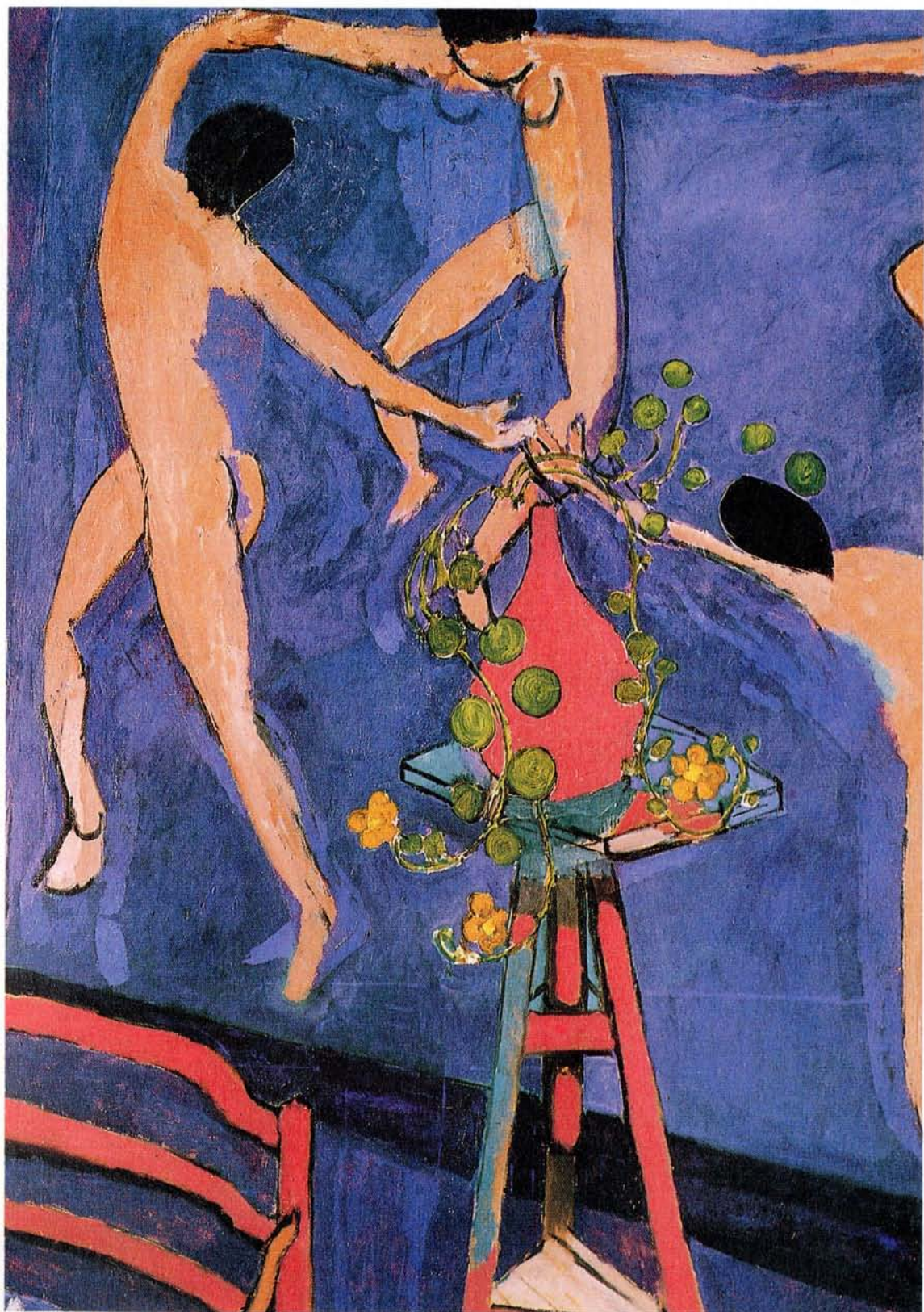


The Ecologist

Vol 19 No 5 1989

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The Myth of Sustainable Logging: The Case for a Ban on Tropical Timber Imports

Around the world, the destruction of tropical rainforests is taking place with such rapidity that within two or three decades all areas of primary rainforest that have not been actively protected, such as nature reserves or tribal lands, will be gone. Awareness in the West about this ongoing destruction of tropical rainforests and rainforest cultures is growing rapidly. Discussion now includes the role of developed countries in furthering rainforest destruction through development aid, business activities and consumer choices. The problem has moved from "out there", to, in the case of tropical timber, literally our own doorstep.

The tropical timber industry is responsible for degrading some five million hectares of primary rainforest annually.¹ In Southeast Asia, over half the rainforest timber cut is exported to developed countries.² The tropical timber industry is the most important cause of primary rainforest destruction in Southeast Asia and Africa.³ Aware of the links between rainforest destruction and the tropical timber industry, environment groups in the West have organized consumer bans of tropical timber. In West Germany, 200 city councils have stopped using rainforest timber and hundreds of other councils will be voting on the issue this year. The West German Minister for Building announced in January 1989 that the government would stop using tropical timber in its building projects.⁴ In the Netherlands, almost half of local governments have stopped using tropical timber.⁵

Economics

Critics of the tropical timber bans claim that such actions will hurt the economies of the producer countries. However as the resource economist Robert Repetto points out,

"The gross value of timber exports is the usual focus of attention. Overlooked are the large acknowledged and hidden outflows of profits gained by domestic and foreign timber concessionaires and the politicians and military officers who are often their silent partners . . . In some countries including the Philippines, annual revenues accruing to national treasuries from forest exploitation have not covered even the administrative and infrastructure costs incurred from timber harvesting . . . The timber sectors in tropical wood-exporting nations have typically provided jobs for less than one per cent of the labour force . . ."⁶

The Malaysian state of Sarawak is a good case in point. Figures from the district of Belaga for 1983 show that the timber companies made gross earnings of M\$300 per ton of wood. The concessionaires made approximately \$10 per ton, while the Government royalty was \$24 per ton. Seven long house communities in Belaga attempted to get compensation of \$0.50 per ton for the damage caused by logging to their customary lands. The logging companies refused to pay any compensation.⁷ The situation has

become worse as logging has pushed into remote areas, affecting tribes with even less political power or access to government. Although the proportion of the work force in Sarawak employed by the timber industry is much higher than Repetto's average, these jobs will be lost in a few years as the remaining forests are logged out. Estimates show that all remaining primary rainforest in Malaysia suitable for commercial logging will have been cut within seven years.⁸

The Myth of Sustainability

Critics of tropical timber bans assume that with proper management, tropical rainforests could supply a sustainable timber yield. "Sustainable rainforest logging" has become a catch phrase of development agencies and forestry services around the world, who argue that rainforests will only be protected if they are able to produce timber and foreign exchange.

Unquestionably, the tropical timber industry could be made more efficient and less destructive. *However, there is hardly a single example of sustained industrial timber extraction from tropical rainforests.* In a study for the International Tropical Timber Organization (ITTO) on *Natural Forest Management for Sustained Timber Production*, Duncan Poore concluded that successful sustainable tropical timber operations cover less than one eighth of one per cent of rainforest lands.⁹

Poore cites the management of the tropical rainforests in Australia as the shining light in the dim world of short term rainforest timber exploitation. But even in Australia, with a longstanding and relatively well-funded forestry service, sustained timber yield from tropical rainforests has not been possible. Up until the 1970s, the Queensland Forestry Department maintained that it could harvest 200,000 cubic metres of timber in perpetuity from the tropical rainforests under its control. Unable to maintain this yield, the quota was reduced progressively through the 1980s to 60,000 cubic metres per annum, when the Federal Government intervened in 1988 to stop further desecration of the forests.

Tropical foresters around the world are adamant about the destructive effect of the industry. Dr. G. Budowski, from the Forestry Institute, Costa Rica comments,

"The tropical forester hears and reads about 'selection' or 'shelterwood' systems, yet does not know of any single good practical case where such logging has not resulted in degradation. It may well be worthwhile to destroy the myth that claims that these forests [primary tropical rainforests] can be successfully managed on a sustainable yield basis, because there is a lack of evidence or good case studies."¹⁰

Similarly, referring to the tropical timber industry in Africa, forestry researcher Claude Martin writes,

"Unwavering belief in the possibility of sustainable rainforest usage [for timber] has brought about absurd results, especially in West Africa. In this area forest management

systems were introduced very early, including Nigeria, whose forest is severely degraded, but the belief has been kept alive till the bitter end because it looks so beautiful on paper, in law statutes that were created decades ago more in Europe than in Africa. The population of these countries, yesterday and today, have been forgotten.”¹¹

Loss of Biological Diversity

It will never be known how many species have become extinct to provide luxury rainforest timber for the consumer countries, but a study in Kalimantan comparing primary rainforest and 30-year old secondary rainforest showed a 20 per cent decline in tree species.¹² A study on low intensity selective rainforest logging in Uganda found that five of the seven primate species living in the area were seriously affected, with a significant reduction in numbers.¹³

Due to the restricted range of a large proportion of rainforest species, where a single valley may provide the total habitat for an organism, rainforest logging is inevitably leading to species extinctions. Plant and animal species not directly affected by rainforest logging may become extinct if other species they are dependent on are lost. Scientists now estimate that 12 per cent of the bird species in the Amazon and 15 per cent of the plants in Central and South America belong to “the living dead”; organisms for which individuals can still be found but where the species population is not biologically viable.

Current knowledge about soils, microclimates and ecological conditions of rainforests show that the options for the sustainable exploitation of rainforests are severely limited. On the whole, industrial agriculture and silviculture are incompatible with the ecological constraints of these systems. Sustainable subsistence economies are the only viable ways that these forests can be used without destroying them. None of the proposed reforms of the tropical timber trade being discussed in forums such as the ITTO include adequate measures for the protection of primary rainforests. Any plan that seriously seeks to conserve biological diversity must exclude industrial logging from primary rainforests.

Subsistence Needs Ignored

The tropical timber trade cannot be divorced from the issue of land rights. Many cultures that live in or rely directly upon rainforests are not recognized as the owners of their traditional lands by the Governments that rule over their territory. Throughout the tropics, rainforests provide for the subsistence needs of hundreds of millions of forest dwellers.¹⁴ Almost inevitably, where rainforests are exploited for timber, local communities suffer.¹⁵

The concept of ‘undeveloped’ rainforest is part of a development paradigm that refuses to recognize that virtually all rainforest lands are managed by and provide for local cultures. The fact that many rainforest areas still carry a level of species diversity undiminished by human activity is a measure of the sophistication and sensitivity of the relationship that traditional cultures have to their forests. The tropical timber industry also destroys the resource base for minor or secondary forest products such as fruits, nuts, medicines and gums which form a major part of local economies in rainforest regions. Beyond the local economy, where the main economic importance of minor forest

produce is found, these products often play a significant role in the national economies. In the early 1980s, exports of minor forest products from Indonesia reached US\$125 million.¹⁶

The economic value of minor or secondary forest products has rarely been calculated, however. A United Nations Development Programme review of the early implementation of the FAO/World Bank *Tropical Forestry Action Plan* in 1988 found that none of the countries reviewed had carried out an assessment of the present economic uses made of rainforest areas, yet all were preparing inventories of remaining rainforests in preparation for industrial exploitation.¹⁷ Basic research in this area will no doubt show up the ways that the tropical timber industry sacrifices sustainable local economies and the biological diversity that they protect to provide cheap timber and quick profits for the industrial sectors of developing societies and businesses and consumers in developed countries.

Trade Regulation: too Little, too Late.

The campaign for rainforest protection by European environmental groups has led the European Commission to prepare a trade regulation designed to promote “sustainable levels of logging” through a system of quotas and management plans. If implemented, the regulation will restrict tropical timber imports from producing countries who refuse to create and adhere to “Sustained Yield Plans”.¹⁸

The draft regulation uses the concept of sustainable timber production freely, without providing any definition or examples. It refers to “the rights of indigenous forest peoples” in the preamble but makes no reference whatsoever to indigenous peoples or customary lands rights in its articles. The regulation allows producer countries five years to prepare management plans, ignoring the fact that many of the countries presently exporting timber will have all but logged out their rainforests by the time the regulation can be implemented. A World Bank study has estimated that of the 33 countries which are presently net exporters of tropical timber, only ten will have any timber left to export by the year 2000.¹⁹

The issue which created the impetus for the Commission to consider regulating the tropical timber trade, was the struggle of the tribal communities in Sarawak against the destruction of their rainforests and cultures by the tropical timber industry. An international outcry over the arrest of tribal people blockading logging operations on their customary lands led the European Parliament in July 1988 to call on member states to ban the imports of tropical timber from Sarawak.

In response to the threatened bans, the Malaysian authorities issued a statement which claimed that, in fact, Sarawak has exemplary forest policy, management and practices. The statement, sent by the Malaysian Ambassador to Belgium to the president of the European Parliament, details how Sarawak’s rainforests are managed sustainably for timber and that the rights of tribal people are recognized by law and respected in practice. The report concludes; “The objectives of the International Tropical Timber Organization, the Tropical Forestry Action Plan and the World Conservation Strategy are all adhered to by Sarawak.”²⁰

The Malaysian authorities need not have worried, as the European Commission, the tiger behind the paper European Parliament, rejected the Parliament’s call for an import ban, noting that such an action would be economically damaging to European timber importers. The Commission is instead prepar-

ing the tropical timber trade regulation, believing that rainforest logging is compatible with rainforest protection. The Sarawak Government already meets the requirements of the timber trade regulation, as presently formulated.

The regulation will not be able to control the destructive practices in Sarawak and will, instead, frustrate further action on the issue by appearing to address the problems. Meanwhile, in Sarawak, rainforest logging is proceeding faster than ever.

Banning Imports: the Only Solution

Today even standard economists are seeing that the rainforests are worth more standing than converted into timber or hamburgers. A recent report in *Nature* estimated that timber constitutes less than 10 per cent of the value of the renewable resources of tropical rainforests.²¹ Similarly, in a study for the West German Chancellor, Professor Dieter Oberndorfer has noted,

"Ecological investments to protect still remaining rainforests from further destruction are imperative even if only for economic reasons. In the short term and medium time range analysis, there is no conflict between economy and ecology... A worldwide and controlled agreement that puts a ban on tropical timber imports would in any case be an important contribution for the protection of the rainforests of many regions."²²

Oberndorfer goes on to note:

"The destruction of the rainforests has primarily economic causes. Rainforest destruction can be effectively stemmed even in the short term by economic compensation... The realization of effective international agreements [for the protection of rainforests] would be eased to a large extent if the countries that are now the main exporters were to be given economic compensation for the loss of revenue that the cessation of timber exports would mean."¹⁹

To change the present unsustainable exploitation of rainforest ecosystems, industrial countries will have to cease putting pressure on the tropical forests through exploitative aid, business and consumer activities. Banning the import of rainforest timbers from primary forests into our countries is a small sacrifice we can make to reduce our consumer pressure on the rainforests. By taking responsibility for our own burden, we will be in a much

better position to assist with the essential work of funding the protection and rehabilitation of rainforest lands and supporting local peoples to maintain and create sustainable land use practices in and around the tropical rainforests.

Patrick Anderson

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Natives of Sarawak

SURVIVAL IN BORNEO'S VANISHING FORESTS



EVELYNE HONG
INSTITUT MASYARAKAT

Natives of Sarawak

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The ILO and Indigenous Peoples

Indigenous peoples from all over the globe have spoken out against the International Labour Organization's (ILO) new Convention No. 169 on Tribal and Indigenous People. The Convention, which was adopted at the International Labour Conference on 26 June 1989, sets out the rights of the world's three hundred million tribal and indigenous people.

The rights laid down in the new Convention are less encompassing than those set out in the 1957 Convention it is designed to replace. The new Convention thus fails to meet the demands and aspirations of tribal peoples. The old Convention, despite its many deficiencies had one major virtue: it unambiguously recognized the right of tribal and indigenous peoples to the ownership of their traditional lands. In the face of the continuing invasion and pillage of their lands and resources, tribal peoples could at least rest assured that these activities violated an internationally recognized human right. The new Convention offers no such assurance.

The new language, pushed through the ILO by governments and employers' associations, erodes the secure rights to lands. The text of the new Convention is shot through with ambiguities and provides so many loopholes that indigenous people fear it is tantamount to an invitation to exploit the surface and mineral resources of tribal lands. Yet, without their lands, tribal peoples cannot hope to maintain their ways of life.

Sharon Venne, a Cree Indian from the Treaty Six Territory in western Canada, spoke on behalf of all the indigenous peoples present at the final plenary session of the 1989 International Labour Conference:

"The revised text is likely to open the door to all forms of resource exploitation on indigenous lands, without indigenous consent. It could provide unrestricted license to States to rape and pillage our lands."

Some Gains

Some gains have been made in the new Convention. It rejects the 'integrationist' policies promoted by the old law and accepts that tribal and indigenous peoples and their ways of life should be respected and their consent at least sought before decisions are made affecting their future. Whereas the old Convention foresaw indigenous peoples being gradually absorbed into the national mainstream, the new Convention is based on the notion that indigenous identities are there to stay and should be respected and promoted. Moreover, the new law goes further than any other international instrument in recognizing that rights may be collective, as opposed to merely individual. However, these gains have been strictly limited and the Convention confers few substantive new rights.

The new Convention which has adopted the term 'peoples' in place of the term 'populations' in the 1957 version, uses it in a

heavily qualified way. The new ILO instrument states that the use of the term will "not have any implications as regards the rights which attach to the term under international law." In international law, the term 'peoples' implies rights to peace, subsistence and self-determination. In the new Convention, however, indigenous peoples will be denuded of these rights. The decision prompted the indigenous peoples present at the meeting to stage a walk-out.

The indigenous representatives were furious that, of all the peoples of the world, indigenous peoples alone should be cut off from enjoying the same rights as other peoples as defined under international law. Cristobal Naikiai, a Shuar Indian from Ecuador and Vice-President of the Co-Ordinator of Indigenous Organizations of the Amazon Basin, likened the process at the International Labour Conference to a similar conference in the 16th century when the church in Spain had debated on whether Indian people had souls or not.

Hypocrisy

Referring to the key role played by the Canadian Government in pushing through the discriminatory language, Geoff Clark, of the National Coalition of Aboriginal Organizations of Australia noted:

"This is blatant racism, and we deplore the fact that Australia, Sweden, Finland and certain other governments are following Canada's lead."

The indigenous peoples were strongly critical of the fact that they were not directly involved in the ILO process. Their speaking rights were heavily circumscribed and they had neither the opportunity to propose textual amendments nor to vote for or against the laws that will affect them directly. Indeed nothing more clearly illustrated the hypocrisy of the entire process than the very seating arrangements at the Conference. While the rhetoric in the Convention was all of "recognizing the aspirations of these peoples to control their own destinies" and "of seeking to obtain the consent of these peoples, as expressed through their own representative institutions, in decisions affecting their future", the reality was that the indigenous peoples sat against the wall of the conference hall looking on powerlessly while their rights were negotiated away before their very eyes.

Christobal Tapuy of the Confederation of the Indian Nations of Ecuador noted: "The ILO has been posing as a supporter of indigenous rights but is letting us down on important points of principle."

The old Convention at least provided moral high-ground, from which to condemn the continuing depredations on tribal lands. What we have now is a moral quagmire in which anything goes. It is a tragedy that this new law should be passed now, just as the international community is beginning to wake up to the fact that the pillage of this planet has got to stop, if we are to survive into the next century. The ILO has proved itself to be a reactionary force, out of touch with new thinking on sustainable development.

Marcus Colchester

Marcus Colchester represented Survival International as a member of the ILO's Committee of Experts into the Revision of Convention 107 in 1986 and attended the International Labour Conference this June. He is the Research Co-ordinator for Survival International, 310 Edgware Road, London W21DY, UK. Tel. 01-723-5535.

The Arts and Planetary Survival

by
Denys Trussell

Man's ever-increasing separation from the natural world has been mirrored in an increasing artistic shallowness and aimlessness. The arts and philosophy must confront the ecological crisis and become a force in building a new worldview. Art must once more enable us to establish the meaning of our existence.

"And I can only hope that men of the new generation may be moved by this book to devote themselves to technics instead of lyrics, the sea instead of the paintbrush, and politics instead of epistemology. Better they could not do."

Spengler, *The Decline of the West*, 1926.¹

"Today we search behind the veil of external appearances for the hidden things of nature. . . We seek and we paint this spiritual side of ourselves in nature. . ."

Franz Marc, *Die Neue Malerei*, 1912.²

Just as the continued existence of society is now in question, so too is the existence of the arts. Not only has the physical environment of Gaia been disrupted by the progress of industrial production and the unbridled working of capital; so has the moral and metaphysical environment of art and thought. The society of industry and the market is now a world "form". It has affected virtually all other societies, changing them, destroying them. The history of this century is essentially the history of this new world-order, its global dominance, its annihilatory logic. And humanity has no choice but to work out its spiritual and physical fate in the face of this unsympathetic and powerful mechanism.

The response of artists to this challenge has ranged from nihilist despair to a passionate affirmation of humane and natural values. There have been moments when art seemed to have no recourse but silence; as when Theodore Adorno, aesthetician and historian, said that, after Auschwitz, poetry was no longer possible. In the face of the unthinkable, what avails thought? In the face of such unfeeling, can artistically ordered feeling help us survive? The radioactive cloud like a mutant tree above Mururoa atoll is an image reminding us that a world without feeling or thought is an ever-present possibility.

Throughout this disordered century of 'high' technology, the arts have given meaning and nourishment to beleaguered human consciousness, despite instances when they have been made meaningless by the very impasse of spirit they depicted. By looking at the success and failure of art in the twentieth century, we may evolve a viable aesthetic, one that is not dogma, yet gives implicit support to the well-being of Gaia and the continuance of a tolerable human society.

