their residential activity and the family were forced to move into council funded accommodation some distance from the site. The use of a stop notice in these circumstances is most unusual.

The appeal was a hearing and the appellants did not provide an appraisal from an agricultural consultant, nor even a proper financial business plan. This might have led many inspectors to dismiss the appeal for lack of evidence, but the local authority apparently didn't provide one either. Sims, left to draw his own conclusions, remarks:

"Like the Council, I think it would have been reasonable to submit a three-year projection in the form of a financial business plan detailing all the projected items of expenditure and income, the better to demonstrate likely cash flow. At the same time planning guidance nowhere expressly demands such evidence, given that true three-year accounts, as would be required by PPS7 to justify a permanent dwelling, can obviously not be produced in



(Continued from previous page.)

In Spring 2003 my husband, aged 57 became very ill and was unable to work any more. We let the birds go and ceased trading. Unable to apply for change of use as we had no business, we had to endure another enforcement notice, appealed and were turned down in 2004. To appease the council I complied with most things, but continued to live here, as we had no money left and nowhere to go, nursing my husband till he died in January 2005.

I am still living in the barn, In 2007 I applied for a certificate of lawfulness for a beautiful old circus caravan we have had on the farm since 1996, but they turned me down. I also applied again to change the use of the barn to residential use with a personal permission, and that was turned down at appeal in 2008. The inspector concluded that the "personal circumstances of the appellant would not outweigh the harm to the character and appearance of the area. Now my planner wants to apply for a live/work unit at my property, based on my beekeeping.

I am deeply upset to be told I cause harm to the character and appearance of the area when I have done all I can to enhance and care for my property. There have been no chemicals on my land since 1996. My orchards are full of birds, I have an area fenced off at the top of my land for wildlife and badgers. I have planted many trees and have an old geese pond filled with fish, toads, frogs, newts and the odd heron. I keep bees. I love this place. My loved one's ashes are buried here.

I am at my wits end with savings almost gone and my pension not enough to keep warm on, let alone keep fighting the council. I have nowhere to go, I am alone and I must keep trying to stay.

advance, and the details of the business might well vary over time in response to changing circumstances."

Wise words indeed, that many an appellant might wish to cite when presenting their own business plan. In fact Sims is quite capable of making his own assessment. He clearly has some understanding of farming and is fully aware that the 20 acres are very intensively stocked:

"Such is the apparent intensity of this unusual compact and varied enterprise that I was at pains to verify that the ultimate stocking rates are reasonable."

However the council didn't field any evidence showing that they were unreasonable and so the Inspector cautiously accepts "the unchallenged professional advice of the appellants, based on established ratios, that there is just over sufficient land available for the several enterprises" even allowing for 4 hectares put aside every summer for hay. The Inspector has no problems identifying a functional need for the management of all these progenating livestock. He is more worried about the viability of the holding. The £12,400 that the farm expects in net profit after three years, is less than a farmworkers' minimum wage, and is over-reliant on foals from the posh horses; but Sims accepts that:

"the appellants can expect to be self-sufficient to a considerable degree and to survive at a subsistence level, as contemplated by PPS7, with the wider benefit of contributing to the local rural economy, assuming the project succeeds."

Will the project succeed? There certainly are doubts whether the stocking rate can be maintained (though hay could be bought in) and it will demand considerable skill to derive a family income from livestock on 20 acres. But Sims' assessment shows that he has a good understanding of the ways in which small farming enterprises manage to make ends meet:

"The projection is optimistic in that it relies on regular breeding and selling patterns for horses that are highly sensitive to change and misfortune, such as a mare failing to hold service or a foal not developing in size, colour or conformation to realize the expected premium return within the year as assured. These contingencies would seem to go beyond the level of fluctuation normally to be anticipated, albeit there is some reassurance in the wide variety of products it is proposed to promote.

"Equally, though, the projection can also be regarded as a pessimistic under-estimate of income in that it relies upon gross margins based on the farming industry as a whole, without taking into account the premium that can be realised in specialist and local outlets. These are evidently being fostered by the appellants who, with diligence, should be able to maintain a loyal custom base through a high degree of personal service. This factor could lead to a much higher return in some sectors to compensate for occasional losses elsewhere.

On balance I conclude that the farm can be regarded as having been planned on a sound financial basis, sufficient at least to justify a trial period of three years."