Denys Trussell lives in New Zealand. He is author of *The Life of Fairburn*, New Zealand's foremost poet, published by Oxford University Press, 1985.

An Unthinkable Civilization

Warnings that we were heading towards an unthinkable civilization have been reaching us from artists and thinkers for at least two centuries. Blake, Thoreau, Marx, William Morris, D.H. Lawrence and Tolstoy all have made far-sighted attacks on the onset of economic culture and social alienation. Workers were being sundered from the product of their work, people were losing contact with their roots in nature and the cosmos, life was being seen as a meaningless evolutionary accident, and there was a complete perversion of economics. Whereas in former states of society, the economy existed to sustain the social organism, society now existed to serve the abstract purposes of economy. Economic man, that organo-mechanism stripped of all attributes other than production and consumption, had come to roost on this unhappy planet.

Society is now pulverized: all the multitudinous riches of symbolism and cosmology, agricultures and architectures is disappearing. An homogenized mentality of consumerism has liberated not the deep individuality manifest in the self-portraits of Rembrandt, nor the totemistic feeling for nature in the ghostly, beautifully stylized paintings of Australia's Aborigines, but a poisonous wave of nihilism and boredom. Here the social bond is the cash nexus. Cosmology has been reduced to advertising and direct connections with nature are withering away.

Such is humanity in its most 'developed' state: shorn of its history, reduced to commodity fetishism and threatened with ecological annihilation. The collapse of cosmology, of transcendent belief, has been corroborated by reductionist science that has failed to give back a sense of wonder in nature, a reverence for life, a sense of the unity in creation. Such science reinforces the worldview of a meaningless, atomized universe; a perspective that has entered many other fields. Philosophy has lost its nerve, and so too has poetry in some of the works of writers like T.S.Eliot:

*"Our dried voices, when
We whisper together
Are quiet and meaningless
As wind in dry grass
Or rats' feet over broken glass
In our dry cellar
Shape without form, shade without colour,
Paralysed force, gesture without motion."*³

The Artist Destroyed

Insofar as he was portraying the hopeless, unmeaning landscape of modernity, Eliot was being honest. None can doubt the ongoing existence of the *Hollow Men* in our era. But his language is that of an artist destroyed by his subject — a not uncommon state of affairs in the twentieth century. The diminished cadences and flattened rhythms betray a personal defeat. This dried out speech lacks the resonance to encompass and objectify the evil it portrays. Nor does it imply the possibility of any transcendence of that evil. In it is the self-indulgent undertone of the depressive, incapable of participation either in the vital processes of his own existence, or in the greater energies of the macrocosm. In this mode then, Eliot is a symptomatic modern artist: a creator unequal to the chaos he faces, a creator destroyed by his creation.

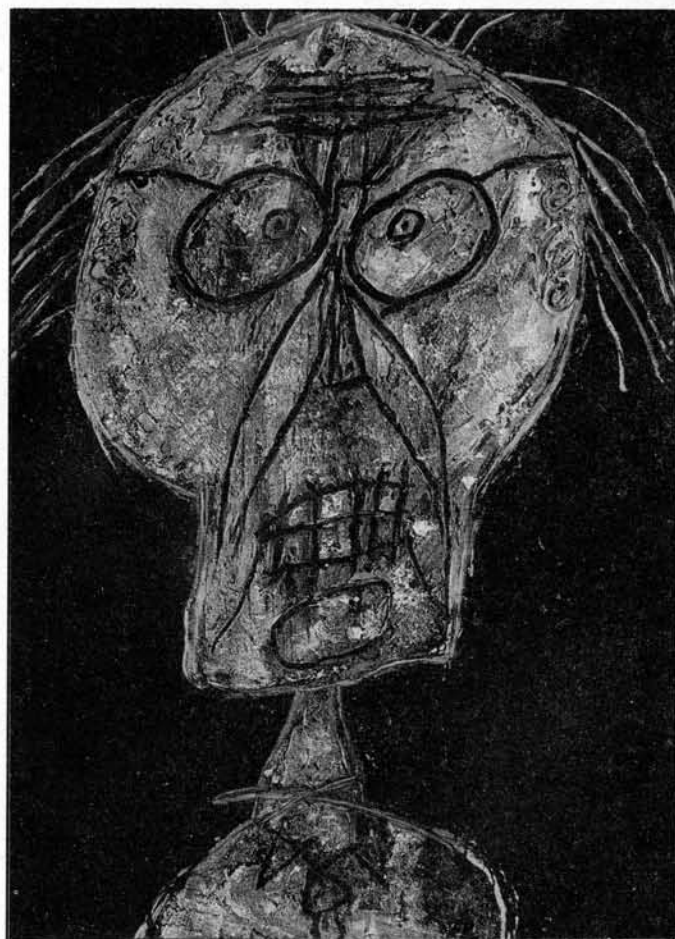
That is not to say the artist should indulge in the rhetoric of a bombastic optimism. Such would be utterly false in this era. Nor would it produce truth and meaning for the artist to imply naively some kind of ecological Utopia: that would be to deny the depth and complexity of the problems with which we are struggling. Somehow, the arts and philosophy must neither deny the evil in our time, nor be destroyed by it. By the means of an acute and passionate moral perception, they may then become a force in the emergence of a new cosmology, one that encompasses good and evil, the pain and beauty in life; a cosmology that reflects a better state of psychic and social equilibrium. At present there is no equilibrium. Artist and society are adrift in an ocean of chaos. The hollow man simply lacks the psychic resources to navigate this ocean, to find new lands of meaning.

All serious artists are now faced with a struggle to 'ensoul' their work. For this, they can draw little energy from a society that is itself largely without soul. Will the work of artists come just to reflect this emptiness? Individuals will respond differently according to their courage, their temperament, their energy. But the artist who fails to ensoul the work of art will leave little for the planet; just the sterile ruins of aestheticism and intellectualism that litter the psychic environment of the twentieth century; the incommunicable bric-a-brac of those who believed their work was a self-justifying phenomenon. Cut away from roots in the life processes, such art exists only for itself, its own cause and effect. Narcissistic, esoteric and denying all connection with actual life, it reduces subject matter to a working out of its own technical processes.

Aesthetic narcissism is inevitable in an age of social and ecological breakdown. It arises in artists who have neither the temperament nor the power to give art a purpose in a society from which nearly all intelligible purpose has been erased. It is both the protest of such artists at this state of affairs, and their self-indulgent, fatal silence. It is no accident that much aesthetic theory and practice in this century has been concerned with the means rather than the ends of art. This reflects precisely the inversion of means and ends in society itself; an inversion that has people living to work rather than working to live; and an economy that exists for itself, and not for *any human purpose*.

Art and Human Purpose

There is little doubt that art has had such purpose in the social ecology of other cultures and in other periods of Western culture. Art has always been a crucial means whereby we established our



'Better looking than they think' by Jean Dubuffet. Modern industrial society has cast artists adrift in a sea of chaos, with much modern art portraying a hopeless, unmeaning world.

place spiritually in the macrocosm. Its meaning, purpose and origin lie in that deep strata of hope and terror with which our ancestors, facing an overwhelming universe, sought to communicate with it. Vestiges of art's primordial nature are still within it: there is little doubt that it arose out of ritual and magic, the proto-art of ritual being to ensure survival by coaxing the earth to bear fruit. With sympathetic magic, humans hope to persuade nature, year after year, to be generous, to make the vegetative spirit spring again into the quick of the seed, to make the crops grow. In hunter-gathering societies ritual was to safeguard the abundance of game. There could scarcely be any more ecological motive than this at the roots of art:

"At the bottom of art, as its motive power and its mainspring, lies not the wish to copy Nature or even improve on her. . . but rather an impulse shared by art and ritual, the desire, that is, to utter, to give out a strongly felt emotion or desire by representing, by making or doing or enriching the object or act desired. The common source of the art and ritual of Osiris is the intense, worldwide desire that the life of Nature which seemed dead should live again."⁴

Art and the Imitation of Life

So the mimes, the dithyrambs, the 'dromen' or acts to make the earth fructify; the dressing of humans to represent the life force of animals and plants; the sacrifices to the vegetative spirit that starts into amazing life each spring, were the first stages of art.

"The arts and philosophy must neither deny the evil in our time, nor be destroyed by it. By the means of an acute and passionate moral perception, they may then become a force in the emergence of a new cosmology, one that encompasses good and evil, the pain and beauty in life; a cosmology that reflects a better state of psychic and social equilibrium."

Ritual enacted the resurrection, but art went to the next phase of representing the thing desired without passively copying it:

"We must not only *utter* emotion, we must *represent* it, that is, we must in some way reproduce or imitate or express the thought which is causing us emotion. Art is not imitation, but art and also ritual frequently and legitimately *contain an element of imitation*."⁵

This vexed question of '*mimesis*', discussed by Aristotle in his *Poetics*, is vital in clarifying the relationship between art and reality or nature. Mimesis is fashionably misunderstood by many modern aestheticians, who believe it simply means that art should passively copy life and nature.⁶ This common mistake, first made by Plato, and now shared by those with an intellectualist view of art, is a particularly symptomatic error in our time, telling us more about the drive to escape from the realities of life and nature that it does about what mimesis really is.⁷

"The word *mimesis* means the action or doing of a person called a *mime*. Now a *mime* was simply a person who dressed up and acted in a pantomime or primitive drama. He was roughly what we should call an *actor*, and it is significant that in the word *actor* we stress not imitating but acting, doing. . . ."⁸

Aristotle certainly did not mean that nature should be copied by art. His "art imitates nature" has been, through inept translation, misunderstood as a formula for passive naturalism:

"But by Nature Aristotle never means the outside world of created things, he means rather creative force, what produces, not what has been produced. We might almost translate the Greek phrase, 'Art, like Nature, creates things'. "⁹

Art is a parallel process of creation, and its raw material includes the substance of nature, if only in the sense that the artist is an organism who creates out of the energy of his or her life, which *is* nature. The mating of the artist's demi-urge with the substance of experience is actually a fusion of two elements in the macrocosm that is finally and inevitably nature, no matter how urbanized the artist may be.

Yet, experience has become so disordered and bizarre, and appears to have so little relation to life's natural sources for many artists, that they have taken refuge in rarefied, platonic mental worlds. Believing wrongly that art is simply a copy of life, and finding life too traumatic, they then make a copy of abstruse mental states and intimations free of the pain of life. But this disembodied 'mentality' is an insupportable paradox, a kind of monstrosity. It denies implicitly that mind and organism are inseparable and that mind is the creation of nature. The disembodied mind can only create dead language, the language in fact of the Hollow Men. By contrast, mimesis is a vital act, not an ineffectual copying, and it allows for great subtlety and inventiveness in the making of artistic languages.

Art as Catharsis

As well as enabling both artist and audience to participate in the creative process they share with nature, art is also a process of clarification. This is the famous concept of *catharsis*, the purging of emotion through the evocation of 'pity and terror'. To create an art work objectifies, for the artist, the very feelings that inspired it; to witness it, as emotion objectified, clarifies vital aspects of fate for the observer. Aristotle discussed catharsis in his *Poetics*, but has again been misunderstood. It has been implied that catharsis is just another way of reconciling people to cruelties and injustices in life that they would be better resisting. This is nonsense. A person who has gained an objective, 'purged' and de-sentimentalized view of good and evil through catharsis is much more fitted to recognize and act against the wrongs of the world at large than one who has not. Aristotle carefully qualifies catharsis in drama:

"Terror and pity may be raised by the decoration — the mere spectacle; but they may also arise from the circumstances of the action itself; which is far preferable and shows a superior poet. For the fable should be so constructed that, without assistance of the sight, its incidents may excite horror and commiseration in those who hear them."¹⁰

No superficial horrors or indulgence in spectacular violence. That only feeds our darker psychopathology; and Aristotle knew this just obscured moral awareness. Gratuitous violence and shabby spectacle, the hall-marks of virtually every television melodrama and inferior movie is, in a work of integrity, quite unnecessary. Yet, so misunderstood is Aristotle's suggestion in this age, that even well-read literati can mistakenly ascribe 'slice of life' trash serials on television to his poetics. Nothing could have been further from his intention than the proliferation of the derivative and the vicious which characterizes much mass entertainment, and even some work that claims to be art.

Sensationalism, the narcotic that drugs consumers of modern entertainment and anaesthetizes them for the acceptance of the Apocalypse, is far from the attaining of moral insight and objectivity by catharsis. It is the honest and artistic ordering of pity and terror that makes us look for meaning in the cosmos, in the affairs of humanity and nature; that compels us to work for a society that will not need an Apocalyptic fulfilment.

Purpose in Nature: Purpose in Art

The intimation of meaning. That too has been a task of art. Despite the quite unprovable assertion that there is neither meaning nor purpose in the universe, art and nature bring to us presentiments that they are charged with these. If we take the concept of the earth as a great self-regulating entity, we have meaning. It means something that such a huge entity can be seen as a resplendent and unified process. It affirms something in us, who must also maintain ourselves as stable and unified creatures. To perceive in the macrocosm what we are in ourselves is really an epiphany; a revelation that we are one and part of one world, one universe. It is this perception of the 'one' — the continuous and unified fabric of the macrocosm — that is the perception which both artist and audience share in a cogent work of art.

The coherence of such a work, whatever its medium or form, depends on its having *gestalt* — an intimation in the work that it is far more than just the sum of its parts. This is the artistic corollary to wholeness, to the complementarity that may be

found in an ecosystem. In fact, art is a kind of psychic and metaphysical ecosystem that defies finally all attempts to break it down in a reductionist manner.

Everything now in the training of the modern intellectual tends to erode away a sense of *gestalt*. Academic and professional language betrays this. The clumsy and frequent use of words such as 'component', 'unit', 'module', 'digital' and innumerable others has a banal yet seductive allure in virtually every discipline. It has built up an atrocious, synthesized jargon of reductionist sociology, criticism and science that now penetrates into a staggering range of descriptions. This is no mere fashion or accident. It warns us of a subtle breakdown in our perception of reality; a love of seeing, feeling and thinking in components; a syntactical unwillingness to express the noumenal and significant wholeness of things; a perverse will to reduce what is after all a mighty enigma — existence — into a discontinuous series of banalities.

Unifying Perceptions

The *gestalt* in a work of art is perhaps its deepest purpose. It helps us unify our perceptions and, in plain language, make sense of things, guarding us like a psychic shield against spiritual and social entropy. If art is strong in its *gestalt*, like nature itself, it becomes a source of renewal and of values alternative to the entropy that threatens. But art undermined by the entropy that it enacts lends itself to the process of dissolution. The penultimate hopeless stammerings of T.S. Eliot at the close of *The Waste Land* are such an art:

*"I sat upon the shore,
Fishing, with the arid plain behind me,
Shall I at least set my lands in order?
London bridge is falling down falling down falling down."*

The poem goes on to end with quoted literary fragments of great pathos which, the poet explains, are the "fragments I have shored against my ruins." The last line, "Shantih shantih shantih", an invocation of the "peace that passeth all understanding", is the blessing of a soul so undermined by historic disorder that is has in it as much of mockery as of beatitude.¹¹

Eliot's famous fragments - the text of *The Waste Land* - pieced together as a gloss on the text of historical experience, are deeply savoured and respected by writers and teachers of the humanities throughout the modern world. Though published in 1922, it is still a key work in the formation of contemporary consciousness. This is a symptom of our condition. We identify with its landscape of smashed up traditions, personal impotence and deranged mental ecology. We do this because it is our landscape; a bitter mimesis of our non-doing, of our acceptance that the time of passion, commitment, meaning and vitality has passed; that there can be no *gestalt* either in life or art.

But *The Waste Land*, implying no escape from its own negations, is the end. If we would live, the poem is an impossible foundation upon which to build. Our very survival depends on establishing a more vital aesthetic, a more integrating poetic than lies in this shattered speech of a conservative, deeply timorous scholar who found his singular niche in the modern imagination while working as a London bank clerk.¹²

Art and Cosmology

While it does not (or should not) preach, art inevitably implies or embodies a cosmology. The religious subjects of painting in the

"Aesthetic narcissism is inevitable in an age of social and ecological breakdown. It arises in artists who have neither the temperament nor the power to give art a purpose in a society from which nearly all intelligible purpose has been erased."

Quattrocento do not enjoin us to see a world in which the dynamic, optimistic exploration of nature had become a unifying passion. But that Renaissance fascination with materially perceived nature and the place within it of a transcendental and angelic consciousness is implicit in the actual style. Paintings that are at one level depictions of their subjects, be they the Holy Family, the Annunciation, or the Crucifixion, are also revelations of a cosmos in which humanity is becoming an ever more dynamic and active participant in an intensely detailed natural world. This of course was the beginning of our present troubles, but now our exploitation is merely utilitarian. The angel has been metamorphosed into a secular businessman-scientist who destroys the substance of nature so passionately observed in the Renaissance.

The cosmos implied by the succession of styles that has swept over us since Impressionism has, broadly speaking, been one of discontinuity. Humanity no longer occupies the natural world with any confidence, but has withdrawn into abstruse worlds of technics and paranoia, where their own creations loom, sometimes with malevolence. The giant machine city in Fritz Lang's film, *Metropolis* is such a production. And some art has resorted to a kind of anti-cosmology; a world of pain, silence and outrage to be sensed in some of Magritte's paintings or the dramas of Samuel Beckett. Such work neither implies nor alludes to a larger order of being in which humanity might have a place.

Giving Meaning to Life

Cosmology and meaning flow into each other. Usually neither is explicit in art, unless the work is the simplest iconography or illustration, but each is its metaphysical underpinning. Meaning is there because humanity must have it as surely as it must have food. Extreme pessimists of materialism may believe it a delusion, but life is not livable without it. Carl Jung saw in his practice of psychiatry that, time and again, psychic illness could not be fully cured in a context of meaninglessness. He had to conclude that mono-causal, positivistic explanations of the patient's predicament were inadequate:

"Although the theories of Freud and Adler come much nearer to getting to the bottom of the neuroses than does any earlier approach to the question from the side of medicine, they still fail, because of their exclusive concern with the drives, to satisfy the deeper spiritual needs of the patient. They are still bound by the premises of nineteenth century science, and they are too self-evident — they give too little value to fictional and imaginative processes. In a word, they do not give meaning enough to life. And it is only the meaningful that sets us free."¹³

Aesthetic experience is an important aspect of meaning. The will to give an aesthetic shape to life is an instinctive and innate

behaviour. Ancient humanity left plenty of evidence of this: "Whether there was a conscious aesthetic motive or not, it is true anyway that earliest known man could and did draw, carve, chisel and model; that he was able to satisfy an interest, whether independent or subservient, in qualities of form, design and colour; and the things he fashioned come to us with aesthetic appeal through 25,000 or more intervening years."¹⁴

Aesthetic experience is an attribute of consciousness in *homo sapiens*, pervading the life of the species, as much as sexuality. Meaning, gestalt, cosmology and the aesthetic dimension flow into a great confluence of consciousness that is embodied by way of art.

Without this spiritual confluence, there is psychological and eventually physical death. Samuel Beckett was only telling the truth in *Waiting for Godot* when he depicted a group of men, stripped of meaning, placeless, rootless, their selves incommunicable, their days spent waiting for a god/symbol/meaning that never arrives. But this truth is so all-encompassing in the play that its telling cannot release us into meaning. The blackest of comedies, it numbs the centres of those who watch it:

Vladimir: We'll hang ourselves tomorrow (*pause*). Unless Godot comes.

Estragon: And if he comes?

Vladimir: We'll be saved.¹⁵

But we all know that Godot will not enter this existential desert. And the only tree in the play will act, not as the tree of life, but of death. It will be the gallows. This is the dramaturgy of ashes. A world of holocaust with no values implied. Suicide is the only way for Vladimir and Estragon, though there remains some doubt as to whether they have the energy even to hang themselves.

Nature Censored

This absurdist end has had long beginnings. Machine civilization and the working of the market freed people from older forms of social contract, but destroyed the sacramental basis of society. The arts, struggling to adjust human vision to this, had to throw off the academicism, bourgeois rhetoric and sentimentality that were part of the new materialist order emerging through the nineteenth century. But efforts to adjust to the increasing dehumanization of social relations forced artists out into a nihilist wilderness, where they were threatened by weakening coherence and, in some instances, immolated by the very forces they sought to exorcise and condemn.

The full depth of the crisis was not apparent until the emergence of works such as Baudelaire's *Les Fleurs du Mal* in 1857, and the skeletal late piano works of Franz Liszt, written in the 1880s. Works like these hinted at new possibilities of artistic language, not to be developed fully until the twentieth century; but they also spoke of a moral universe where values might not be *transvalued*, but quite *devalued*.¹⁶ There only the most spiritually self-reliant would have any hope of survival.

This was to be the bane of development in twentieth century art: on the one hand audacity, inventiveness and the sheer courage of attempting mimesis in a society ripe with premonitions of unprecedented atrocity; on the other, the risk of losing all good while trying to objectify and exorcise the evil.

Charles Baudelaire (1821-1867) led us straight into this dilemma by his dandyish championing of a world of human artifice. This great poet of disgust, corroded by the acids of late

city sophistication, foreshadowed the flight from nature, so fashionable in our own time:

"We can see that nature teaches nothing or nearly nothing. . . it compels man to sleep, drink, eat and to protect himself as best he can against the inclemencies of the weather. It is nature too that drives man to kill his fellow man. . . Review, analyse everything that is natural: you will find nothing that is not horrible. Everything that is beautiful and noble is the product of reason and calculation. Crime . . . is by origin natural. Virtue on the other hand, is artificial. . . Evil is done without effort, naturally, it is the working of fate; good is always the product of an art."¹⁷

With a supercilious flourish, Baudelaire serves up a common nineteenth century fallacy — "nature red in tooth and claw" — the terrifying competitive jungle which existed, ironically, not in nature, but in the society of men struggling for survival amongst the artificial creations of their new industrial cities.

The censure of nature has a long history. Even Socrates is reputed to have said he stayed in Athens because the countryside taught him nothing; he learnt more from people. But a technology which fosters the delusion that nature can be dispensed with is a modern phenomenon. Combined with Baudelaire's vision of the natural world as being a kind of reservoir of original sin, it has produced some extreme repercussions in the arts.

Most vocal in favour of an art celebrating purely mental and technological universes were a series of theorists and practitioners in the plastic arts — the Futurists, the Suprematists, the Neo-Plasticists and the Purists — whose pronouncements have influence to this day. Their rejection of experience and nature ranged from a platonic disdain for the senses, a reverence for the mathematical and formal skeleton of human conception, to a naive machine optimism; a belief that the machine could improve on nature and release the full imaginative potential of humanity.

The most famous and possibly the most gifted artist involved in these anti-naturalistic theories was Piet Mondrian (1872-1944). In his early career he had been a strong expressionist painter of nature, but his increasing purism took him on an inner journey away from this or any natural order. A leading figure in the movement of *De Stijl*, founded in Holland during the First World War, he shared their aspirations for abstract purity, harmony, cleanliness and clarity. It was an austere aesthetic that had its roots in Dutch Calvinism:

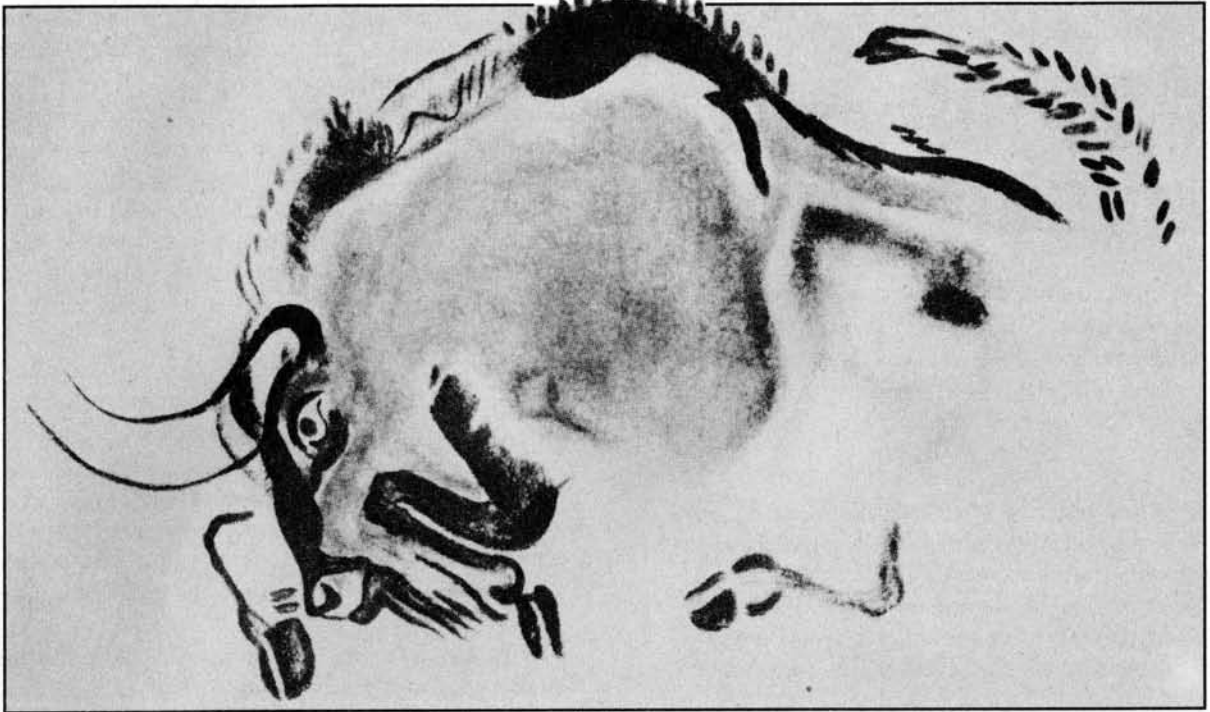
"Almost the first act of the early Calvinists was the destruction of the images of worship in their churches. . . The *De Stijl* artists. . . had similar reasons for their banishment of every representation of nature: any representation of a natural object was for them, a distortion of the divine purity of the laws of creation. Abstraction was the only way to maintain their faith in universal values."¹⁸

For Mondrian, as for Plato, nature was an inferior copy of an essential and beautiful original. Only a pure, geometrical image could reveal the moral and spiritual nature of existence, which was also the essence of art:

"One can express our very essence through neutral constructive elements; that is to say we can express the essence of art."¹⁹

Mondrian prophesied an aesthetic technotopia where organic forms would play no part in inspiring art:

"It would be illogical to suppose that non-figurative art will remain stationary, for this art contains a *culture* of the use of new plastic means and their determinate relations . . . This consequence brings us, in a future perhaps remote, towards



Cave painting of a bison at Altamira, Spain. "Art has always been a crucial means whereby we establish our place spiritually in the macrocosm. Its meaning, purpose and origin lie in that deep strata of hope and terror with which our ancestors, facing an overwhelming universe, sought to communicate with it."

*the end of art as a thing separated from our surrounding environment, which is the actual plastic reality."*²⁰

The environment of artifice would supplant the dual environments of nature on the one hand and art on the other, creating a new 'plastic reality' of platonic purity and abstract platonic forms: "an atmosphere not merely utilitarian or rational but also pure and complete in its beauty."²¹

Descending into Gimmickry

The pity of this fervent idealism is that it was implicitly directed against nature as a world of beauty in its own right. The concern with ultimate platonic forms is an attempt to escape the mess of experience and the fact that nature is, in no simple sense, rational. In practical terms it has resulted in geometrical abstraction, both in art and architecture, creating some of the most sterile and boring environments in human history.²²

The aesthetic integrity of people like Mondrian in the first wave of avant-garde theory is undoubted, and their best work is the design of beauty and tranquility. But their rejection of the untidy 'outer' world gave aesthetic credibility to the flight from nature, the full consequences of which they could barely have imagined, since their lives pre-dated a full and general awareness of ecological breakdown. It is the task of our time to evaluate their immensely influential art and architecture less sympathetically as a misplaced and naive idealism — a misunderstanding of the fact that even the most esoteric geometrism underlying, say, the building of a Hindu temple, puts on the flesh of organic and figurative forms in order that the divine essence may be manifest in terms of the living world. We can now see as folly their belief that humanity could actually construct physical and psychic states independent of nature, its forms and exigencies.

Their idealism is refreshing nonetheless, by comparison with the cynical nihilism of the later avant-garde. The repudiation of nature continues, but now it has a mercenary edge. As wave on

wave of avant-gardism broke over the arts, it inevitably became less 'avant', and represented ever more reactionary and commercial values. What started as high idealism has at times degenerated into expensive and fatuous entertainment for the contemporary bourgeoisie, whose palates are so jaded by novelty that they can scarcely distinguish significant originality from trite opportunism.

That relevant new ideas can degenerate into stupidity and dogma was fully recognized by one of the greatest and most inspired idealists of the early avant-garde, Wassily Kandinsky:

"Gradually the new value conquers man. And when many men no longer question this value, indispensable and necessary today, then it will form a wall erected against tomorrow."²³

Now, shallow novelty rather than deep necessity produces new art gimmicks, for the same reasons that motor manufacturers vary the superficial details of junk cars. Each creates an illusion of progress and value where none actually exists. This state of affairs has not been changed by the break-up of the theoretical monolith of modernism into the more eclectic phase of 'post' modernism. The last twenty years have seen some of the most flagrantly stated relationships between the content of art and the corruption of commerce. According to Mario Amaya, Pop Art was meant to have:

"popularity, transience, expendability, wit, sexiness, gimmickry and glamour. It must be low cost, mass-produced, Young and Big Business."²⁴

It is a recipe that could be used to describe any inferior consumer good. Such art is powerless in the expressing of meaning or universality. One critic described the work of the French 'artist', Yves Klein, as simply registering "the sociological reality without any controversial intention." There is no room for human concerns in this milieu of dead-pan banality.

The kaleidoscopic variety — yet essential sameness — of the later avant-garde is illustrated by Andy Warhol (1930-1987), a colourful charlatan and impresario of consumerism who con-

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fessed, perhaps tongue-in-cheek, that he really wanted to be a machine making, not art, but industrial products. His famous pop images include the tomato soup can and rows of juxtaposed Coca-Cola bottles. Whether he produced these as a satirical comment on supermarket culture or not, their real affect is to anaesthetize the consumer of mass production and vindicate its banality. We may be amused, but given the urgencies that now face us, is amusement with junk culture a strong enough aesthetic base on which to build an ecologically possible future?

As post-modernism emerged, so did a chic marriage of monetarist values and art. In one phase at least of his work, David Hockney (1937-) represents this 'monetarist' phase of aesthetics. His immense celebrity as a painter of swimmers and swimming pools is not due to any profound insight, but to the fact that he has hit a nerve of yuppie aspiration. Faintly cynical, tasteful, 'laid back' and ultimately shallow, these works give expression to the recent escapism of the new bourgeoisie; privileged denizens in a suburban culture, whose comforts are gained at the cost of stripping the planet of much of its resources.

The second part of this article will be published in our January/February 1990 issue.

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Hungarians demonstrating to stop the Nagymaros dam project on the River Danube. Ecological issues have been central to the campaign for greater democracy in Hungary. (Photo: Nagu Piroksa)

Turning Nightmares into Dreams: The Green Movement in Eastern Europe

by
Michael Redclift

Local concern over environmental degradation, together with increasing demands for political reform, has led to the emergence of green groups throughout the countries of the Eastern Bloc. Such movements have exposed problems in orthodox Marxist analysis and remind us that ecological politics cannot simply be understood in terms of Western capitalism. They illustrate how the ecological crisis is bound up with questions of human rights, freedom of information and democracy.

The demand for a more sustainable, more ecologically-sound way of life is now surfacing in Eastern Europe in a form significant not only for the democratization process in the East, but also for environmental movements in the West. It is becoming apparent that although environmental protest is often global in nature, and arises from a similar unease with the course of the current development process, such protest can also serve as a focus for very specific opposition movements, concerned as much with ethnic identity and alternatives to centrally planned economies, as with the breakdown of ecological systems. The emergence of green movements in Eastern Europe also highlights the difficulties which the environment

poses for Marxist theory, and the state's response under what Bahro has termed "actually existing socialism."¹

Marxism and the Environment

The environment poses a number of problems for Marxist theory. Any materialist philosophy, certainly one as concerned with historical transformations as Marxism, must attach weight to the environment and natural resources. The writings of Marx and Engels make considerable reference to the centrality of the natural environment, as numerous writers have demonstrated.² But Marxism envisages labour, capital and technology, rather than natural resources, as the dynamic ingredients in transformative social change. Although Engels, in two essays published in 1875 and 1876, drew attention to the possibility of man neglecting the laws of na-

ture, and having to live with the consequences, he still insisted that our understanding of nature — through science — enabled us to act to minimize any 'imbalances' or crises.³

Imbued as they were with the Promethean spirit of the late nineteenth century, neither Marx nor Engels saw ecological factors as a break on human possibilities. Indeed, notably in his critique of Malthus, Marx argued that there were no "natural limits" on human potential, merely the economic and political limits imposed by the way capitalism exploited resources. Marx made it clear in *Grundrisse* that "natural necessity in its direct form" was disappearing, since capitalism had replaced the needs created by nature with "historically created needs".⁴

The central problem for Green politics — that ecological imbalance and scarcity followed the creation of these "historical needs" — was hardly touched on by Marx

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"The latest Slovene opinion polls show that about 70 per cent of the population (some two million people) would support a Green Movement in Slovenia, if one existed."

and Engels, for whom scarcity was not a binding constraint. Human alienation from nature, which Marx saw linked to human alienation from labour, and the products of labour, was viewed exclusively as a feature of capitalist society.⁵ Human beings needed to reconcile themselves to the physical conditions of their existence, but this could only come about when those conditions of existence were transformed under communism.

Two other areas of Marxist theory also pose problems for the development of sound ecological policies: the way that value is conceptualized in Marxism, and the role accorded to science and technology in transforming human relations with nature. According to the Marxist theory of value, what distinguishes "value" is the amount of labour time embodied in commodities. The term "commodity fetishism" — later taken up by Green thinkers like Bahro as a central part of their critique of consumer society⁶ — was, for Marx, symptomatic of capitalism's distortion of real value. To ascribe a greater value to one of two commodities, each of which embodied an equal amount of labour, was a nonsense, according to Marx, but clearly happened all the time in capitalist society. Under communism, objects, whether precious gems or basic foods, would be worth no more than the labour embodied in them: their use value would no longer be more nor less than their exchange value.

The problem which such a theory presents for Green thinking is not difficult to identify: since value is not based on the inherent property of natural substances, but the labour that enters into their transformation, what "value" do we attach to the environment, or what Marxists have termed "external nature"? Marx's assumption, improbable as it may seem from the standpoint of the late 1980s, was that under the advanced forms of production which communism promised, there would be *both* an adequate supply of material goods *and* sufficient clean air, unpolluted water, fertile soils and plentiful forests to support any population. What we today call "carrying capacity" would not be an issue.



Air pollution levels being tested in Kishinev, the capital of Moldavia, USSR. In parts of Czechoslovakia and Poland, infant mortality rates have begun to rise again as a result of widespread air and water pollution.

Marx and Engels expected socialism to bring "social mastery" over nature, through the rational use of advanced technology. As Marx expressed it in the first volume of *Capital*, nature was "man's original tool house", the origin and source of capital.⁷ This extraordinary faith in technology was later echoed by Trotsky, who wrote:

"...the proper goal of communism is the domination of nature by technology, and the domination of technology by planning, so that the raw materials of nature will yield up to mankind all that it needs and more besides."⁸

Similar convictions were put even more forcefully by Lenin in 1920, who claimed that "Communism is Soviet power plus the electrification of the whole country."⁹

Marxist theory — and the convictions to which it gave rise — have thus encountered serious problems in adjusting to the scale and the nature of environmental issues. As Schmidt put it in *The Concept of Nature in Marx*, his classic text on the subject, "...there is no systematic Marxist theory of nature of such a kind as to be conscious of its own speculative implications."¹⁰ Or, as Bahro has expressed it, in what was to become a more revisionist stance, "...we can no longer share the spirit" with which Marx celebrated the progressive role of capitalist industrialization.¹¹

What has developed in most industrial societies (both capitalist and state socialist) is a profound unease at the way in which confident assumptions about industrial society have been systematically undermined by day-to-day experience — the creation of waste, the failure to solve

pressures on limited resources, and the increasingly restricted role for individuals to take responsibility for their own immediate environment and that of others in other societies.

These kinds of concerns strike at the heart of Marxist analysis, requiring either a total re-think of basic concepts or, alternatively, the jettisoning of Marxist theory itself as an analytical tool.¹² We are also left with practical problems to resolve. If, contrary to what Marx believed, human society is no longer capable of solving the problems it sets itself, how do societies forged within a Marxist framework resolve the contradictions of their own development? This is the question facing East European countries today.

Industrialization and the Environment in Eastern Europe

To understand the growth and direction of East European Green movements today, we need to direct our attention to the way in which the state has managed the environment, as well as social discontent, in the Soviet Union and its economic and political allies. In the Soviet Union and Eastern Europe, "socialist industrialization" was traditionally depicted as a unique attempt to establish heavy industry, usually in the shortest time possible. As Zeigler remarks, the dedication to five-year planning was linked to huge penalties and disincentives if planning targets were not met.¹³ The result was the "storming" of heavy construction works, and minimal attention to the environmental effects of major projects. Not surprisingly, those countries with the largest concentration of heavy industry

have, subsequently, faced the greatest environmental problems. Today, in parts of Czechoslovakia and Poland, even infant mortality rates have begun to rise again, as a result of widespread air and water pollution.¹⁴

In the course of the drive to rapid industrialization, which echoed the Soviet experience under Stalin, the political élites in East European countries sought to legitimize their own position through acquiring industrial technology from the West. Often this technology was already semi-obsolete when it was introduced. On the whole, the notion of the 'quality of life', an issue which has animated environmentalists in the West since the 1960s, was seen in the Eastern Bloc countries as faintly 'exotic'.

Bureaucracy

The extremely bureaucratic and top heavy administrative structure of Eastern Bloc countries has also contributed to environmental degradation. The excessive fragmentation of different departments of government, each with a different environmental concern, is not a peculiarity of communist governments, but in some ways it is even more pronounced in Eastern Europe than in the West. Environmental issues tend to fall between departments, and lose visibility as a result. In addition, within a socialist economy, primary materials for projects are provided effectively free of charge; there is no market mechanism to reflect even the cost of extraction, inadequate as this may be.

To compound the problem there has been a serious lack of 'feedback' as environmental problems have emerged. This lack of awareness and willingness to act is, in turn, related to the official view of state planning as 'rational' — according to objective, socialist principles: thus government intervention to protect the environment is only considered justified if it is supported by value-free (socialist) science. Decisions about the environment should be taken on 'technical' as well as 'political' grounds. Especially in the Soviet Union, the leading distinction within the 'official' camp is between those who favour policies of unrestrained growth, in other words, a continued quest for socialist industrialization, and the scientists and policymakers who urge a larger role for technical factors. Most people in both camps reflect a boundless confidence in technological 'fixes', both to achieve growth objectives and to undo the conse-

quences of unsustainable economic growth.

The essential element in the management of the environment, as of much else, is the Administrative Command System (ACS), which is not only responsible for environmental planning, but also sets the tone of most social responses to it.¹⁵ Until relatively recently, most movements of social protest over the environment were, in fact, supplementing the official actions of the ACS. As we shall argue, this is decreasingly the case today: environmental movements, most notably in Hungary, Yugoslavia and Poland, see themselves as an alternative, rather than a complement, to the ACS.

Information Management

Until the era of *glasnost*, secrecy was an important characteristic of Soviet environmental planning. Information was collected quite systematically about air and water pollution, for example, but it was published in a much less systematic form, partly to obscure the facts and to hinder comparison.¹⁶ More recently, reliable data has appeared on a variety of subjects central to environmental planning: child mortality figures have been revised, and information on levels of air pollution and environmentally-linked illness have appeared.

Just three years ago, Zeigler presented a picture of "information management" in the Soviet Union which had scarcely changed since Stalin. Under the state corporatist model he outlined, the role of the media in the Soviet Union was to "mobilize bias", not of middle-class opinion (or 'middle America') as in the West, but of privileged bureaucratic interests. Environmental issues were only discussed after they had been explicitly or implicitly approved of: at this stage they were submitted to the media and the media was left to communicate the state's objectives. Recognizing that, even in his first year of office, Gorbachev had begun the long task of reform, Zeigler commented: "We can only speculate about the environmental consequences should the Soviet Union initiate a major reform programme."¹⁷

The events following the Chernobyl accident may only have dented Soviet technological hubris, but there is little doubt that they did prompt some serious re-assessments of environmental risk. Today, about 40 people from the Soviet Union's independent environmental movements participate as Deputies of the Supreme Soviet, and expanding interna-

tional contacts have helped forge links between Soviet citizens involved in environmental campaigns, and Green activists abroad.

Ecology Movements: The New Opposition

To appreciate the range and current direction of environmental movements in the Soviet Union and Eastern Europe, we need to examine the specific combination of factors which has led to their evolution, and the challenge that they represent to the established order — the ACS — in these countries. Individual countries have experienced a specific range of environmental problems, and the political debate surrounding these issues are linked, in a variety of ways, to non-environmental aspects of the current political situation. It is worth reviewing some of these experiences:

The Soviet Union

According to research undertaken by Yanitsky, based both on interviews with over 100 key environmental activists, and on an analysis of candidates' election programmes for the position of Peoples' Deputy, environmental movements in the Soviet Union are on the threshold of some fundamental changes.¹⁸

For the first time in the history of the country, independent movements are emerging, not as part of the ACS, but in opposition to it. These movements are composed of well-educated, sometimes well-connected people, whose aim is to ensure that environmental issues are fully

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discussed before policies are framed. According to Yanitsky, "in the course of *perestroika* a qualitatively new situation began to develop" in which groups of citizens have drawn attention to environmental problems from outside the state structure, with the aim of co-opting scientific opinion on to the side of dissent.¹⁹ These movements see themselves as "environmental defenders from the encroachments of the ACS".

Unlike previous groups of nature conservationists, some of which had limited official support, these movements "realize that their bitter enemy is neither pesticides nor technology, but the system which makes use of them".²⁰ Attention has increasingly shifted from criticism of the actions of the ACS — in areas such as the deployment of new nuclear power plants, industrial enterprises, canal construction and other public works — to criticism of the system of planning itself, and the way that production is financed and organized.

Most environmental activists are imbued with similar values to those in the West, placing emphasis not simply on ways and means of effecting change but on alternative systems of values. In some parts of the Soviet Union, notably the Baltic Republics of Estonia, Latvia and Lithuania, these alternative environmental values are closely linked, in specific ways, with the programmes of the nationalist Popular Fronts.

According to Yanitsky's calculations, the membership of environmental groups in the Soviet Union is similar to that in many Western countries: about eight per cent of the urban population over 14 years of age are at least passive members of environmental groups, and about one per cent are active members. Efforts to enlist the support of scientists and technical experts are especially marked among residents' groups.