SMALLHOLDERS

PERSONAL PERMISSION

In the last issue we described how smallholder Josie Day was facing eviction from the Somerset village where she has lived for over 60 years. She was finally given personal planning permission early this year. Her application had been refused and delayed nearly two years because South Somerset District Council had insisted that she apply for temporary permission, when she had quite correctly applied for a personal condition. Who knows what the council was thinking? The purpose of temporary permission is to test new enterprises, whereas Josie has been farming all her life and needs a place to work and retire into. That's what personal permissions are for. Anyhow, we are glad that the council has at last come to its senses.

GLUTTONS FOR PUNISHMENT

Despite having been pasted by Fivepenny Farm at their public appeal, West Dorset District Council are coming back for more. This time they have refused permission for a temporary caravan to Dan Newbery and Natalie Paterson who run a box scheme near Dorchester. West Dorset are once again fielding Peter Williams, the consultant from Reading Agricultural, who famously threw the Fivepenny Farm appeal into confusion by suddenly admitting that, contrary to his submitted evidence, there was a functional for one of the two couples to live on site.

STOP PRESS: The appeal was allowed — with functional need accepted for a grower with no livestock. APP/F1230/C/07/2055628 Advocate Mr Anderson, instructed by Environmental Law Foundation; agriculture witness Hugh Chapman.

SEIZE THE TIME

Steve Friend's house at the Trading Post, pictured on p.58, is still in planning limbo. South Somerset DC sat on his retrospective application for over a year, mulled over it for another six months, and now are demanding a re-submission with a new agricultural appraisal. Steve had previously obtained temporary planning permission for a mobile home and renewal after three years on the basis of his need to live on site; his five acre horticulture holding, together with the organic shop he runs with Sue Hasel, is well patronized, financially successful and employs several full-time and part-time workers. But the planners are piqued because Steve built his thatched six-sided, wood framed house before applying. He told us he did so because he knew that the time was right and the inevitable bureaucratic wrangle would extinguish his creative flame.



Half-baked: Herefordshire planners enforced against the caravan — but forgot to include the cottage.

HALF-BAKED ENFORCEMENT ORDER

When Andy Trim and Jennifer Pottinger repaired and moved into a rented derelict farmworkers cottage near their four acre holding producing vegetables for an organic box scheme, Herefordshire planners enforced against them. This was despite the fact that Andy had been successfully growing vegetables on 12 acres on a neighbouring farm for a number of years. Andy and Jennifer appealed, and won on the grounds that the enforcement notice was directed against a caravan, when the main unit of accommodation was the cottage (see photo). However just before the appeal was heard the council issued a further enforcement notice on the cottage, so the couple will have to go through the appeal process all over again.

APP/W1850/C/07/2045404 and 2045405; inspector Pete Drew; appellant's advocate Alison Heine; agricultural appraisal Rebecca Laughton.

GROWER FACES UNENDING HASSLES

Mark Simon is going to public inquiry to appeal against refusal of temporary residential planning permission for his permaculture box scheme holding at Trevalon in Cornwall. Caradon DC pig-headedly refused to accept that digging a pond was permitted development rights — until Mark applied for a certificate of lawfulness. They are now hassling him about caravans for his seasonal workers.

NO LIGHT AT END OF TUNNEL

Anthony Cutajar and Jenny Carr's application for a residence at Coed Twnnel, their 88 acre woodland holding under Pembrokeshire's low impact policy 52, was lodged last July, but the planning department is still consulting and deliberating.

IS THIS A RECORD?

Alan French, who runs a nursery in Devon with £40,000 turnover, is facing an enforcement appeal on a static caravan which has had continuous temporary residential permissions over the last 20 years.

UNBALANCED DECISION

A proposal by David Osbiston and Susan Spencer for residential permission on their permaculture holding, Wormhill Ley, was turned down at appeal — hardly a surprising result considering this was in Dartmoor National Park, it was a written appeal and it was not retrospective.

Whilst acknowledging the benefits of permaculture, the Inspector, CJ Ball, concluded:

"Many people would like to live in the moorland countryside in a sustainable way and the arguments advanced in favour of this scheme, if repeated, could result in many more dwellings in the open countryside. The cumulative effect of this would be particularly harmful to the character of the moorland designation and would undermine the purposes of National Park designation. This would be a substantial penalty which, in my view, would outweigh the limited global benefits arising from the addition of a dwelling to the site."

One can appreciate the Inspector's concern for the character of the moorland, but here he is weighing the cumulative harm of many dwellings against the global benefits derived from one — perverse reasoning which ought to have been challenged in the courts. The harm from many dwellings should be measured against the benefits from many dwellings. We suspect that this logical sleight of hand probably lies at the root of many judgments relating to "cumulative harm".

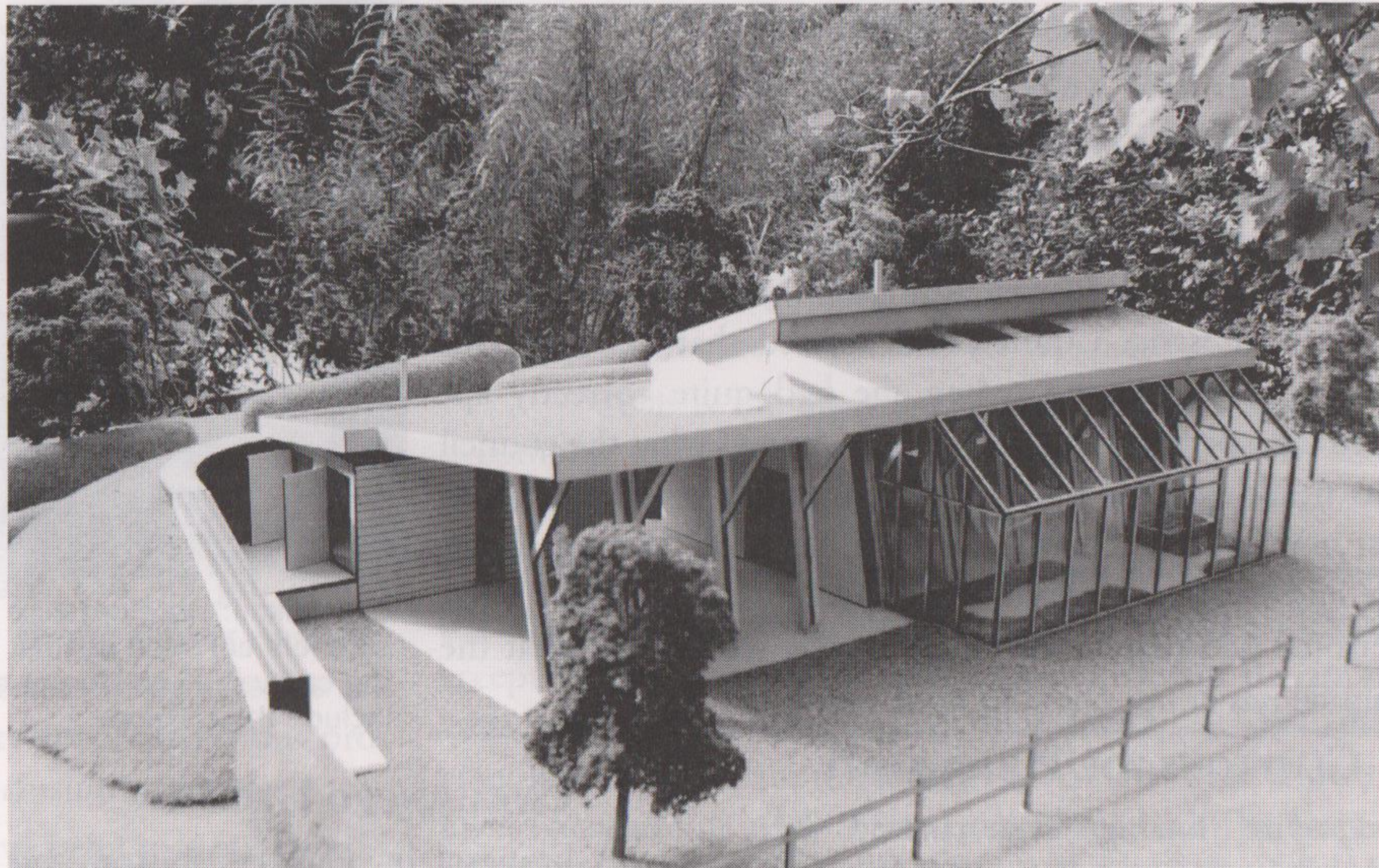
APP/J9497?A/07/2049653;

KARUNA

Karuna, a permaculture holding in Shropshire is currently preparing for an enforcement appeal.