The activities of environmental groups constitute part of the move towards the gradual creation of an autonomous civil society in the Soviet Union, outside the parameters of the state bureaucracy. However, as in the West, the growth of ecology-conscious opinion still faces major handicaps, notably in convincing industrial workers that restructuring the economy need not lead to the loss of their livelihood.

Hungary

Hungary provides the clearest example of popular mobilization around environ-

"As protest groups become transformed into political parties, there is a very real threat that environmental demands will be given less emphasis than economic reforms designed to open up the economy to market forces."

mental issues. In the 1970s, the environmental movement in Hungary was confined to parts of the monolithic one-party system. There was little discussion of the limits to growth, or the applicability of environmental problems in capitalist industrial societies to socialist ones.

Much of the impetus for the growth of the environmental movement was provided by the attention being given to global concerns in other countries, which increasingly led people to ask about environmental problems in Hungary. Ecological threats appeared to go hand-in-hand with other important economic problems and to require major financial investment. This gave rise to demands for closer supervision of state-funded projects and scrutiny of their environmental implications. It was realized that ensuring environmental standards implied a transfer of resources from other sectors of activity, and a longer time-horizon in which to make decisions.

In Hungary in particular, early opposition to the government's environmental policies helped to create the conditions in which the demands for greater democracy were framed. During the 1970s, lobbying by environmental groups was instrumental both in changing legislation on the environment and in charting the evolution of those state institutions responsible for environmental management. Persanyi calls the official organizations of the state the "traditional players", and it is these groups which, through their neglect of participatory demands, helped stimulate a wider ecological consciousness.²¹ Hungarian citizens, he notes, have "become dissatisfied with the opportunities offered by the traditional organizations directed from above in accordance with Stalin's driving-belt principle" — that is, the idea that state organizations are "driving belts" between the party and the people.

The real breakthrough for the opposition movements came during 1988, when groups opposing the building of a series of dams on the Danube came together to voice their opposition not merely to the new dams themselves but to the thinking

behind them. It became clear, as Persanyi explains, "that environmental protection was as policy-free as the wooden horse of Troy was soldier free."²² Moreover, the arguments over the Danube dams drew on other concerns which were not strictly ecological: the demand for a new model of political management united different opposition forces, socialists, social democrats, liberals, Christian democrats and nationalists, as well as radical ecologists.

Nonetheless, as these groups become transformed into political parties — now possible under the new democratic reforms in Hungary — there is a very real threat that environmental demands will be given less emphasis than economic reforms designed to open up the economy to market forces. Indeed, such are the differences in attitudes and values amongst Hungary's environmentalists, that, in Persanyi's view, "if a Green party were created in Hungary in the near future the majority of environmentalists would stay out."²³

At the same time, there is undoubtedly a much broader basis to environmental consciousness than is likely to be reflected in electoral support for Green groups alone. Local environmental campaigns — from the protests at Heviz over the effects of bauxite mining, to demonstrations against the planned dumping of radioactive waste from the Paks nuclear power plant near Ofalu, and the protests over urban air pollution, especially in Budapest — have all highlighted the wider political implications of environmental protection, and the state's role in the destruction. Indeed, because opposition groups used ecological issues as part of a broader campaign for democracy and citizenship, environmental consciousness is widely diffused in Hungary. The successful setting up of formal, democratic political parties is thus very unlikely to lead to a reduction in environmental consciousness, although the current move to greater democracy might not immediately benefit the ecological opposition.

Poland

The 1980s have also seen the rise to prominence of an opposition movement in Poland, in the form of Solidarity. Outlets for collective action that were previously closed have opened up new areas for political dissent, and groups have formed around a plethora of causes — from ecological and consumer groups to movements for the promotion of entrepre-

neurship. Most of these movements have not been examined in depth, but a series of studies have been undertaken of local community activity in Poland, and have recently been summarized by Jalowiecki.²⁴ What follows is an abridged version of this analysis.

As a result of the government's refusal to give assurances to local people that their communities would be protected from the worst ravages of "redevelopment" schemes, numerous "citizens movements" have sprung up throughout Poland. In the town of Augustow, for example, a movement emerged in 1982 when a group of 27 smallholders challenged the expropriation procedure under which the city council acquired land for housing development. Local farmers, invoking favourable land-use legislation, sought to reverse the official decision. Initially, environmental protection was a secondary issue but it gradually gained prominence as people from nearby towns were drawn into the wider debate about development planning priorities. The local movement succeeded in forcing a decision to revise the city plan in 1987.

The movement in Rabka had similar roots, emerging after about 30 farmers protested against the planned expropriation of their holdings in a beautiful, mountainous region earmarked for residential development. As in Augustow, the adversaries were the city planning office. The protesters argued that development would interfere with the ecology of the area, destroying the landscape and changing the microclimate. In due course, allies were found in the Polish Ecological Club, the Association of Polish City Planners and the central political authorities. Although the local environmental group was denied official recognition, the Society of Friends of Rabka had, by 1987, halted the original development plan.

Similar local movements sprang up in Gloskow, where local market-gardeners opposed a plan to introduce high-density development: again, environmental protection initially emerged as a secondary issue, but later grew in importance, becoming linked to the whole question of citizens' rights.²⁵ Although slightly different in form, Polish urban movements have also seized on environmental protection, which has been invoked by local people seeking to reverse urban planning decisions.

Other movements have had less parochial influence. The best example is probably the movement opposed to the storage of radioactive waste from a prospective

atomic power station at Miedzyrzecz Wielkopolski. The issue in this area, once the documents outlining plans had been leaked, was the risk posed by the waste dump to a large urban population, and additionally, the threatened destruction of a natural habitat for one of Europe's most important colonies of bats.

All these protest movements emerged from what was seen as the infringement of the rights of individuals or groups to be consulted in the planning process. In the course of the protest campaigns, however, it was the issue of environmental protection which came to exert the most important influence: what was at stake was the violation of a broader system of values, in which long-term sustainable objectives were sacrificed in favour of short-term economic benefits. Far from simply upholding sectional interests, these movements came to represent the protection of the common good.

Yugoslavia

The success of environmental movements in Yugoslavia has been influenced by several of the factors already discussed, especially the democratization process, which has favoured greater recognition for the "nationalities" over the centralized state. In many respects, though, Yugoslavia's proximity to the West — geographically and politically — has given greater emphasis to the international dimensions of domestic ecological issues. Most of the adherents to the Green movement, in Slovenia at least, are young and critical of what they see as the rigidity of state socialism. The state has sought to enlist them in support of official environmental programmes, but this has proved a daunting, if not impossible, task. As Kos argues:

"Before the producers of ideology realized that their efforts were directed to an empty space, the young developed their own political life. The so-called marginal, alternative sub-culture of the young has become openly political."²⁶

Subsequent protest has often been in consort with Green movements in other countries: together with Italian ecologists, Yugoslav Greens opposed the projected coal-fired electric power station in Milje, on the Italian side of the Yugoslav/Italian border. With Austrian environmentalists, Yugoslav activists opposed the disposal of radioactive waste in Yugoslavia. Some actions have been even wider, such as

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Yugoslav participation in the European Youth Forest Action campaign.

Awareness of the perilous state of Yugoslavia's environment has spurred official government institutions into several initiatives, including a major conference in 1987 on "Ecology, Energy and Saving". However, the declaration which emerged from the conference had hardly any practical political effect.²⁷

Much more important in political terms was the establishment of a Green Union in Slovenia in early May 1988. In its published programme, the Union explicitly states that official institutions are unable to deal adequately with environmental problems, while their actions are exclusively concerned with alleviating environmental damage *after* the event, rather than with the promotion of alternative, ecologically-conscious development policies. By early 1989, there were about 25 societies actively involved in environmental protection in Slovenia. These locally-based organizations are able to enlist a great deal of 'casual' support. A recent street demonstration in Slovenia, for example, saw the participation of an estimated 100,000 people to demand changes in the way the Slovene environment and natural resources are managed.

Opinion polls on environmental issues in Yugoslavia show an awareness of Green concerns that is increasing almost daily. According to Kos, the latest Slovene opinion polls show that about 70 per cent of the population (some two million people) would support a "Green Movement" in Slovenia, if one existed.²⁸ Not all of those polled were aware of the existence of environmental movements in Yugoslavia.

The ecological agenda is seen as necessarily international, and subversive of the model of "socialist industrialization" still favoured by the party orthodoxy. As young people become more disaffected with official socialist politics, they gravitate towards local, ecological action, rarely showing interest in national-level Yugoslav institutions, preferring instead to forge links with similarly-minded people in other countries.

The New Opposition

The emergence of Green movements in Eastern Europe has significance for a number of reasons: these movements expose problems in orthodox Marxist analysis; they remind us that ecological politics cannot simply be understood in terms of Western capitalism; and they serve to illu-

"The ecological agenda is seen as necessarily international, and subversive of the model of 'socialist industrialization' still favoured by the party orthodoxy."

minate the way in which the ecological crisis is bound up with questions of human rights, freedom of information and participatory democracy.

The historical circumstances that separate the two economic systems in Europe have given rise to opposition movements with separate agendas, but shared objectives. In Western Europe, the Green movement has emerged to challenge the "official opposition", represented by social democratic, Christian democrat or communist parties. In Eastern Europe, Green politics — allied to demands for human rights and recognition of ethnic aspirations — has developed as part of the growth of civil society. In a serious sense, the new Green movements of Eastern Europe are the political opposition, although often their activity is focused at the local level.

What has forged these Green movements is the guiding principle that people have a right to decide how their own resources and environment are managed, and the role of government is to respond to their wishes. Belated international recognition of the limits to resource exploitation has merely lent more urgency to essentially domestic preoccupations.

Signs of a Rethink

One indication of the success of the Green movement in the Eastern Bloc is that official Marxist ideology is now being criticised from within the state bureaucracy. For example, researchers at the Academy of Sciences in the German Democratic Republic — in this respect, as in so many others, one of the least reconstructed states — no longer see environmental problems solely as a contradiction of capitalism. There is now a belated, but explicit, recognition that "at a later moment natural barriers (add) a new dimension which cannot be overcome any longer by the logic of the (large scale) technological mode of production."²⁹ What is required, in the view of these East German researchers, is that "priority (be) given to preventive environmental policy".³⁰ This paper, and others

like it, concede that the more technological innovations incorporate environmental considerations, the more necessary it becomes for environmental policy to be subject to greater democratic control. More sustainable environmental management has to be translated into democratic action.

The same issue is raised in even clearer terms in the context of Poland. As Jalowiecki comments:

"The crisis now being experienced by the socialist countries springs from a planning illusion. It was assumed that nationalization of the economy would clear the way to central control of the flow of capital goods and human behaviour for the good of society as a whole. It turned out, however, that interests within society are conflicting, that extreme centralization of decision-making not only does not reduce, but may actually encourage, deviant behaviour, that there is no algorithm for guiding complicated economic and social processes, and that bureaucratic control is none too effective."³¹

A New Agenda

It is a paradox of economic development in Eastern Europe that a "second path" to industrialization, by extending the role and influence of the state, has only served to exacerbate environmental problems, removing their solution from the hands of those worst affected, and putting it into the hands of those for whom immediate economic growth must have priority. But this model leads to its own undoing: the "concrete utopias" which people believe in are increasingly not those of "actually existing socialism" but of the movements of ecological opposition.

There are clearly social contradictions as well. Environmental activists in the Soviet Union and Eastern Europe, rather like their counterparts in the West, are overwhelmingly well-educated, young, and usually middle-class. The compass of their protest is much wider, of course, but this appeal cannot be read from their class position. As Kos expresses it, "...in this respect the new social movements under socialism are indeed something quite new, because individuals act as citizens and not primarily as working people".³² It is not the dictatorship of the proletariat that environmentalists are pursuing, but the democracy of civil society, the emancipation of the citizenry.

At the same time, the demands of the new environmental movements carry a momentum that appears to place them outside history, as it were, as part of a wider, global imperative. Links to the scientific community are valued not because of the 'scientific' claims of the dominant ideology, but because it is felt that, in a better world, science might come to the aid of the people, and the environment. Ethnicity is emphasized, because it is important in its own right, in societies whose political boundaries do not describe the boundaries of ethnic groups, but also because an attachment to the land and natural resources is deemed part of the individual's ethnic identity. Ethnic identity and environmental consciousness function as two sides of the same coin.

Green movements have arisen in response to strong, existential needs, for the utopian as well as the pragmatic, for citizenship and 'the people', rather than the ubiquitous 'masses'. Achieving environmental objectives requires more democratic control and the espousal of different values. Improved environmental management, in Eastern Europe as in the West, will be more insistently demanded, without in any way constituting a panacea. As more information is made available, so more will be demanded. As more attempts

are made to reform existing bureaucratic practices so they lose what legitimacy they possess. It is not as the bearer of "post-material" values that the Green movements in Eastern Europe are most important. But as the bearer of dreams which, not very long ago, threatened to become nightmares.

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A Land Divided: The Impact of Ranching on a Pastoral Society

by
Olivia Graham

For the Maasai, Kenya's best-known pastoral group, individual land tenure was traditionally an alien concept. Land was held communally and could not be owned by anyone: it could only be used. However, under pressure from the World Bank, individual land tenure was introduced in the mid-1960s. Since then the Maasai's traditional rangelands have been progressively subdivided — first into group ranches and now, increasingly, into individual holdings — with severe ecological and social consequences.

Kenya is a country much beloved of the Western world. Since its Independence in 1961, it has never been greatly troubled by ideas of socialism, equality, or revolution like so many of its African neighbours. It has never entered the USSR's sphere of influence, and its style of development, which many would call very successful, has been unashamedly capitalist and free market. The few lone voices which have spoken out against the increasingly high cost of such development in terms of social and economic inequality and marginalization have been subjected to increasingly brutal suppression, detention and torture — a political style which has come to characterize the late 1980s.

Land-Rights: A Key Issue

Land-rights in Kenya are and always have been a thorny and emotional subject. It was the issue that provided the tinderbox and the goal of the independence movement in the late 1950s. For rural Kenyans who practise agriculture, as well as for those who are now town-dwellers, the farm or *shamba* is "home" in a sense which is rather hard for our mobile and unspiritual generation to understand. The ownership of land (whether through outright title or on long-lease from the government) is the dream of the landless and the joy and pride of the landed. Even people who have been urbanized for many years will still have their *shamba* back home where they will expect to be buried.

Olivia Graham has worked for a number of years on pastoral development issues in East Africa.

However, for the 2.6 million pastoralists in Kenya — those who do not live by digging the soil but from the products of their herds — the individual ownership of land is an alien idea. Animals can be owned, but the land cannot be owned, it can only be used.

Perfect Adaptation

The Maasai are one of Kenya's main (and probably the best-known) pastoral groups. They have traditionally herded their animals over vast areas of arid and semi-arid savannah bush in a perfect homeostasis which has been maintained by the periodic appearance of droughts and epidemics. When numbers of people and animals have dwindled, the rangelands have had a chance to recover their productivity. Control over grazing rights rested with the elders of the sub-tribes or sections and access to water and pasture have been equitably granted. Wealth is reckoned in terms of livestock, and while it is by no means equally distributed, it is generally thought of as being the gift of a fickle God. The Maasai have long observed that the number of cattle a person has is subject to sudden reversals and ownership of wealth is therefore not considered to be a permanent state, or one which reflects on the merit of the owner.

A series of treaties with the British colonial administration in the early part of this century removed permanently from the Maasai a large part of their most fertile land for use by white settlers. This land comprised important areas of dry season grazing and "fall-back pasture" during

periods of drought. The white settlers carved out enormous farms and ranches which they exploited in what was no doubt a commercially sensible fashion. The Maasai became more vulnerable to drought.

An End to Communal Rights

The Maasai are now confined to two districts in Kenya, Kadjiado to the south of Nairobi and Narok to the west. In the mid-1960s, major donors, including the World Bank, offered Kenya massive funding for the development of the pastoral areas under the Kenya Livestock Development Project (KLDP). The aims of this project were to create conditions under which the rangelands could make a far larger contribution to the national economy, mainly through encouraging commercial beef production.

As a prerequisite for the loan, the Bank demanded that legislation be passed to replace communal land tenure by a system more responsive to market forces. Individual ranches would have been the ideal, but although a number of more entrepreneurial Maasai had already acquired individual title to areas of rangeland, it was recognized that this would not be the answer for the majority, since there was not enough land for everyone to have a viable ranch. Instead, the new legislation allowed the setting up of group ranches, a form of tenure in which a number of men (representing between 30 and 900 families) jointly became the owners of a piece of rangeland which was then managed by an elected committee.

The Group Ranching System

The KLDLP, by its own criteria as well as by everyone else's, has been a howling failure, and the World Bank's record on livestock development projects has not improved in the intervening years. However, the legacy of the project, the group ranch system, has marked a point in what seems to be the inevitable and irreversible transition from communal to individual tenure of the Maasai rangelands.

Group ranches have had many problems, and it is doubtful if they were a great improvement on the traditional style of land use. Many were poorly adjudicated and have little or no dry season grazing within the ranch boundaries; some have no permanent water source; the committees have tended to be dominated by the élite who in some cases have used their positions to acquire resources for themselves.

Nonetheless, in ecological terms, it makes sense to keep land holdings in such a fragile area as large as possible. In that respect, group ranches are probably not as undesirable as they might appear — and with adjustments to the legislation and some political will, they could be made to work. Local rainfall ranges between 200 millimetres (mm) and 600 mm and is highly variable both spatially and temporally. In the traditional system, animals were moved to where it had rained. Even under the group ranch system, Maasai will move their animals off the ranch if there is no pasture. One of the major achievements of group ranches has been to keep the rangeland in Maasai hands and to prevent people from outside the area from acquiring it for speculation or (in higher potential areas) for agricultural use.

Sub-Dividing the Land

There is now a powerful move towards sub-division of the group ranches. Four of the Kadjiado group ranches have already sub-divided and 14 more are in various stages of sub-division. It is no surprise that all 18 of these ranches are in the higher potential areas of the district where rainfall and therefore "carrying capacity" is higher, and the prospects for commercial production thus better.

Many feel the move to sub-divide the group ranches is the result of direct political pressure from central government — pressure which may originate in the commonly-held view that nomadic or semi-nomadic pastoral life is backward and

"The intensified use of land which is environmentally fragile will lead to degradation. Like on a board game, some people will be wiped out of play by a sudden drought while others will see their resources diminish gradually year by year, go into debt and finally be forced to sell."

selfish and does nothing to promote "nation-building", a watchword of the regime. Certainly there are many on the group ranch committees who are in favour of sub-division, arguing that smaller private holdings prevent the problem of squatters, facilitate loan agreements, and make individuals more responsible for their own problems.

But there are good reasons to believe that the majority of Maasai, especially those in the drier areas, do not want to sub-divide and are very worried about being left with a small and economically unviable piece of land.

In the 1960s, it was reckoned that an individually-owned ranch in an area of medium to high potential had to be at least 800 hectares (ha) in order to be a viable family unit. If all group ranches were to sub-divide (based on the 1986 membership) and each member were to get an equal share of the ranch, then nearly two thirds of the members would receive less than 100ha. Add to this the fact that some of this land is in areas with rainfall as low as 300mm, and it quickly becomes obvious that sub-division will cause major social and economic suffering.

The problem is compounded by nearly every ranch having a large number of unregistered sons of members, who, if they do not manage to arrange registration before sub-division occurs will find themselves dispossessed. Their only hope of access to land will then be to wait until their father's death and the division of his holding. Units will thus get smaller and smaller in the future. However, it is not in the interests of the existing members to allow registration of members' sons now, since this will increase the numbers having claim to the group ranch on sub-division.

It has been suggested that group ranches should not be divided equally between their members, but proportionally according to how much livestock each member owns. Although one can see the attraction such a scheme holds for those who have

large livestock holdings, if implemented, it would leave the poor without the means to improve their lot. It would thus lead to permanent stratification of wealth.

Many of the sub-divided individual ranches have already been sold, most of them into non-Maasai hands. Whereas the Maasai traditionally do not recognize the idea of land ownership, other groups in the country are only too aware of property rights, and the land close to Nairobi is becoming increasingly valuable for speculative purposes. Much of the higher potential land is now being farmed by non-Maasai, or just held for the future.

Condemned to Poverty?

There will be few winners from sub-division — and those who are likely to be worst affected are women. The law which enabled group ranches to come into existence excluded the possibility of women being members of a ranch in their own right (in traditional Maasai society men own the livestock, while women own little except their personal jewellery). Although sub-division cannot take place without the agreement of 60 per cent of the registered members, this is a small proportion of the people who will actually be affected since all women and young people are excluded from the process. Yet women will undoubtedly be worse off as a result of sub-division since it will almost certainly lead to an increase and an intensification of their work load. Worst of all, title to sub-divided land is issued only in the name of the head of the family — almost invariably a male — who is not legally obliged to consult his wife before the sale of land. This coupled with, in some cases, an imperfect understanding of the meaning of land sale, may well lead to a large number of women finding themselves destitute.

The intensified use of land which is environmentally fragile will lead to degradation. Like on a board game, some people will be wiped out of play by a sudden drought while others will see their resources diminish gradually year by year, go into debt and finally be forced to sell. Those who are rich or lucky, but mainly the rich, will see their wealth grow, their possibilities for diversification increase and their lives become more secure. Is it possible that any of this wealth will "trickle down" to the less fortunate? It is more likely that they will become landless and end up (if they are lucky) in low paid manual jobs, caught in the poverty trap. A sad prospect for a proud people.

Trade and Self-Reliance

by
Paul Ekins

According to orthodox economic theory, world trade is beneficial to both the poor suppliers of raw materials and the rich industrialized consumers. However, present trading patterns, far from enriching the Third World, are leading to further impoverishment of the mass of its peoples, and locking them into an international market over which they have absolutely no control. Although the international economic environment is profoundly hostile to autonomy and self-determination, Third World governments must seek to establish trading strategies which promote self-reliance at a local, national and regional level.

"It is by now quite commonly accepted that a liberal trade regime is superior to a highly restrictive one in producing economic efficiency."

*International Monetary Fund,
March 1989¹*

Whatever its relation to 'economic efficiency and growth', it is not at all apparent that increased trade alleviates poverty. Between 1965 and 1985, world trade increased from \$500 billion to \$1,600, in constant 1980 dollars.² Yet, as World Bank President Barber Conable said in September 1988: "Poverty on today's scale prevents a billion people from having even minimally acceptable standards of living. To allow every fifth human being on our planet to suffer such an existence is a moral outrage."³ Has the phenomenal increase in world trade in the last two decades helped, held back or been irrelevant to this 20 per cent of humanity?

The Realities of Trade

Benefiting from trade depends, in economic theory, on several fundamental assumptions. Two of these are, firstly, that *exchange is voluntary*, and, secondly, that *both parties gain from the exchange*. On the basis of those assumptions, trade is inevitably beneficial since, if it were not, one or both parties would withdraw and there would be no trade.

Unfortunately the world is not as uncomplicated as economic theory implies. Consider the position of a small Third World country trading food and/or miner-

als with an industrial nation for consumer goods and capital equipment for its manufacturing sector. At the start of the trading relationship, the prices for the Third World country's commodities are high enough for fairly ambitious industrialization plans to be entertained. Such plans are further boosted by international borrowing and by the growing taste for Western goods and lifestyles amongst the country's ruling élite.

As time progresses, however, the country's commodities decline in value relative to imported goods; the interest rate payable on the debt rises; and the US dollar in which the debt is denominated also rises against the local currency. Anxious to maintain their lifestyles and/or their country's industrialization process, the country's rulers seek to boost production of their primary commodities, which, with many countries in the same position and because of the relative scarcity of such commodities worldwide, puts further downward pressure on their prices. Still more land has to be cleared of subsistence farmers to produce for the world market. And a still higher proportion of the country's foreign exchange has to be used to service its debt, rather than to buy productive assets for future prosperity.

In what sense now are there 'gains from trade', especially for the small farmer who has paid with his land and livelihood for his country's growing export-orientated economy? In what sense can this exchange be said to be 'voluntary'?

The Power Factor

With variations, this is the brutal everyday experience of dozens of countries and millions of people worldwide, especially

during the 1980s. In formulating their innocuous assumptions, the economic theorists somehow forgot one crucial ingredient: power, the ability to coerce countries to participate in the market against their better interest or, more subtly, to foster policies that allow 'open' trading today but bring dependency tomorrow. The eminent American socio-economist, Amitai Etzioni, makes no such omission:

"Power is so pervasive in the economy that . . . for all intents and purposes *there are no transactions among equals*. . . Prices, in general, reflect *supply and demand and relative power*."⁴

The implications for trade are clear. Differences in relative power can both distort market-prices, so that the gains from trade only go to one of the trading partners, *and* enforce participation in a contract which is essentially exploitative. Far from being an automatic passport to prosperity, trade can just as easily be an instrument of bondage.

Internal Inequalities

If differences in relative power between countries can influence their relative gains from trade, precisely the same is true of such differences within countries. This was well illustrated by the recent development of a 8000 hectare palm oil plantation in Mindanao in the Philippines. As Belinda Coote documents, the land to be 'developed' was already occupied by subsistence farmers who were cleared off their land with considerable bloodshed by a private army employed by those Filipino vested interests which stood to gain from the plantation.⁵ Nor did most of the erstwhile self-employed cultivators find em-

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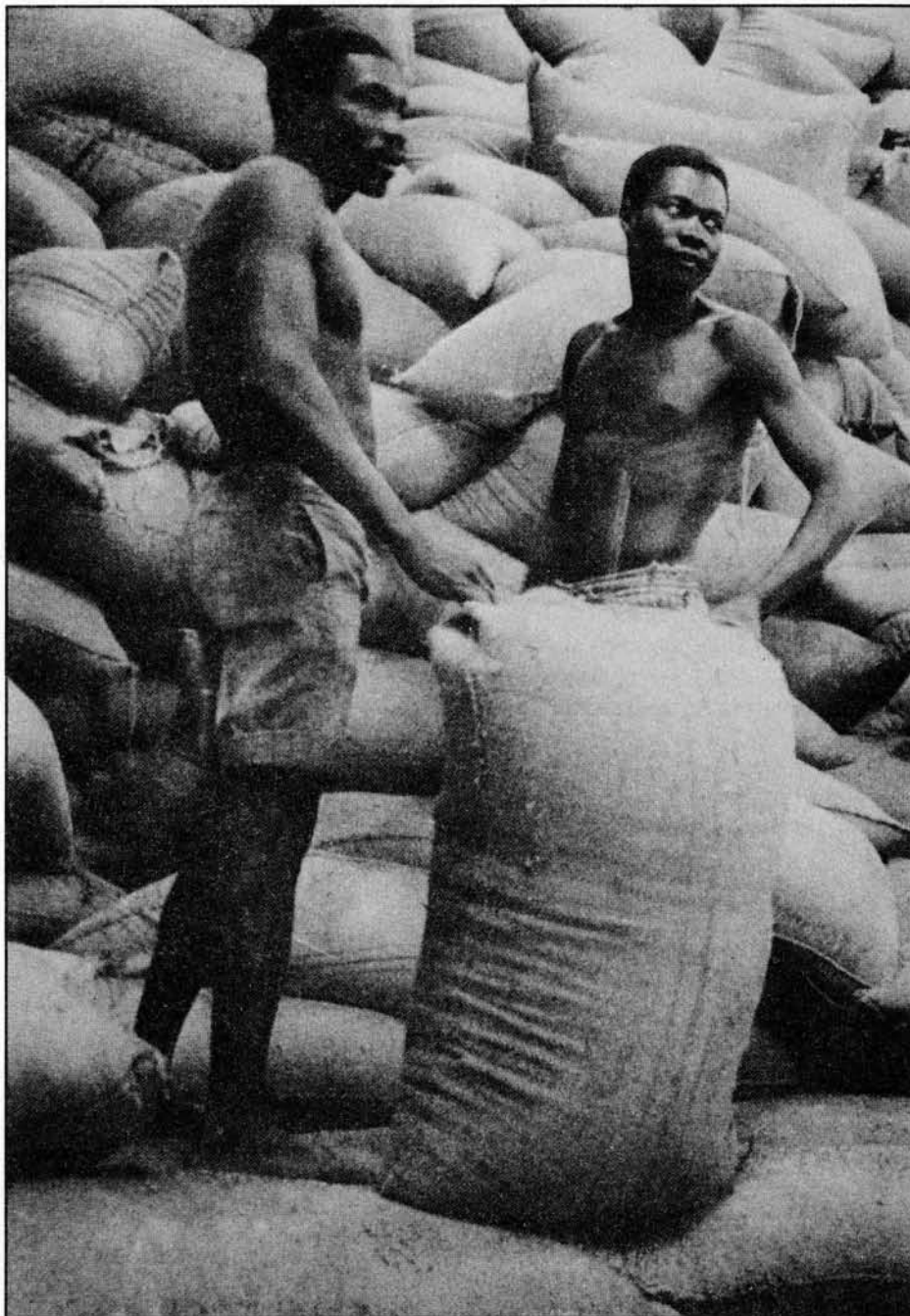
ployment in the plantation once it was established. Some years after their dispossession, Coote reported hundreds of farmers still camped on the outer perimeter of the plantation, destitute and utterly hopeless — truly trade or development ‘refugees’.

The plantation doubtless boosted world trade figures and the Philippines’ own Gross National Product — not least, perhaps, because the peasants’ own produce would have been consumed by themselves and would not therefore have registered in the official figures. But for those interested in the well-being of poorer people in the world, it is not enough to know whether a trading project is going to benefit a poor country as well as a rich one. It must also benefit the poor people in the poor country, rather than simply aggrandize the small, wealthy élites that, for the most part, dominate even the poorest countries.

Comparative Advantage

Modern theories of trade rest principally on the key concept of ‘comparative advantage’, and the consequent desirability of specialization and division of labour. A country should focus its productive resources on whatever commodity it produces most efficiently (that is, cheaply) relative to other countries, producing just that commodity and trading the surplus for other commodities from other countries. In that way, it is argued, total world production will be maximized.

Quite apart from the question of how this increased world production would be distributed, there are a number of straight economic objections to the basic proposition that pursuing “comparative advantage” would in fact bring higher production levels.⁶ Comparative advantages — and the economies to which they apply — are not invariant through time, but evolve under the influence of technological and other changes. Thus specialization in one area of comparative advantage today may pre-empt the development of a favourable comparative advantage in the future (the “infant industry protection” argument). Again, one comparative advantage may be inherently more dynamic and economically beneficial than another. For example, as Wolfgang Sachs points out, specializing in chemicals is likely to do more for the development of productivity and a trained labour force, and yield more technological spin-offs, than the cultivation of coffee beans. Moreover, one comparative advantage, say in raw materials, may over time



Classical economics assumes that exchange is voluntary and that both parties gain from the exchange. But the real world is more complicated. Their economic and political power enables the richer countries to coerce Third World nations to participate in the market against their better interest or, more subtly, to foster policies that allow ‘open’ trading today but bring dependency tomorrow. (Photo: FAO/Mattioli)

become less advantageous relative to another, say in manufactured goods (this is of course Prebisch’s argument on deteriorating terms of trade).⁷

These uncertainties — all of which arise from the surely indisputable fact that economies change over time — mean that the existence of a present comparative advantage is far from being an automatic guide to the prudence of specialization. Even if it did provide such a guide, the question of specialization itself opens up a whole range of issues closely related to the question of power discussed above. Specialization essentially involves providing

only a portion of one’s consumption through one’s own labour and resources, and exchanging for the rest. If that portion is rather a small one, and if it excludes certain basic needs, then one is dependent for one’s basic welfare — and perhaps even survival — on others’ continuing desire to exchange. At the very least, such a situation leads to vulnerability and insecurity and thus circumscribes political autonomy. It is surely suggestive that even those industrial countries strongest on free trade rhetoric, such as the USA and EEC countries, are sufficiently sensitive to issues of security to spend vast sums build-

ing up their home agricultural bases. How much more should poorer countries, with far less scope for enforcing their will on the world economic stage, seek to meet their basic needs from their own resources?

Trade and the Environment

Trade can affect the environment either directly *qua* trade, or indirectly through its effect on production patterns. With regard to the former, there are three immediate consequences of a commodity being exchanged and consumed elsewhere, rather than within its country of origin.

Firstly, more energy will be consumed in transporting the commodity to its point of consumption. Secondly, longer distribution chains present greater opportunities for environmental costs to be externalized. Consumers of a product are less likely to care about (or even be aware of) the pollution entailed in its production if this takes place in a different country rather than in their own town. Thirdly, insofar as trade promotes economic growth, it must be held responsible for the environmental degradation which historically has been the consequence of such growth. These considerations suggest a negative correlation between trade and environmental quality.

As for production patterns, it is possible that goods produced for export will have a different environmental impact to those produced for home consumption. Thus the production of hamburgers for Western markets has been linked with the destruction of the Central American rainforests. Susan George has further suggested that the rampant export of primary resources by many Third World economies in response to present levels of international indebtedness leads to unsustainable exploitation of those resources.⁸

There is also the question of the marginalization of subsistence producers when the resources on which they depend are converted to production for export. As Timberlake puts it:

"Planting the best land in cash crops, which almost invariably use less labour than food crops, can push large numbers of subsistence farmers and herders onto marginal land, resulting in desertification."⁹

There appear to be no positive benefits to balance these negative impacts of trade on the environment.

Trade and the Multinationals

Without doubt, the most significant change on the international economic scene in the last two decades has been the growth of Transnational Corporations (TNCs). Much TNC production is traded across borders and therefore follows the usual pattern of international trade as an international market transaction. But a large and increasing volume of international transactions do not follow this pattern, being cross-border transfers of goods or services within different parts of the same firm. It is impossible to be precise about the extent of these intra-firm transactions, although Sheila Page has cautiously estimated that they may amount to 20 per cent of world trade.¹⁰

From the point of view of international accounting, these transactions are registered as 'trade' because they show up in a country's balance of payments and it would make no sense to treat some imports and exports differently from others. But intra-firm transactions are *not* trade in the sense of international market transactions. In fact they are a negation of the efficiency of the international market, because the TNCs involved produce these internally-

traded items within their own subsidiaries and 'buy' them from these tied sources, rather than shop round for the desired item on the international market.

Viewed in this light, TNCs are effectively giant areas of bureaucratic planning in an otherwise market environment. They are distinct from state enterprises because they are privately owned and they rely on more or less competitive market outlets for their final products, unlike many state enterprises which are effectively monopolies. But these distinctions do not alter the fundamental similarity between giant corporations and state enterprises: both use hierarchical command structures to allocate resources within their organizational boundaries rather than the competitive market (and it should be remembered that many TNCs have a greater turnover than many countries).

There is thus a strange contradiction in attitude in those who simultaneously profess a belief in 'free trade' and 'the market' while encouraging the formation and freedom of action of transnational conglomerates whose *modus operandi* is the antithesis of market liberalism and is far more akin to the planned economies which free traders are supposed to hold in such abhorrence.

Self-Reliance as Autonomy

'Free traders' tend to have a horror of self-reliance, often equating it with protectionism, inefficiency, economic distortion, injustice and ultimately, poverty and repression. Yet the literal alternative to self-reliance is 'reliance on others', a prescription which is equally undesirable, conjuring up as it does visions of dependency and vulnerability.

I want to put forward the concept of self-reliance as autonomy, that is, the possession of the power to control the course of events which most influence one's own future. This is not a new insight. For example the Cocoyoc Declaration of non-aligned countries in 1974 stated:

"Self-reliance means self-confidence, reliance primarily on one's own resources, human and natural, and the capacity of autonomous goal-setting and decision-making. It excludes dependence on outside influences and powers that can be converted into political pressure."¹¹

Autonomy is fundamental to the concepts of human rights and justice. People — and therefore communities, nations and regions — should not be subject to im-

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sitions by other people which impair their ability to live lives according to their own legitimate priorities and preferences. The market and its price mechanism is quite unable to guarantee this outcome, as has been stressed by the economist Kenneth Arrow:

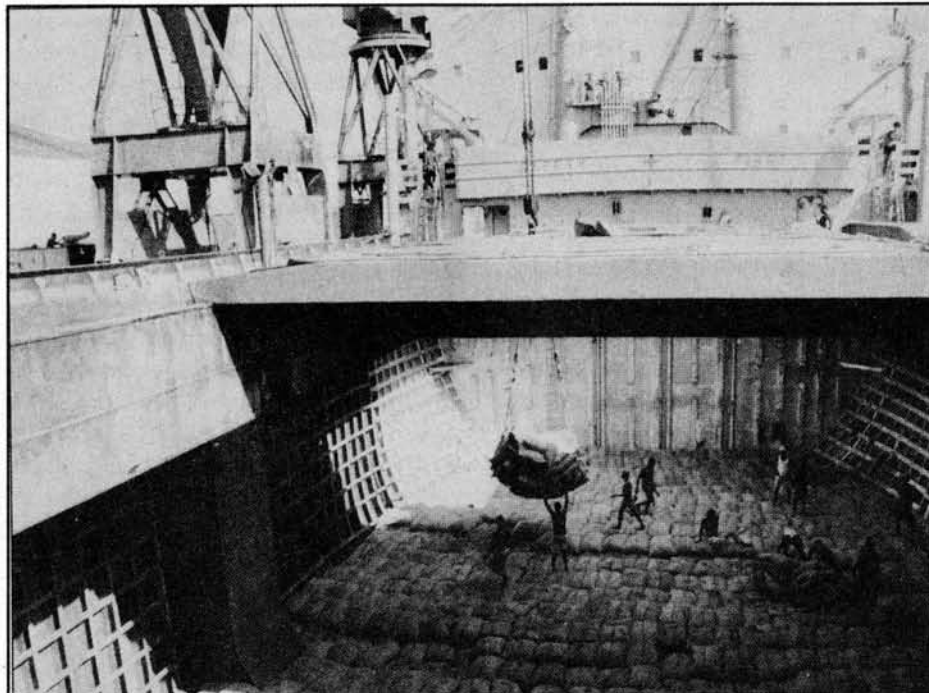
"The price system tends to obscure the fact that low income is a restriction of freedom . . . The market in no way prescribes a just distribution of income and the idealization of freedom through the market fully disregards that for many relatively poor people this freedom is circumscribed indeed."¹²

Such circumscription of freedom, of course, amounts to a loss of autonomy. Characterizing self-reliance in this way puts it at the heart of much new thinking in development economics, such as Amartya Sen's concept of 'capabilities' ("The process of economic development can be seen as a process of expanding the capabilities of people");¹³ Ian Miles' description of human development;¹⁴ or five Asian scholars' formulation of a new theory of rural development.¹⁵ Such a concept of self-reliance was also one of the five components of the pioneering *Another Development* strategy proposed by the Dag Hammarskjöld Foundation in 1975.

Self-Reliance as Responsibility

If self-reliance has ethical appeal because of its connection with autonomy, it has economic appeal by virtue of its stimulus to greater responsibility. The great bane of the market mechanism as an allocator of resources is the pervasiveness of externalities — costs or benefits, be they social, environmental or financial, which fall on third parties outside the exchange which is mediated by the price mechanism. If they are costs, externalities ensure that too much of the relevant commodity is traded or, equivalently, that its price is too low. If they are benefits, externalities produce a lower than optimum supply of the good.

Self-reliance is relevant in this context because of the link between autonomy and responsibility. Economic agents who have control over their destiny, but no undue influence over that of others, are likely to have to bear the primary responsibility for their activities. In environmental terms, this means that the polluter will pay, the pollution-causing product will cost more, the consumer will thus also pay more and buy less, bringing the economic outcome closer to the market optimum.



Third World countries have little to export except the produce of their soil. Declining terms of trade and increasing indebtedness have combined with ecological degradation to enmesh the poorer nations of the world in a poverty trap from which they cannot easily escape. A move towards greater self-reliance is their best hope for the future. (Photo: FAO/Mattioli).

Self-Reliance in Practice

There are good reasons why it has so far proved so difficult to implement a policy of national self-reliance outside of the large economies of China and India. The reasons are partly economic, partly political, and, most importantly, partly due to the rigours of self-reliance itself.

The economic obstacles to self-reliance are the least substantial. They are normally thought to derive from the inadequate size of the country concerned, so that the domestic market is too limited to permit the economical manufacture or cultivation of a wide range of goods, thus imposing unacceptable costs. Such an analysis is valid if self-reliance is perceived as implying a high degree of self-sufficiency in production, but that is not the case I am promoting. What is at stake is not self-sufficiency but *autonomy*, and there is no *a priori* reason for supposing that small countries automatically have a disadvantage in this respect. On the contrary, such states as Switzerland, Sweden and Austria would appear to have just as much autonomy as their larger neighbours.

Another example which illustrates this point is South Korea. South Korea is normally perceived as the opposite of the self-reliant state, with a very open economy and an aggressive policy of export-led growth. Doubtless there is much truth in

this description, but there is a good deal of evidence that the key to South Korea's present success in the global market rested on achieving prior domestic self-reliance (in the sense of autonomy). Thus, as Sen points out, a vigorous policy of import substitution and state investment were all key elements in building up the country's domestic economic capabilities before initiating the drive towards exports.¹⁶ In addition, as De-Silva *et al* describe, the Saemaul Movement in South Korea's rural areas, with its "spirit of diligence, self-help and co-operation", was specifically intended to build indigenous rural capabilities.¹⁷ It can thus be convincingly argued that these three basic strategies for self-reliance — import substitution, active state intervention and participatory rural development — laid the foundations for South Korea's subsequent ability to choose the open trading strategy it has now adopted. Whether this self-reliance will survive South Korea's current intimate and probably inextricable embrace of the international market remains to be seen.

The Politics of Self-Reliance

The concept of self-reliance as autonomy moves the discussion beyond economics into the realm of politics, which is the real proving ground for self-reliance. Self-reli-

ance cannot be the outcome of weak or corrupt government. *Laissez faire* policies are not an option for the self-reliant nation. Moreover, self-reliance demands informed, sensitive and sustained political commitment: it cannot be imposed, but only enabled. Abdalla and Aziz put this well:

"Self-reliance is not simply a policy option decided upon by governments. It means much more than what economic and social development strategies contain. Indeed self-reliance is closer to a way of life proposed to the society at large as well as to each of its members. It is a call for self-confidence, for belief in the built-in capacity of people to improve their living conditions, material and non-material. It could never be implemented by

decrees since in essence it is a societal attitude and an approach to concrete problems."¹⁸

No less daunting than the political obstacles to self-reliance is the sheer practical difficulty of its achievement, especially when those concerned are generally starting from a position of acute dependency, poverty and inferiority. As with addiction to drugs, tobacco and alcohol, the economic and social dependencies and exploitative relations of class, caste, gender, race, colour or whatever are notoriously difficult and painful to break. Indeed, it is not surprising that the resolution to persevere with a strategy of self-reliance is often only born of desperation. As activists from Bhoomi Sena, the 'land army' of tribal peoples from the hills around Bombay, have declared:

"Self-reliance is an ideal for us but it is also linked with our practical situation; without this our struggle will not develop... Soft options will divert us from the hardship of the struggle, which will be long and arduous."¹⁹

Trade for Mutual Self-Reliance

A trading strategy which seeks to promote mutual self-reliance is thus desperately needed. The essential thrust of such a strategy should either be to build up a country's productive capacity or to decrease its consumption. The former implies an increase in the country's capital assets — interpreted in the widest possible sense to include social and organizational (or 'human') capital, as well as physical and ecological capital. The latter implies improvements in efficiency and conservation. For trade to promote mutual self-reliance, either or both of these aspects should be present for both countries.