LAMMAS

After their first application was turned down for insufficient detail, Lammas, the proposed smallholding ecovillage in Pembrokeshire put in an amended application on March 17. The first application filled an entire wheelbarrow; the second, containing 150 illustrations and 1200 pages of text would have required two barrows — so it was submitted electronically. Never in the field of human history have a bunch of drop-outs drafted so great a volume of business plans, spread sheets, surveys, reports and assessments. It can all be viewed at the Lammas website, including the cash flow forecasts and house and land designs for all nine proposed plots, and the design for the community building (right). This is an excellent resource for anyone else wanting to put in their own applications elsewhere.



Model for the Community Hub at Lammas

GROUP PROJECTS

12 CARAVANS REFUSED

A retrospective planning application for 12 residential caravans on a farm “to house the homeless” has been turned down after an appeal hearing. The Inspector, Gerry Hollington, agreed that there was a substantial housing need, but turned down the application, partly on the grounds that it was two miles from the nearest settlement, Modbury, down tortuous lanes with no public transport. The appellant had “laudably” offered to provide a minibus service, but since this was not secured by a Section 106 agreement, the inspector could not rely on it. Hollington’s other objection was the landscape impact, which had been mitigated by the erection of a fence which was itself “unsightly”.

It remains to be seen whether there will be an enforcement notice, followed by an enforcement appeal. If so, Chapter 7 would recommend taking the matter to a public inquiry.

APP/K1128/A?07/2042746

STEWARD WOOD

The low impact community in Dartmoor National Park, have had their application for renewal turned down, and are preparing to go to appeal. They were given temporary permission in 2003, after two appeals and a high court challenge. The woodland community is thriving with eleven adult members plus kids. Not everybody makes their living from the land, but the community argues that some members who work in low-paid social and environmental jobs outside the community could not do so if they had to pay rent on a house in the nearby town.

FUTURE ROOTS

Future Roots have secured an option on a site on the edge of Langport for their affordable housing project, based on self-built timber framed mobile homes, and are now negotiating with the district council. With only 1800 people, Langport is one of the smallest towns in Britain. A different range of policies apply from the Rural Exception policy that would apply were the site on the edge of a village.

COMMON GROUND

This self-build affordable housing project in Norfolk, was recently refused planning permission by Waveney DC because of its location, and the fact that some participants are not local. The project comprises ten homes plus a communal building and a barn converted to workshops on 24 acres of grade 1 land, with possibilities for on site land-based livelihoods. The group, who have not moved onto the land, are considering whether to resubmit or go to appeal.

Reinventing County Farms

The New Economics Foundation is spearheading a project called Public Land for the Public Good whose objective is to: “influence policy and practice in the UK relating to access to agricultural land held by public and semi-public organisations” particularly for local food schemes. Their initial document states:

“Up and down the country there is a great deal of agricultural land that is presently held by public and semi-public bodies. These include local government authorities, the Ministry of Defence (144,000 ha), Crown Estates (110,000 ha), The National Trust (250,000 ha), The Church of England (47,000 ha) and The Cooperative Group (8,900 ha). From the point of view of local and sustainable food initiatives the county council farm estates are of considerable interest.”

Plotgate

The Plotgate project has acquired 23 acres of land next to a Barton St David, in South Somerset, and is drawing up a planning proposal for 8 affordable, self-built, live-work homes, with access to land, and a couple of productive smallholdings. The land is part of a fragmented County Farm, sown to a ryegrass and clover ley, and sited close, but not contiguous to the development zone, between a horseshoe factory and an out of use scrap yard. The County Council has so far declined to sell a third plot which is contiguous with the village’s development zone and hence highly suitable as a Rural Exception Site.

Barton Farm

Still in South Somerset, a group of villagers at West Coker is drawing up a plan to use 140 acres of grade 1 county farm land. This is what remains of another farm that the council asset stripped by selling off the farmhouse and barns; the fear is that the county council are holding onto it in the hope that the district council will allocate the land for an extension of Yeovil’s westward sprawl. The villagers are drawing up a proposal for a revival of West Coker’s hemp and flax industry, affordable housing, local food projects etc.