The implementation of such a strategy demands political strength and sensitivity. It will need these qualities at all levels: international, national and local. At the international level, a new agreement is urgently needed to define the basic international context of economic activity, not least through abandoning those institutions and policies which specifically promote free trade.

In the meantime, governments must do the best they can in an international economic environment profoundly hostile to autonomy and self-determination. National policies should seek to thrust both outwards and inwards. The outward thrust should be to try to find trading partners for mutual self-reliance on a bilateral basis, or

better still to seek to establish regional trading blocs of countries at a similar economic level. Governments should also seek to identify and procure appropriate technologies to increase productivity, efficiency or conservation, or all of these.

Domestically, national governments should aim to enable the poor to mobilize and to develop their human potential. Abject poverty is not just a human tragedy; it is a waste of a nation's most precious resource, its people.

The most important task of a self-reliant strategy is to start to realize some of this potential.

This article is an edited version of a longer paper. The full text is available from the author: School of Peace Studies, University of Bradford, Bradford, West Yorks, BD7 1DP.

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BST: the Public Health Hazards

By
Samuel S. Epstein, M.D.

In both Britain and the United States, the public is unwittingly being sold unlabelled meat and milk from cattle treated with Bovine Somatotrophin (BST), a genetically engineered growth hormone, which is currently undergoing secret field trials in both countries. Permission is now being sought to licence BST for marketing in both the US and the European Community. Yet, contrary to repeated assurances from industry and government that BST poses no public health risks, there remain a wide range of unresolved questions on the human health effects of consuming products from hormonally treated cows. In addition, there is a growing body of evidence that BST induces adverse veterinary effects.

Bovine Somatotrophin (BST)—a genetically-engineered version of the natural Bovine Growth Hormone (BGH)*—is manufactured by the Agricultural Chemicals Division of Eli Lilly and Company (Elanco), in conjunction with the Dow Chemical Company, and the Upjohn Company. Its methionyl analog, met-BST, which contains an additional amino acid called methionine, not present in naturally occurring BGH, is manufactured by American Cyanamid and Monsanto.

The use of such biosynthetic milk hormones raises fundamental ethical, social and economic considerations, including the continued viability of the small family dairy farm. Both BST and met-BST also pose significant potential public health hazards which have not so far been investigated in depth. The worries over BST are further exacerbated by industry's virtual domination of research into BST and met-BST; by the failure of BST manufacturers to disclose their unpublished data; and by the refusal of the authorities in both Britain and the US to insist on milk and meat from cows treated with biosynthetic hormones being labelled, thus denying consumers their "right to know".

Industry Claims on Milk Hormones

The pharmaceutical industry has used a number of highly misleading strategies to justify its claims as to the benefits of biosynthetic milk hormones. In particular, it has:

- Exaggerated the efficacy of milk hormones;
- Omitted reference to well documented evidence of adverse veterinary effects;
- And failed to undertake the studies needed to elicit adverse veterinary and public health effects.

A recent promotional report from the Animal Health Institute (AHI)¹ sums up the industry's position. It states that biosynthetic hormones increase milk yields by an average of 10-25 per cent; that milk quality is unchanged; that increased hormone levels are not found in milk; that there are no adverse effects in treated cows; and that the biosynthetic hormones are safe as they are not biologically active in humans.

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The AHI report quotes with approval from a milk hormone production trial conducted by Cornell University ("It appeared that the cows were simply unaffected") and emphasizes that "subsequent studies at more than 20 universities confirm many of these observations." The report omits reference, however, to the wide range of adverse effects noted in about half the limited number of met-BST production trials so far conducted (see 'Adverse Veterinary Effects' below) and makes no reference to met-BST, except incidentally in an efficacy graph. Finally, the report makes no reference to the highly variable and inconsistent yields in the milk production trials.

Apart from these misrepresentations, the claims are based on small numbers of cows (7-10) per test group. Reassurances that increased hormone levels are not found in milk are also suspect since they take no account of either hormone dose-response relationships or the increased blood levels noted in several studies (see 'Potential Adverse Public Health Effects' below).

Adverse Veterinary Effects

Data on the adverse veterinary effects of hyperstimulating cows by daily injections of BST and met-BST are sparse, and based on incidental findings in small-scale milk production trials. Such findings, which have been trivialised in industry promotional material, include:

• An Induced Negative Energy Balance:

Biosynthetic milk hormones induce a negative energy balance, similar to that which occurs in the rising phase of lactation. Increased milk production is paralleled by a reduction in total body fat, excessive tissue loss, and excessive growth of foregut tissue.² This sustained negative energy balance appears to be associated with increased stress and susceptibility to infectious disease and with measurable changes in the composition of milk.

• An Increased Incidence of Infectious Diseases:

In a met-BST trial, conducted by Cyanamid in Pennsylva-

* Throughout this article, the biosynthetic version of the natural growth hormone is referred to as 'BST': the natural hormone itself is referred to as 'BGH'.

nia, udder infection (mastitis) developed in 4 out of 8 cows receiving a dose of 12.5 milligrams per day (mg/d) and in 2 out of 7 cows receiving 50 mg/d. In another trial, again conducted by Cyanamid (but this time in Missouri) high cell counts, suggesting inflammation of udder tissue, were observed at doses of 25 mg/d. A trial, also in Missouri but carried out by Monsanto, revealed high cell counts at all dosages.³ In addition, a high level of unspecified infectious disease was noted in 1 out of 9 trials.⁴

- **Reduced Fertility:**

Evidence of reduced fertility was noted in 4 out of 9 trials.

- **Heat Intolerance:**

Heat intolerance was noted at two dosage levels in 1 out of 9 trials.⁵ Such intolerance could pose particular problems if biosynthetic hormones are used in tropical climates.

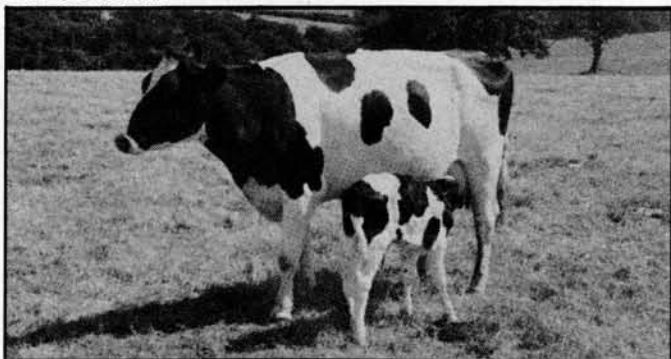
Questionable Efficacy

The adverse veterinary effects of BST and met-BST are not necessarily offset by improved milk production. Contrary to promotional claims, the effects of BST and met-BST on milk production are highly variable and inconsistent. In nine met-BST trials, elevated yields were obtained in two herds whilst very poor responses were found in another two herds. According to one researcher, D.S. Kronfeld: "About one-third of all BST-treated herds would be predicted to fall between the consensus low limit of 10 per cent more milk and my estimate of minus one per cent based on the nine trials."⁶ A severe reduction in milk yield has been noted in hormone-treated cattle — notably "burn out" or lactational crash — particularly at high dose levels, although no data are available on the incidence of such reductions.

Other Growth Hormones in Milk

Apart from the unresolved questions on incremental BST levels and met-BST levels in milk, 'Insulin-like Growth Factors' (IGF-1), whose production by the cow is stimulated by milk hormone injections, have been detected in milk of BST-treated cows. Based on the very limited available data, IGF-I levels in treated cows' milk appear to be sustained at high levels, similar to those found in untreated cows after the first week of lactation.⁷

Moreover, the normal inverse relationship between growth hormone levels and blood insulin levels is disturbed following BST treatment.⁸



Industry has not only exaggerated the efficacy of biosynthetic milk hormones but has also played down the evidence of adverse veterinary effects. (Photo: *Farmers Weekly*)

The Impact on Public Health

A recent editorial in *The Lancet* warned that before allowing biosynthetic milk hormones to be marketed commercially, "One would need to be completely reassured that the appropriate tests have been carried out thoroughly and professionally and that there is not the slightest hazard to human health."⁹ In fact, despite strident industry assurances as to their safety, biosynthetic milk hormones pose serious potential risks to public health which have not been adequately considered.

Biosynthetic BST: A 'Natural' Hormone?

Industry's claim that biosynthetic milk hormones are "natural" is false. Both biosynthetic BST and met-BST are xenobiotics — that is, they are compounds which are not found in nature.¹⁰ The natural bovine growth hormone (BGH) consists of a protein of 191 amino acid residues in linear sequence. The Elanco biosynthetic hormone, however, has a series of 8 additional amino acid residues, known as linker protein, at one end of the molecule.¹¹ In addition, BST is synthesized on a bacterial rather than a mammalian ribosome, and will thus have a different three-dimensional structure and possibly different biological activities from natural BGH. The more potent met-BST has an alien methionyl amino acid residue at one end of the protein molecule. The US Food and Drug Administration (FDA) has recently admitted that biosynthetic milk hormones "are about 0.5 to 3 per cent different in molecular structure" from the natural hormone.¹²

The Biological Activity of Milk Hormones

Industry initially claimed that natural BGH was "species-specific" to cattle, and thus could not possibly have any effects in humans. However, BGH is now known to be biologically active in a wide range of species including goats, pigs, sheep, mice, and even fish. Accordingly, the industry has changed its position and now claims that BGH is "species-limited".¹³

According to Monsanto, BGH derived from pituitary glands was shown in the 1950s to have "no effect on human growth, sexual development or well-being".¹⁴ Yet, BGH is immunologically different from the human hormone, and differs structurally in some 30 per cent of its amino acid residues. While BGH is inactive in all primates, it should be noted that the human growth hormone is only active in humans when given in high (milligram) doses. Moreover, no studies on humans have been conducted with biosynthetic milk hormones, especially the more potent met-BST, which are chemically different from natural pituitary BGH.

Furthermore, it was demonstrated some 30 years ago that partially digested natural BGH was biologically active in humans, inducing nitrogen retention.¹⁵ Thus, biosynthetic milk hormones could be directly active in humans following absorption of novel protein fragments, formed during pasteurization or proteolytic digestion in the alimentary canal. In addition, the intact hormone molecule could be absorbed into the blood from the digestive tract, particularly by newborn babies and in infants or adults with impaired protein digestion resulting from diseases such as cystic fibrosis. Absorption of intact protein molecules has been demonstrated in newborn babies and some adults.¹⁶

Secrecy, Intimidation and Illegality

In Britain, secret field trials using BST are being conducted at 10 farms throughout the country. One thousand cows are involved. Britain is alone amongst EEC countries in pushing for the introduction of BST, despite calls from the National Farmers Union, the dairy industry and consumer groups for a ban on BST.

Mr John Gummer, the Minister of Agriculture, has given an unequivocal assurance that BST is safe. However, according to Professor Richard Lacey, a member of the Ministry of Agriculture's Advisory Group on Veterinary Products, scientists involved in assessing the BST field trials have been unable to challenge Gummer's statement due to the threat of prosecution under the Official Secrets Act and the Medicines Act if they reveal the deliberations of the AGVP. Lacey also alleges that a Ministry statement on the safety of BST, purporting to reflect the views of the AGVP, was in fact drawn up by ministry officials in consultation with the drug companies prior to the AGVP even meeting. "The statement was presented to us as a *fait accompli* and did not actually take account of what happened at the meeting," Lacey recently told *The Guardian*.

In the US, the Food and Drugs Administration (FDA) decided — on the basis of allegedly confidential data — to exempt BST and met-BST from its 'Investigation New Animal Drug' (INAD) procedures. In September 1986, the FDA Com-

missioner stated in a letter to Representative Tony Coelho of the House Committee on Agriculture:

"Sponsors have not been required to measure the increase of BST in milk of treated cattle over that in milk from untreated cattle. Rather the safety of BST is based on the limited quantity of BST administered on a daily basis and the fact that BST is not biologically active in humans or other primates."

In granting the INAD exemption, the FDA is in apparent violation of Section 512 of the 1968 Animal Drug Amendments to the 1938 Federal Food Drug and Cosmetic Act (FFDCA). The FFDCA amendments require the agency to have a "prescribed and approved" test method for determining whether the drug is being improperly used with resulting illegal residues in food. At present, such a test is not available.

The FDA's assurances as to the safety of BST are based on standard toxicological protocols which are largely irrelevant for evaluating the safety of biosynthetic milk hormones. (Significantly, field trials using protocols designed primarily for evaluating the effects on milk production have revealed adverse health effects.) Of particular concern is the agency's failure to require appropriate multilactational and multigenerational studies into a wide range of potential veterinary and public health effects.

Significantly, the industry recently admitted that "some proteins are absorbed into the blood stream without being fully digested."¹⁷

Industry has also claimed that increased BST levels are not found in the milk of dosed cows.¹⁸ In a recent publication purporting to confirm these claims, however, the upper range of levels in cows treated with 25 mg/d of BST was more than 50 per cent in excess of controls.¹⁹ Furthermore, dose-response relationships for plasma BST levels in the range of 5-30 parts per billion have been reported.²⁰ Up to 700 per cent increases in the levels of plasma BST have been reported following BST dosing in late lactation, a finding confirmed by several researchers.^{21,22} However, excess BST levels have not been reported in milk assays by industry and its contractees. Clearly, milk from treated cows should be assayed by independent scientists using techniques which have yielded clear-cut results with plasma.

The Biological Activity of Growth Factors

There is a growing consensus that the pituitary growth hormone acts via the induction of somatomedin growth factors, particularly IGF-1, which appear to be identical in both cattle and humans.^{23,24} Most of the specific activities of BGH, including milk production, glucose synthesis, diabetogenesis, nitrogen retention, fat breakdown, cell division and bone growth, are mediated through somatomedins. Moreover, mammary gland receptors for IGF-1 have been identified.²⁵

Increased IGF-1 levels have been reported in goats' milk following BST treatment.²⁶ High levels of IGF-1 are found in normal cows' milk immediately after calving, falling to 1-5 parts per billion by 200 days.²⁷ However, levels induced by daily injections of BST were sustained at 6-20 parts per billion. Thus, irrespective of the possible impact of BST itself on humans, the

effects of BST on cell division could be indirectly induced in humans by sustained incremental levels of IGF-1 and other somatomedins. Such effects could include premature growth stimulation in infants, breast growth in young children, and breast cancer in adult females.

A recent publication insisting that BST technology is sound, nevertheless warned: "Investigation of IGFs requires attention, particularly where animal health and food residues are concerned since they possess many biological activities and are immunologically and biologically similar among species. Some concerns arise as to the possibility of abnormal levels of IGF-1 in the milk of BST-treated cows and, with it, consumer health."²⁸ Another publication warns: "The implications of IGF-1 in milk for the human infant cannot be determined until we know more about the activity and function of milk IGF-1 in the newborn. However, total growth factor activity in cow's milk, as assessed by a cell proliferation test in vitro which also detects components other than IGF-1, is not altered by BST treatment."²⁹

In addition to detailed studies on IGF-1 levels in the milk of treated cows, priority should be given to studying the effects in humans of exposure to increased levels of IGFs, particularly since some consumers have already and unknowingly been exposed to BST milk; this at risk population should be identified and subjected to long term surveillance. Systematic studies on IGFs should include dose-response in vitro investigations with human cells and tissues, and dose response studies in infant and adult primates, with a view to defining the effect of incremental IGF milk levels in humans.

Hormonally-Induced Stress

The levels in milk of stress metabolites, induced by BST, met-BST and other hormones, such as adrenalin and the steroid

hormone cortisol, should be determined by sensitive and specific assays. The stressing action in humans of these metabolites should be investigated.

Hormonal Milk and Infectious Disease

The stressing effect in cows of BST, met-BST, and somatomedins may suppress the body's immune system and activate latent viruses, such as Bovine Leukosis Virus (BLV), and Bovine Immunodeficiency Virus (BIV) which increases susceptibility to other infectious agents. Levels of such viruses in hormonally treated milk and their human infectivity should be investigated with particular reference to the risks of immunosuppression and leukaemia. The relationship between these viruses and the AIDS complex is of further concern, particularly in view of the infectivity of BIV to chimpanzees.

Antibiotics in Hormonal Milk

The increased incidence of infectious diseases, which has been noted in efficacy trials and which is presumably stress-induced, is likely to result in increased antibiotic treatment and antibiotic levels in milk. Accordingly, the incidence of infectious diseases and of antibiotic milk levels should be investigated with particular reference to the risks of antibiotic resistance in the general population.

Allergies and Hormonal Milk

The allergenic and immunogenic effects in humans of met-BST in milk, and of novel peptides resulting from its pasteurization or digestion, should be investigated. It should be noted that there is substantial evidence on the high incidence of antibody development in humans treated with methionyl human growth hormone,

rather than with the natural hormone.³⁰

Fat-Soluble Carcinogens in Hormonal Milk

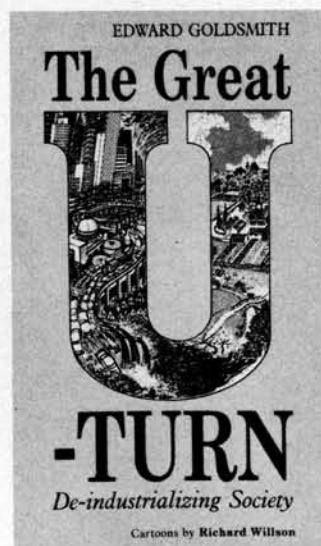
The fat and milk of cattle are contaminated with a wide range of carcinogens including pesticides, such as heptachlor epoxide and dieldrin, and xenobiotics such as PCBs and tetrachlorodibenzodioxin. The lipolytic effect of hormonal treatment is likely to mobilize carcinogens from body fat and increase their milk levels, a matter of particular concern in young infants. For these reasons, levels of fat soluble carcinogens in hormonal milk should be determined.

Nutritional Quality of Hormonal Milk

Data on the effects of hormones on the nutritional status and composition of milk, including protein sub-fractions, vitamins and minerals, are minimal. However, it is clear that the hormones induce a wide range of measurable changes in milk composition. Up to 27 per cent higher fat levels have been noted in BST-treated milk.³¹ Furthermore, there is a statistically significant increase in long chain fatty acids and a decrease in short chain fatty acids — an effect which is associated with a reduction in casein, in relation to total protein, which is likely to decrease subsequent cheese yields.³² Such significant changes in the composition of milk in hormonally-treated cattle are becoming increasingly recognized.³³ The nutritional quality of hormonal milk should be investigated in multilactational and multigenerational tests.

The Abuse of Milk Hormones

The use of BST as a growth promoting hormone in calves and sheep has also been reported. In the event that registration should ever be granted to biosynthetic milk hormones, there would be no



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practical method to prevent their extensive misuse — a problem which is well-documented for sex growth hormones — or to detect and even monitor for such misuse. BST and met-BST could thus be administered at excessive dosages to lactating cows or as growth stimulants to calves, sheep and other cattle, increasing still further the public's exposure to these highly potent biological agents.

Public Policy Recommendations

1. The manufacture, domestic sale and export, including foreign licensing agreements, of biosynthetic milk hormones should be banned immediately. This ban should remain effective until a wide range of concerns on public health, and veterinary safety, have been fully resolved.

2. The sale of milk, milk products and meat from hormone-treated cows should be embargoed immediately. To insure compliance, industry and its academic contractees must be required to identify all treated cows and herds immediately.

3. Attempts should be made to identify and place under long term medical surveillance all consumers, especially infants, who are at potential risk from having consumed BST and met-BST contaminated milk, milk products and meat.

4. The industry and its academic contractees must be required to make full disclosure of all unpublished data and reports immediately; claims for confidentiality must be legally pre-empted on the grounds of over-riding concerns on public health and welfare.

5. The conduct of industry, and of its academic contractees, should be subject to a full investigation.

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6. In the US, the conduct of the Federal Drugs Administration in exempting BST and met-BST from tests as a new animal drug (see box) and approving sale of hormonal milk, in apparent violation of the Federal Food Drug and Cosmetics Act, should be subject to legal challenge and Congressional investigation.

7. The industry must be required to develop and undertake multilactational and multigenerational dose-response and other protocols appropriate for the investigation of potential adverse public health effects from hormonally contaminated milk, milk products and meat. Such research should be subject to continuous independent review. These protocols must include: specific and sensitive assays for BST, met-BGH and other growth factors; investigation of the biological activity of these hormones and growth factors in milk; analysis of milk for stressor chemicals; investigation of the biological activity of such stressor chemicals at levels expected in hormonal milk; analysis of milk for antibiotics necessitated by treatment of stress-induced infections in lactating cows; analysis of milk for stress-induced or activated viral agents; analysis of milk for increased levels of fat soluble carcinogens mobilized by BST or met-BST; investigation for the allergenicity and immunogenicity of met-BST, and of any resulting novel peptides; investigation of the response to vaccines of treated cows; and detailed analysis of the nutritional quality of hormonal milk.

8. The industry must also be required to fund research in accordance with the approved protocols, which should be awarded, supervised and otherwise administered by an independent intermediary.

PROTEST against the introduction of BST by filling in the form on the back cover of this issue.

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Arne Naess gives his support to Edward Goldsmith's "The Way"

The following review amounts to a support of the cosmological theory of Edward Goldsmith and also a report of how I conceive such support.