THE LAND BOOKSHOP

The Potato Store, Flaxdrayton Farm, S Petherton, Somerset, TA13 5LR
01460 249204 — chapter7@tlio.org.uk

All prices include p & p. Cheques made out to The Land.

- **Cotters and Squatters**, by Colin Ward, Five Leaves 2002. £11.00
A study of the “one night house” and other squatter houses throughout British history.
 - **Arcadia for All**, by Dennis Hardy and Colin Ward, Five Leaves, 2004 £15.00
The only history of the plotlands. “The best book ever written on the UK planning system, you will never look at Peacehaven or Basildon in the same light again.”
 - **A Rough Guide to the Farming Crisis**, by Kathryn Tulip and Lucy Michael, Corporate Watch. £3.00
- CHAPTER 7 PUBLICATIONS**
- **Sustainable Homes and Livelihoods in the Countryside** £3.00
Chapter 7’s report advocating changes to planning policy in the countryside. 52 pages
 - **Low Impact Policies for Sustainable Development in Dorset** by Chapter 7 £2.50
A useful template for low impact policies to submit to your own local authority. 28 pages.
 - **Food for Thought** by The Balham Hill Farm Interim Collective £2.50
A Proposal for Maximizing the Potential of Balham Hill and other County Farms for Local Food Production, 19 pages
 - **How to get Planning Permission to Live on the Land** £7.50
Two page essay, by Mike Fisher together with copies of his and Mandy Goddard’s successful applications for planning permission on their horticultural holdings.

BACK ISSUES of THE LAND

Issues 1, 2, 3 and 4
£3 each including postage

LOW IMPACT DEVELOPMENT by Simon Fairlie

This summer we will be publishing a new facsimile edition of this book (the original computer scans were lost) together with a new introduction.



DIY PLANNING HANDBOOK

Chapter 7’s 90 page guide to the planning system for smallholders, caravan dwellers and low impact folk is available at £12 to subscribers of *The Land*, or £16 to non-subscribers, including postage.

It includes briefings on

- Introduction to the Mysteries of the Planning System
- Should I Move on First or Apply First?
- Putting in a Planning Application
- Agricultural and Non-Agricultural Dwellings
- Permitted Development Rights
- Caravans
- Certificates of Lawful Use: The Four and Ten Year Rules
- Appeals
- Helpful Appeal Decisions
- The Human Rights Act
- Enforcement
- Consultancy and Advice
- Index and Glossary

PLANNING ADVICE AND LIBRARY

Chapter 7 provides free planning advice on the telephone for smallholders, caravan dwellers and other low impact and low income people with planning problems. We have an extensive library of planning law and policy documents, appeal decisions and case law, which we can photocopy at around 20 pence per page. Please phone us, on 01460 249 204.

“Dating Agencies”

Here are two new websites designed to put people seeking low impact self-build projects in touch with each other, and with people with land.

Land Match grew out of the successful meeting of about 60 people at Crewkerne, Somerset in February. Its website offers a forum and some useful planning documents www.epfsolutions.org.uk/landmatch

Ecomotive, an organisation aimed at helping people find land on which to build their own affordable and sustainable houses, has just launched a free online web resource. The website is run by Jackson Moulding who built his own environmentally friendly house as part of the Ashley Vale Action Group in Bristol. www.ecomotive.org

Somerset Live/Work Network

A proposal to create a cluster of live-work eco-units.

Contact: Andy Peters, 07771 964180 somersetlivework@aol.com

CLIMATE CAMP

Kingsnorth Power Station
3-11 August
Low Impact Living
High Impact Direct Action
Chapter 7, and The Land will be there
www.climatecamp.org.uk

New Allotment Organization

Ayesha Wilkinson of the newly-formed South West Counties Allotment Association writes:

“We are a non-profit organisation run by volunteers who all have allotments and who are passionate about them. In 2001, in *The Guardian*, Sophie Andrews was quoted as saying “The national society is increasingly unrepresentative of allotment holders. It wants to hold on to power without knowing what to do with it.” We totally agree with this and have set ourselves the task of becoming the new voice of allotment gardening across the UK. We do not see what the NSALG are doing to protect our sites and so many more have disappeared over the past months and nobody seems to be stopping it. We are also able to offer people who become Friends of the SWCAA Public and Product Liability Insurance for just £2 per year. Please have a look at our website: www.allotmentssouthwest.org.uk