Starting with the latter, I have to go back all the way to the eminent *Schlick Seminar* in Vienna in 1934/35. There the logical empiricists weekly discussed fundamental questions at the university and then continued their discussions for hours in coffee shops. One of the phrases they used made a lasting impression on me: "Perhaps the formulation is not quite a happy one" — "*Vielleicht ist die Formulierung nicht ganz glücklich.*" It expressed a disagreement, but not by phrases such as "Your formulation is perhaps not a quite happy one", "You are mistaken", "That is wrong", "That is perhaps not quite right", or "I disagree with you". The focus was on a definite verbal articulation of a view, not on the person uttering the formulation, and not on any definite presupposed meaning. The appeal was to reconsider the formulation and to discuss interpretations. Perhaps a reformulation could be found which they all could agree upon, perhaps not. And if not, one might find out how deep a disagreement was implied — whether it was somehow decisive or only peripheral.

Why did they as intelligent, independent philosophical minds try to find common ground? Largely because "the world was burning". German nationalism, the increase of fanatical Nazism, and the persecution of Jews were proceeding at a frightening pace. Students came to the philosophy department uttering in anguish "What should I believe?", "I must believe in something!" They went away sorely disappointed, and perhaps re-read Spengler's *Untergang des Abendlandes* or Hitler's *Mein Kampf*. The eminent (Jewish) psychoanalyst Eduard Hirschmann told me one day how his daughter had to jump out of the window of the university to escape Nazi



students. The university was a battlefield.

The logical empiricists felt that indirectly they could contribute in their way to the (feeble) opposition. Their contribution demanded an abstention from academic quarrels about inessentials. The dominant atmosphere was hostile. When a student murdered Moritz Schlick on the steps of the university, nationalist newspapers said it was tragic, but a good thing for German culture.

There are of course great differences between the situation of the logical empiricists in the 1930s and the supporters of the deep ecology movement of the 1980s. Personally, I feel there is a resemblance, and that the phrase "Perhaps the formulation is not an entirely happy one" suggests a general way of seeking a common ground in a critically important non-violent fight.

Who said what, is relatively unimportant. Disagreements are unimportant if peripheral. Theoretical proposals are studied in the hope of finding something tenable and useful for further search — or for communication to a wider audience. Proposals are not primarily studied in order to find

weaknesses, but to find the strong points and to elaborate them. A common terminology is a good thing, but also the friendly coexistence of different technologies. As a supporter of the terminology of 'deep ecology', I do not at all feel that I must publish the reasons why I stick to 'my' terminology instead of adopting Richard Sylvan's or that of others whom I feel are fellow workers within a similar field.

In the light of the foregoing, I am glad to study and to support the great effort of Goldsmith to articulate "a very tentative world-view or cosmology in the form of a set of 67 laws or principles". I shall interpret them my way and make use of them, perhaps propose modifications of some of them. Some may not be, in my view, "entirely happy".

Without, I hope, overestimating the importance of the terminology of 'deep ecology', I shall discuss some of the comments on deep ecology found in the special issue of *The Ecologist* (Nos 4/5, 1988).

The Eight Point Platform

Goldsmith affirms that he agreed with the eight points which Sessions and I set out and which constitute a proposed platform of Deep Ecology. So far so good. Of his 67 laws or principles he says that he doubts "if these laws will be accepted by the Deep Ecology Movement. Among other things, they are concerned with a host of theoretical issues, with which few are likely to be conversant" (p.160).

The formulation of the eight points has at least two rather different functions: (1) a descriptive one expressing a hypothesis on which most supporters of the deep ecology movement agree on a fairly abstract and general level; (2) a proposed set of principles, including prescriptions (norms), for further support of the movement.

Clearly most of the 67 laws or prin-

ciples are, as Goldsmith says, beyond the scope of rank and file supporters. Their formulation cannot have function (1), nor function (2) for supporters in general, but certainly for theorists of deep ecology. The implicit contention would be that if the rank and file carries out certain studies they would on the whole agree. It is therefore somewhat misleading to ask "do the supporters accept the principles?" The question is more about compatibility of the principles with their attitudes.

In any case, the 67 laws or principles open up a valuable field of systematic theory. Some of the 67 items touch upon beliefs that we do not need to share in order to cooperate in "a clearly formulated strategy". On what I call 'Level 1' of (logical) derivation, pluralism is an asset. But on the whole, the laws may be formulated without recourse to Level 1. And at Levels 2 and 3, I certainly find it laudable to formulate and systematize laws or principles. It may even be necessary when working out "a comprehensive and clearly formulated strategy for assuring the preservation of what remains of the biosphere" (p.160).

World Views — Different Views

Where my attitude perhaps differs from that of Goldsmith is on the question of "world views". As an old professional philosopher, I am sceptical about the prospect and desirability of a common world view. In philosophy, we think about Thomas Aquinas, Descartes, Spinoza, Hegel, Stuart Mill, Bertrand Russell and others who try to cover *everything* which the philosopher considers essential. Radical views in regard to the ecological crisis show traces of St. Francis, Spinoza, Bergson, Heidegger and others. Probably Goldsmith would not expect or find it desirable that we all subscribe to a definite philosophy. A comprehensive world view from which it follows that it must be a high priority policy to preserve what is left of the richness and diversity of life - and to restore what is practically impossible to restore - will motivate and support numerous radical strategies to reach the goal. Of such a view, there may be many mutually incompatible formulations.

Perhaps there is no disagreement

here. Terminology differs. For me, a theory of the cosmological process is not yet what I call a "world view". I might call the work of Goldsmith an "ecological cosmology" and consider it an integral part of what I call an "ecosophy". We would then agree that only a clearly formulated ecological cosmology "is likely to give rise to a comprehensive and clearly formulated strategy". It is the hope of many of us that Goldsmith will continue his work in this field.

Subjectivity and Deep Ecology

As an example of opinions which touch upon Level 1, the following quote is instructive: "Deep Ecology seems to differ from the more pragmatic and matter of fact views and policies of the Ecology or Green movement that has developed during the last twenty years, largely in its very necessary subjective, emotional and slightly mystical approach" (p.160). That such an approach is of necessity subjective and emotional is to me a highly interesting view. In order to be thoroughly understood, some analysis of how the terms "subjective" and "emotional" are used here is needed.

Human experience of reality may be said to have three main dimensions; richness, intensity and deepness. Some people tend to apply the terms "subjective" or "emotional" only when the intensity and deepness are externally manifest. A rather misleading way of talking!

We may disagree discussing these issues (on level 1) or simply not understand each other, but this should not in any way interfere with our work together. The pragmatic and matter-of-fact argumentation in the main branch of the ecological and the broader green movement seems to avoid the subject of values and other "emotional" issues. In the deep ecology movement, the emotionalism is not hidden and that tends to "catch the public imagination".

Arne Naess

For details of recent articles that have appeared in The Ecologist on deep ecology and related issues, write to the Editorial Department. Order a complete set of articles and receive Gaia: The Thesis, The Mechanisms and the Implications at the special price of £13.

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Gaia Under Scrutiny

GAIA, THE THESIS, THE MECHANISMS AND THE IMPLICATIONS: Proceedings of the First Annual Camelford Symposium on the Gaia Hypothesis, edited by Peter Bunyard and Edward Goldsmith, Wadebridge Ecological Centre, 1988, £18/\$32 (pb), 251pp. Available from The Ecologist, Worthyvale Manor, Camelford, Cornwall.

In his paper to the First Annual Camelford Symposium on the Gaia Hypothesis, held in November 1987, James Lovelock makes explicit what I take to be the essence of the Gaia Hypothesis:

"In particular, Gaia theory sees the Earth as a responsive living organism that will at first tend to resist adverse environmental change and maintain homeostasis. But if stressed beyond the limits of whatever happens to be the current regulatory apparatus, it will jump to a new stable environment where many of the current range of species will be eliminated."

Three key issues emerge from this statement. First, Planet Earth (Gaia) is a *single* 'living' entity that has the capacity within itself to maintain homeostasis (stability). Second, when homeostasis is threatened by adverse environmental factors, regulatory mechanisms come into play which restore the existing stability. Such mechanisms reflect the response of the overall organism to changes in its environment, rather than specific responses of its individual parts. Finally, if the organism is stressed to the point at which the prevailing regulatory mechanisms are no longer able to restore homeostasis, a new and qualitatively different stability will be achieved with few, if any, of the existing forms of life. Moreover, among species, it is only

the activities of *Homo Sapiens* which are sufficiently far-reaching to render inoperable the existing regulatory devices and push Gaia to a fundamentally different state. The Gaia hypothesis thus has particular implications for humankind and takes on not only a scientific dimension, but also social, political and ethical implications.

Interdisciplinarity

The all-embracing nature of the Gaia hypothesis gave this Symposium what was perhaps its most exciting aspect: interdisciplinarity. As the editors imply in the Preface, the thesis prompts a questioning of the reductionist assumptions upon which disciplines have traditionally been based, and this Symposium provided an opportunity for participants to make the first tentative steps towards an holistic approach. The principal speakers reflected the interdisciplinary flavour of the Symposium with contributions from the Earth and Life Sciences, Anthropology, Social Sciences and Philosophy. A notable omission was Physics: an holistic thinker such as Fritjof Capra or David Bohm could have had an important role to play in linking sub-atomic theory with the Gaia hypothesis.

Themes and Perspectives

The Proceedings are divided into three parts: Introductory, Thesis (including Mechanisms), and Implications. A full report of the open discussion following each paper shows the extent to which participants who were not key speakers were able to make valuable contributions to the overall debate. A glance at the brief personal details of these participants shows how much interest the Gaia thesis has engendered among those who at first sight might appear to hold quite different perspectives.

In the Introductory section, Jacques Grinevald traces the intellectual antecedents of Gaia to, in particular, the concept of the biosphere developed by Vladimir Vernadsky. Though, as Grinevald points out, there is considerable confusion over what exactly Vernadsky meant by the term, it seems clear that the biosphere is to be understood as more than just all living things. It also includes the inanimate envi-

ronment — the lithosphere, hydrosphere and atmosphere — with which living organisms interact creatively in order to maintain acceptable conditions for life. From this perspective, the external environment is not just something 'out there' to which life has to adapt if it is to survive; on the contrary, its very composition depends on the activities of living things working together to ensure that the homeostatic conditions for their collective survival are maintained. It is this biotic activity which would seem to link the notion of biosphere with Gaia. Inevitably, if the total interconnectedness of living things — both with each other and with their environment — is stressed, the inadequacies of the reductionist approach in science become glaringly obvious. This point was made by virtually all the speakers at the Symposium, and was particularly well put by David Abram, who, in a most thought-provoking paper, argues for a change in perception in which a 'participatory' rather than reductionist epistemology becomes the new framework for scientific understanding:

"The Gaia hypothesis situates all of us inside of this world that we share with the plants and the animals and the stones. The things around us are no longer inert. They are our co-participants in the evolution of a knowledge and a science that belongs to humankind no more, and no less, than it belongs to the Earth".

The Implications of Gaia

Edward Goldsmith pulls no punches in submitting the development of scientific ecology to close scrutiny. For him, the emergence of contemporary reductionist ecology has meant the virtual abandonment of the holistic principles which informed the discipline in the past:

"Thus the whole is no longer seen as being more than the sum of its parts and is therefore studied by examining the parts themselves in isolation from each other; competition has replaced co-operation as the ordering principle in nature; diversity no longer favours stability; ecological succession no longer leads to a stable climax; and the mere mention of the term 'Balance of Nature', elicits from our academic ecologists a condescending smirk if not a belly laugh".

Similar views are expressed in the other two discipline-based papers by Mae Wan-Ho on 'Evolutionary Theory', and Matthias Finger on the 'Social Sciences'. Both speakers see their disciplines as reflecting the 'anti-Gaian' reductionist and mechanistic tendencies in modern science, and argue for a reintegration of humanity and nature throughout the sciences as a whole. It is particularly refreshing to find Mae Wan-Ho, a reader in Biology at the Open University, appealing for a convergence of the Arts and Sciences ("we touch the same core of reality, artist and scientist both as human beings") within a new paradigm which reflects the unity of all aspects of reality. She sees the beginning of this process in the rise of environmental movements and other holistic activities. But the process must be hastened, and her paper ends in metaphorical poignancy with a caption that beautifully parallels the sentiments expressed in Capra's *Tao of Physics*: "I see Nature dancing to the harmonies of music, and it is imperative that we must learn again to dance in step with her".

Finger, on the other hand, does not share Wan-Ho's optimism. For him, the social sciences are by definition anthropocentric. Such a perspective, which distances human beings from both social and physical reality, is not, as he rightly asserts, reconcilable with the notion of Gaia. Indeed, the whole of mainstream social science, from Comte to the present day, whether of Marxist or non-Marxist persuasion, has been oriented to the notion of progressive material development with the manipulation and control of nature as its underlying rationale. However, where I do not agree with Finger, is that social science must necessarily be anti-Gaian, and I have more confidence than he has that the construction of a broad based critical theory of society could well be the framework for the integration of Gaian principles into social thought. But it must remain an open question whether the change in perspective within the social sciences can be adopted in time to make an effective response to the pressing urgency of the issues raised by Gaia.

Assessment

In 'Gaia and the Philosophy of Science', Jeremy Ravetz raises what is probably the central issue arising from the Gaia hypothesis — our relationship with non-human nature. For Ravetz, "we are perhaps an unnatural part of nature, unique (to our present knowledge) among all species,

in that we threaten to destroy the homeostatic balance on which our existence depends". There is no doubt that we are on a destructive path, as is ably catalogued by Peter Bunyard in 'Gaia: Its Implications for Industrialized Societies'. Are we right, however, to lay the blame on *Homo Sapiens* as a whole? Ravetz points an accusing finger at European 'man' to whom he attaches particular responsibility for our plight, but this is not enough. It is the expansionist, individualistic, competitive,

materialistic, and masculine culture of advanced industrial 'civilization' which is creating ecological destruction on such an unprecedented scale.

An alternative lifestyle is described by Martin von Hildebrand, who shows how the Ufaina people in the Colombian Amazon live in balance and harmony with nature. Other anthropological studies of tribal and small scale societies have arrived at similar conclusions. The least we can infer from these studies is that Homo

The Third Annual Symposium

On the Gaia Thesis and its Implications

To be held from November 8 to 10, 1989,
by the Wadebridge Ecological Centre
at Worthyvale Manor, Camelford, Cornwall.

The title of this year's symposium is

Gaia and Symbiogenesis: The Development of Cooperation among Living Systems

The speakers include:

Professor James Lovelock
Professor Lynn Margulis
Professor Brian Goodwin
Professor Ricardo Guerrero
Professor Peter Saunders
Professor Fritz Popp
Professor Ron Brady
Dr Mae-Wan Ho
Dr Patrick Lavelle

Dr Paul Dando
Professor Alan Southward
Dr Eve Southward
Dr Martin von Hildebrand
Dr Alywn Jones
Dr Rupert Sheldrake
Edward Goldsmith
Monica Bryant

The daily rate for the Symposium with lunch is £45. For those wishing to stay at the Conference Centre the cost of bed and breakfast is £23 plus £12 for dinner (all prices include VAT).

The Proceedings of the First Annual Camelford Symposium on the *The General Implications of the Gaia Thesis* are available from Worthyvale Manor, Camelford. The Proceedings of the Second Annual Symposium on *Gaia and Evolution* will be available this autumn.

Sapiens is not intrinsically and universally anti-Gaian, and, if we are to survive, it should not be beyond us to restructure industrial society along Gaian lines. But this requires an enormous effort of political will and sacrifice, at least in the short term, which may be difficult for the citizens of advanced industrial societies to contemplate.

As Ravetz says, Gaia has sharpened our ecological perspective. Its holistic vision sensitizes us to the interconnectedness of the whole of reality. But is it a testable hypothesis? Clearly there are problems as Andrew Watson makes explicit in 'The Gaia Hypothesis: Mechanisms and Tests':

"One problem with the Gaia hypothesis is that, in common with other conjectures in the field of Earth history, its subject matter is remarkably difficult to test by direct experiment. However, it is certainly possible to make some predictions about what the course of Earth history should have been like to be consistent with Gaia . . . We are all the time adding to our knowledge of the environment in the geological past, so these predictions do have a fighting chance of being tested."

This is indeed a promising claim, and although I do not feel technically equipped to evaluate them here, the papers by Lynn Margulis on Gaia, Michael Whitfield on 'Is the Ocean Self-Regulating?', Gregory Hinkle on 'Marine Salinity', and Peter Westbroek and Gerrit-Jan de Bruyn on Gaia and Geology all suggest that Gaia is gaining in empirical support.

I cannot complete this review without expressing disquiet at three particular points which Lovelock makes. First, he claims to give priority to Gaia rather than humanity. Thus Chernobyl and ozone depletion are "minor problems affecting mostly white people". He does not say on what grounds such an extraordinary statement can be substantiated scientifically. Indeed, is it not true to say that most, if not all, life forms are susceptible to abnormal levels of radioactivity in the environment? And could there not be a point beyond which Gaia would be unable to cope with such excesses? Second, it seems inconsistent to differentiate humanity from Gaia when our embeddedness in Gaia is presupposed in the hypothesis. Our fate, and that of Gaia as it is now, are inextricably interwoven and to be a friend of one must *ipso facto* mean to be a friend of the other. Third, Lovelock infers that because Gaia depends on the activities of individual organisms, the message for humans is that

"Lovelock claims to give priority to Gaia rather than humanity . . . Yet it seems inconsistent to differentiate humanity from Gaia when our embeddedness in Gaia is presupposed in the hypothesis."

we should ensure that our personal lives are pro-Gaian. I would accept that this is a necessary, but not a sufficient, condition for the health of Gaia. In particular, it fails to take account of the anti-Gaian sociological and institutional constraints to which we are subject in our daily lives, particularly in advanced industrial societies. Such constraints ultimately depend on a collective political response for their resolution.

Despite these reservations, Lovelock's Gaia hypothesis remains perhaps the most important framework within which the current ecological problems which beset this planet can be understood. Particular credit is due to Edward Goldsmith and his colleagues for setting in motion a series of annual symposiums in which interested scholars and others from around the world can debate these exciting and controversial issues.

Alwyn Jones

The Right and the Roots of Ecologism

ECOLOGY IN THE TWENTIETH CENTURY: A History, by Anna Bramwell, Yale University Press, 1989, £27.50/\$40 (hb), £9.95/\$14.95 (pb), 292pp.

Anna Bramwell has earned herself a certain notoriety among the green movement for her views on the right-wing past of 'ecologism', as she terms the politics of ecology. Her previous book *Blood and Soil*, described the 'green' element in National Socialism, and in this work she traces the roots of ecologism back to the German zoologist Ernst Haeckel (the author of *A History of Creation*, published in 1876), and gives considerable attention to the pre-war ecologists in both England and Germany who held fascist sympathies.

The 1930s were the most intense years of my life. I visited Hitler's Germany, lived for a while in France and followed, almost as a matter of life and death, the clash of rival political philosophies. This history of ecology brought it all back to me, so I found it absorbing, whether I

agreed with it or not. I knew many of the eco-fascists discussed by Bramwell and realize now why we had such divergent political opinions.

It may well surprise contemporary ecologists that so many ecologists in the 1930s were either fascists or fascist sympathizers. When, in 1963, I became editor of the journal of the Soil Association, *Mother Earth*, I was disturbed to discover that my predecessor, Jorian Jenks, had been a member of The British Union of Fascists and had spent the war in Brixton prison. Other leading members of the Soil Association, including the Earl of Portsmouth and Rolf Gardiner had similar sympathies, and Tristram Beresford, one of the best agricultural historians of our time, had been an early member of Oswald Mosley's party. Another member for a short time was Harold Nicholson. Henry Williamson was a passionate fascist and adored Hitler; the poet Edmund Blunden was also a fascist.

I was such a passionate anti-fascist in those days that I was incapable of even attempting to understand why fascism should appeal to such intelligent and ecologically-minded people. I condemned all fascists including the poets Ezra Pound and Roy Campbell, and I was distrustful of W. B. Yeats' and T. S. Eliot's right-wing allegiances. Later, however, I realized that this exposed a lack of imagination on my part, and after the War I became friendly with several pre-War fascists and learned to have more sympathy with their motives in the past.

Bramwell describes three kinds of fascism: Italian Fascism, to which Pound gave his allegiance, which claimed to defend traditional Italian culture against both the Left and international capitalism; Spanish Fascism, to which Roy Campbell was sympathetic, which was also supposed to defend traditional culture, especially the Catholic Church, against intellectual scepticism and Bolshevism; and National Socialism, which, at its beginning at least, was organic and laid great stress on the conservation of nature. The Germans were more outraged by the environmental and rural destruction caused by industrialism than the contemporary British or Americans, and this helps to explain the admiration that Henry Williamson and some others in the English organic movement had for National Socialism.

The Nazis passed legislation protecting small farms, forests, hedges and villages. Hitler was a vegetarian, and Himmler was an anti-vivisectionist who could not bear to witness pain! The Minister for Agricul-

ture Walther Darre, was a fervent advocate of organic farming, and after the war was a great admirer of Eve Balfour's *The Living Soil*.

At its inception, National Socialism was supported by some distinguished philosophers, most notably Heidegger, whose views on consumerism and the alienation of man from his true self by mass production and international capitalism correspond to those of most ecologists today. Unfortunately, Hitler's own philosophic adviser, Rosenberg, reduced all the subtleties of the other National Socialist philosophers to one over-riding concept — *race*. Racism perverted the universalism of socialism and the right to self-determination of nationalism. Belief in the superiority of the 'Aryan race' corrupted the ecological element in the Nazi creed. Ecology has its foundation in biology, and a false anthropology based on a false biology turned ecology from a benefit to mankind to a great evil.

A characteristic of all forms of fascism was hostility to the mind because it substituted its cold, calculating logic for our natural passions and intuitions. This 'no-mind' attitude (incidentally a principle of Zen Buddhism) was backed up by a Neo-Vitalist philosophy: whatever the superior Aryan *feels* must be right. Nature knows better than the intellect with its artificial ideas such as equality.

Bramwell observes that the ecologist can be tempted to identify the Self with the organic and I agree with her that it is a pseudo-mysticism to identify the Self wholly with nature. To safeguard against this error demands a *human* ecology which does not allow us to 'weed out' all those who disagree with us.

Ecology in the Twentieth Century, concludes with a disappointing piece of rhetoric in favour of born again capitalism. Although her book contains several useful insights and she has some sympathy with the ecologist cause, Bramwell holds the fashionable opinion that ecologists would like to take us all back to the Stone Age, and that it would be a tragedy if the Greens became politically dominant. Bramwell's desire to be objective and scientific blinds her to the way in which unregulated capitalism is leading the Western powers to death by eutrophication. Obviously there is no solution to this within either a command or a *laissez faire* economy, but there must be a search for a third way, "neither left nor right but straight ahead".

Bob Waller

Nuclear Intolerance

MULTIPLE EXPOSURES: CHRONICLES OF THE RADIATION AGE, by Catherine Caufield, Secker and Warburg, London, £12.95.

The development of new scientific discoveries seems to follow a pattern. Initially, a new phenomenon remains a laboratory curiosity until someone suggests a practical use for it. Publicity and quackery, in equal measures, then result in the new discovery being hailed as the most significant breakthrough since the wheel, a phase which soon passes. Then, genuine uses for the discovery are found and products and processes based on the new phenomenon begin to pervade our daily lives. Somewhere along the line, problems will occur: unforeseen risks to health and the environment may be discovered. By now, however, such momentum has built up that regulations and restrictions on the products and processes concerned are difficult to implement. This problem is compounded when the regulators of the technology are the very people who use and market it. All too often, the result is inadequate control and unacceptable risks being forced upon the community as commercial and political considerations outweigh common sense.

For a glaring example of this process, one has only to read Catherine Caufield's chilling new book. Caufield chronicles nearly a century of human involvement with ionizing radiation and radioactive materials, from the early use — and misuse — of X-rays to the catastrophe at Chernobyl. Time and time again, the precautions taken to protect human health from the fascinating phenomena which lie at the heart of matter are shown to be too little, too late and based largely on guesswork.

X-Rays

X-rays dominated the radiation scene at the end of the last century and numerous devices utilizing their power to "see" through flesh were on sale to the general public. Attempts were made to treat a variety of medical conditions with X-rays but these were generally unsuccessful. It soon became apparent, however, that X-rays could do harm and horrific cases of radiation burns were reported. In 1904, Clarence Dally, an assistant to the inventor Thomas Edison, became the first person to

die as a result of exposure to ionizing radiation — severe burns led to the amputation of one arm and most of the other while cancer killed him at the age of 39.

Nevertheless X-rays continued to be promoted for the treatment of such conditions as depression, birthmarks, ringworm and acne. Even as late as the 1940s, these rays were used for the removal of unwanted hair by beauty clinics. Indeed, the dose required to cause hair to fall out was used as one of the early standards for radiation exposure. A more widespread estimate of exposure was the "erythema dose" — the amount of exposure required to cause reddening of the skin. Various fractions of the erythema dose were proposed as safety limits but, in fact, these fractions were purely arbitrary and the erythema dose itself was a variable and extremely uncertain quantity. The first radiation protection standards, in 1934, used as their basis data derived from the concept of the erythema dose and rested, as Caufield puts it, "on studies too short to detect long-term effects; on inadequate samples; on ill-defined and inconsistent units of measurement; on untested assumptions". This work still underpins many of our radiation protection standards today.

While standards for X-rays were under development, if that is the correct term, another group of radiation victims was under attack. The women who painted watch and instrument dials with luminous paint absorbed large quantities of radium, a highly radioactive element, during the course of their work. This caused anaemia, rotted the victim's bones and caused cancers. Many of the women were so badly contaminated that they could make a sensitive screen glow simply by breathing on it.

The Low Dose Controversy

By the 1930s, it was obvious that large doses of radioactivity, whether from externally applied X-rays or ingested radium, were highly dangerous. It was nearly another 30 years before it became accepted that small doses could do harm, although experiments on fruit flies, which showed that tiny doses of radiation could cause genetic mutations, were considered when the US National Council on Radiation Protection set new standards in 1953.

In the intervening years, the US had made and tested a number of nuclear weapons and had, of course, obliterated two Japanese cities with such devices. The

radiation implications of nuclear weapons were played down at first — they were regarded as “just another piece of artillery”. Yet radiation sickness and related diseases plagued the workers manufacturing the bombs and many people caught up in the fallout from weapons tests. Later on, cancers became prevalent — in uranium miners, in Pacific islanders whose food chains became contaminated with fallout, and in forces personnel taking part in weapons tests.

Gradually, the appalling consequences of radiation exposure became clearer and longer-term effects such as birth defects and cancer at much lower levels of exposure became apparent. Despite these problems — which were frequently covered up on the grounds of national security — the testing of nuclear weapons in the atmosphere continued, depositing fine clouds of fallout around the entire globe.

In 1958, some of the complacency regarding the safety of low-level radiation exposure was shattered when Dr Alice Stewart published a study which showed that even the low doses received during medical X-rays could cause harm. Mothers X-rayed during pregnancy were significantly more likely to produce children who subsequently developed cancers, especially leukaemia. This report — later confirmed by a separate piece of work from Harvard — marked the beginning of a furious debate over radiation safety which continues today.

A Knee-jerk Response

Dr Stewart's work challenged the assumptions of the radiation establishment and also provoked hostility from obstetricians and gynaecologists who found it convenient to X-ray pregnant women. Radiation safety assumptions, this time from weapons fallout, were later challenged by the physicist Dr Ernest Sternglass and this brought him the type of knee-jerk vilification which became the trademark of the nuclear establishment at bay. Similar treatment was handed out to Drs Gofman and Tamplin when they began to question the safety of low-level radiation exposures, producing figures which suggested that the hazards had been grossly underestimated.

In a conventional scientific debate, opposing views are listened to with courtesy and new evidence and observations are considered on their merits. In the radiation protection field, these procedures seem to have been suspended. Bo Lindel,

a former chairman of the International Commission on Radiological Protection, is quoted as writing:

“We react like mechanical puppets or like insects shown a stimulus triggering aggressive reactions, when we are faced with statements or ideas which are not branded with the mark of the old truth. Should we not instead be curious and appreciative?”

Critics of the radiation mafia have been ignored, their research funding has been cut off and they have been excluded from the ranks of “serious” scientists. Those who were formerly part of the system but have now dared to criticise it are dismissed as senile or ill — as was the case with Karl Morgan whose presentation at the recent FOE/Greenpeace conference on low-level radiation was as cogent and well-reasoned as any. The scientific aspects of these critics' work have often been ignored and any consideration has frequently been asymmetrical with greater weight given to studies supporting the status quo, whether or not their scientific merit is equal to that of the critical material.

Catherine Caufield's book describes in painstaking detail how humans have misused the phenomena of radioactivity and ionizing radiation — and how they never seem to learn from their mistakes. Even now there are serious safety questions about dental X-rays, mammography, the significance of nuclear power station releases and the effects of nuclear energy on workers' health. Recent data on cancer in survivors of the Hiroshima and Nagasaki bombs suggest that standards are still too lax. The Chernobyl disaster, which used much of the population of Europe as inadvertent experimental material, demonstrated how incompetent politicians are when faced with such a crisis and how they are all too prone to issue soothing statements with no basis in fact, presumably in the hope that the problem will go away. Upland sheep farmers are still paying for this ineptitude. This book should not only be read by everyone concerned about radioactivity, health and the environment: it should be compulsory reading for every politician and civil servant who may be tempted to take the assurances of the radiation establishment and the nuclear industry at face value.

Brian Price

Soft Options?

ENVIRONMENTALISM AND THE FUTURE OF PROGRESSIVE POLITICS, by Robert C. Paehlke, Yale University Press, 1989, £19/\$30, 324pp.

Being a green politician in a resource addicted nation like America (Jeremy Rifkin estimates that Americans consume the energy needs of 22 billion humans) would seem to be a hapless task. “Even litter has strong political allies,” writes Professor Paehlke. “Millions of dollars were spent to defeat the Californian ‘bottle bill’ in a public referendum.” Lady Bird Johnson's efforts to remove highway billboards were also defeated.

Greening America, the planetary wastrel, is a vital task if the biosphere is to survive but the ecological advances of the 1970s in that country have been eroded by President Reagan. The 1973 oil embargo, far from making middle American more aware of the limits to its gas-guzzling way of life, made it more bellicose: “No crude, no food” was a popular slogan. Environmentalists who had been urging restrictions of offshore drilling, Alaskan pipelines and coal burning found themselves preaching to the unconverted.

This book covers a wide range of issues. There are several chapters devoted to environmentalism, energy, economics, the Malthusian dilemma which contain interesting material. On population growth, Paehlke believes that we should work towards a stable population of 10 billion on a voluntary basis. Unfortunately, however, he believes that population decrease can only be achieved by raising “economic expectations”. The problem of population growth versus economic growth surfaces in Besecker and Elder's criticism of Hardin, which Paehlke quotes. “Hardin seems to believe that the wealthy nations are entitled to the resources of the world because their populations are increasing at a decreasing rate. But their per capita consumption is increasing and that exponentially increasing consumption dooms the race . . . just as surely as any exponential increase in population.”

In the case of the energy crisis, Paehlke pins his hopes on the painless solution offered by Lovins' Soft Energy Path. Now, while it is perfectly clear that sooner or later industrialized nations will be forced to use energy efficiently and fall back on renewables, it is far from clear that solar

and wind power can keep the present industrial system on the road. According to Jeremy Rifkin, American energy consumption, which is twice the per capita consumption of Sweden and West Germany, is expected to double in the next twenty years. Vast areas of America would have to be covered with 'renewable' machinery to meet such needs and all the solar and wind power hardware — not to mention the energy efficient houses — would have to be manufactured, at great cost to the environment.

Paehlke is somewhat defensive on the subject of American capitalism although he does acknowledge that infinite economic growth is "probably" impossible on a finite planet. He wants to maintain economic growth and takes issue with *The Ecologist's* 'Blueprint for Survival' ("A classic environmentalist work") over GDP and how much material throughput it involves. He questions the statement that "Gross Domestic Product (GDP), which is population multiplied by material standard of living, appears to provide the most convenient measure of ecological demand." If society were to consist of singing teachers who spent their wages on dancing lessons then you could indeed have a rising GDP (and very good piano sales) with little environmental destruction; at the moment, however, most commercial activity involves considerable material throughput. And what if the singing teachers had to drive to their dancing lessons?

On the question of the role of the city in an ecological future Paehlke makes a shrewd contribution to the ecological debate. He argues that we must maintain cities for the simple reason that the dispersal of urban populations would destroy the wilderness and countryside. He also points out that city dwellers take up less space, travel shorter distances and have lower birth rates than country dwellers. "Wilderness would be 'loved to death' in an orgy of convenient access and multiple use," he concludes.

Finally, Professor Paehlke comes up with a political package which he hopes will have wide appeal. It will appeal to neo-conservatives by being de-centralist and anti-bureaucratic, appeal to traditional progressives by its commitment to reducing military spending and achieving full employment, and appeal to feminists by eliminating disadvantages based upon gender. Foreign aid would be linked with population stabilization, so there is an element of coercion here absent from his earlier discussion of this issue.

BOOK DIGEST

Books which are covered in the digest may be given full-length reviews in forthcoming issues.

- **ELECTROMAGNETIC MAN: Health and Hazard in the Electrical Environment**, by Cyril W. Smith and Simon Best, J.M. Dent, London, July 1989, £17.95 (hb), 344pp.

Smith and Best present mounting evidence showing that humans are sensitive to even minute electromagnetic fields, which can cause allergies, depression and cancer. They describe the threat from man-made non-ionizing radiation from some electrical appliances and power transmission lines, and provide a new interpretation of certain unexplained phenomena such as telepathy and dowsing.

- **THIRD WORLD GUIDE 89/90: The World as Seen by the Third World; Facts, Figures, Opinions**, General Editor Roberto Remo Bissio, Third World Editors, Montevideo, 625pp. Available from Third World Publications, 151 Stratford Road, Birmingham, B11 1RD, £15.

A country-by-country guide to the history, politics and economics of the Third World, with commentaries on various subjects concerning the Third World and its relations with the North, such as debt, transnationals, trade and population. A radical analysis of international inequalities, claimed to be "the first reference book about the Third World, made in the Third World, to reach the Third World."

- **CHANGING THE GLOBAL ENVIRONMENT: Perspectives on Human Involvement**, edited by Daniel B. Botkin, Margriet F. Caswell, John E. Estes and Angelo A. Orio, Academic Press, San Diego and London, 1989, 459pp.

A series of essays by environmental, economic and social scientists from around the world on the wide range of ecological problems caused by human activities. Several contributions are devoted to new methods of monitoring the changes we are causing, such as remote sensing and worldwide computer-based data systems. The final section lists the economic and social issues of trying to halt the destruction. The editors believe that "concern for the environment is simply good economics and planning."

- **MODERNISING HUNGER: Famine, Food Surplus and Farm Policy in the EEC and Africa**, by Philip Raikes, CIIR/James Currey/Heinemann, London and Portsmouth (NH), 1988, £9.95 (pb) £25 (hb), 280pp.

In this wide-ranging examination of the food crisis in sub-Saharan Africa, Raikes argues that Europe's attempts to 'modernize' African agriculture have increased rural poverty. Europe and the US have offered technological solutions to problems which are overwhelmingly political and social.

- **THE IMF, THE WORLD BANK AND THE AFRICAN DEBT: Vol. 1, The Economic Impact; Vol. 2, The Social and Political Impact**, edited by Bade Onimode, Zed Books/Institute for African Alternatives, London, July 1989, £4.95 each (pb).

This collection of essays, originally presented at a 1987 conference arranged by the Institute for African Alternatives, gives a number of fresh perspectives on the causes and consequences of Africa's debt crisis from both African and Western scholars. Each volume contains several theoretical and thematic essays and a number of country case studies. The conference concluded that Africa should call a halt to her debt repayments and adopt a 'basic needs' development strategy.

- **PUBLIC POLICIES AND THE MISUSE OF FOREST RESOURCES**, edited by Robert Repetto and Malcolm Gillis, Cambridge University Press/World Resources Institute, January 1989, £19.50/\$27.95 (pb), 432pp.

A study of how government taxation, credit, timber concessions and investment policies contribute to deforestation and the misuse of forest resources in both the developed and developing worlds. The authors show that official decisions to sacrifice forests for quick profits are not only ecologically but also economically unsound.

Patrick McCully

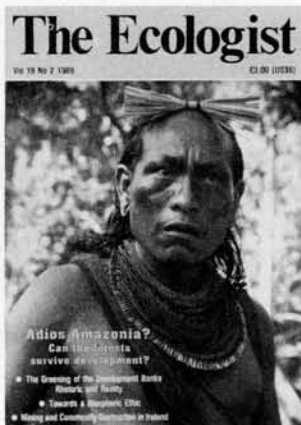
"Bleak visions of the future are not only (hopefully) unrealistic but also politically problematic," writes Paehlke who takes a (shakily) optimistic view of the future. "An orientation to the environmentally and economically sustainable future requires considerable social mobilization to achieve necessary, albeit often modest, adjustments in the habits of day-to-day living." It would be wonderful indeed if Americans — and for that matter Europeans — could live a sustainable life-style with only *modest* adjustments!

However, there is a real dilemma for the Green politician. Do you offer the public an attractive package designed to keep the show on the road by means of modest adjustments in day-to-day living? Or will even middle American, with the Alaskan permafrost melting, the wheatbelt drying up, the Mississippi so low that river traffic is threatened, be willing to admit that something is wrong with the planet and that their lifestyle has a great deal to do with it? Will we have to write on the tombstone of the human race "They increased their GNP to the end"?

Joe Potts

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Letters

The World Bank shows its True Colours

Dear Sir,
The World Bank has just granted a year's extension to the Government of India and the state governments of Gujarat, Maharashtra and Madhya Pradesh, to formulate a comprehensive rehabilitation programme for the nearly 100,000 potential oustees of the Sardar Sarovar (Narmada) Project (see *The Ecologist* Vol 17, Nos 2/3). In doing so, the Bank has virtually ignored not only all the past evidence of the incapacity of the central and state governments in India to rehabilitate such a large number of people, but also its own reappraisal mission's recent scathing indictment of the rehabilitation efforts currently underway for Sardar Sarovar.

The new extension overturns the Bank's earlier deadline of June 30th 1989. This latest extension is the third to have been granted, two previous deadlines having been set for 31st December 1988 and 31st March 1989. On both previous occasions, the central and state governments failed to come up with a rehabilitation programme which satisfied the Bank. It was in this context that the Bank sent a reappraisal mission in March 1989. The resettlement and rehabilitation (R&R) team of this mission recently submitted in its report, which contains severely critical comments on the progress (or rather lack of it) of rehabilitation for the oustees of the Sardar Sarovar. The fact that the Bank has nevertheless decided to continue financing the dam only strengthens the view of those who see it not as a neutral party, but as a partner in furthering the colossal human and ecological disruption that the Narmada Project entails.

The Bank's latest extension to the deadline has so outraged potential oustees of Sardar Sarovar that about 30 of their representatives travelled to Delhi on July 17th and demonstrated at the World Bank's office there. They were joined by 30-35 members of support groups from Delhi, Bombay, and Ahmedabad. For two hours, we surrounded senior Bank officials, in-

cluding the resident Representative Mr Kraske, and demanded that the Bank withdraw altogether from the project.

At this point we urgently need your support in exposing the Bank's latest act of callousness, and in stepping up the pressure to force it to cease immediately all further disbursements for Sardar Sarovar. We urge you to:

- Write letters of protest to the World Bank offices in Washington and New Delhi (Chief of Mission, World Bank, 55 Max Muller Marg, Lodi Estate, New Delhi, 110003) asking it to withdraw from the Narmada Project.
- Organise demonstrations and/or other actions in front of your country's World Bank office, if any:
- Highlight the issue through your national media, and in any other way possible.

Yours Faithfully,
Ashish Kothari,
Narmada Bachao Andolan,
C17 A Munirka,
New Delhi, 110067
India

A New Morality

Dear Sir,
In his article 'Towards a Biospheric Ethic' (Vol.19, No. 2, 1989), Edward Goldsmith quotes mainly British philosophers and their "rationalistic and progressive" beliefs. I feel that such beliefs were a response to the explosive development of technology and the Victorian class society in the nineteenth century, especially in England. In effect, they were an attempt to give moral justification to well-situated people about their rising income.

In ancient societies, morality was the main orientation for people. But theirs was a slowly changing world. Today, we live in an age of rapid change where many traditional rules of behaviour have lost their immediate hold on individuals. We have become a "society of individuals."

For these individualists, a new ethic has to be found. I think one might start with reconsidering our relations to other individuals: "do unto others as you would they do unto yourself." This is where the ethics of Jesus Christ, Martin Buber, Mahatma Gandhi, and Martin Luther King start.

Our European civilization was founded on an exploring and conquering society with high moral norms but little questioning about the results. This has to change now.

Yours Faithfully,
Claus Blunck,
Letterstrasse 8a,
Coesfeld D4420,
West Germany.

Classified

DIARY DATES

THE EARTH CONCERT. Help is needed to organise this concert for December 31st 1989. This event will be a 12 hour live TV concert to be broadcast around of the world with artists participating from all over the planet. To get more information write to: Earth Concert, Anse St. Jean, Quebec, Canada GOV 1JO. Tel 418-272 2931. Please enclose 3 Canadian stamps or 3 international reply coupons.

GREEN PATHS. Personal Growth and Social Renewal from a Green perspective. Four London meetings on Ethical Investment (19 Oct), Religion and Ecology (1 Nov), Self-Employment (2 Nov) and Promoting Positive Health (25 Nov). Opportunity to share thoughts, feelings, plans for action. Details from 13 Croftdown Road, London NW5 1EL. Tel: 01-485 4870 (evenings).

Second Animal Conference: The Society for Ecological Restoration. The programme includes "Prairie Restoration", "Restoration and Global Climate Change", "Setting Standards for Monitoring Restoration Projects", "Restoration and Recovery of Endangered Species", "Restoration Philosophy" as well as field trips to the famous restoration project at Fermi National Laboratory. The conference will be held from April 29-May 3 1990 at the Sheraton International Hotel at O'Hare, Chicago, USA. More details from William R. Jordan (III), The University of Wisconsin Arboretum, 1207 Seminole Highway, Madison, Wisconsin 53711, USA (Tel. 608-263 7889).

SUCCESS IN URBAN FORESTRY. A One-Day Seminar at Stourbridge Town Hall, Dudley, 28 Sept 1989. The Seminar Fee (including lunch, tea, coffee) is £35 inclusive. For further details, also accommodation and programme contact Chris Field, Lea House, Walsall Wood Road, Aldridge, Walsall WS9 8QU.

WATER AND THE POLITICS OF HEALTH: The case of fluoridation. Speaker: Dr Mark Diesendorf followed by discussion. This event will take place on Wednesday 4 October 1989 at 5pm at the Lecture Theatre 9, Arts Tower, Sheffield University, 3 Northumberland Road, Sheffield S10 2TN. (Tel. 0742-768555 Ext 6340.)

The National Federation of City Farms is holding several courses on **ANIMAL**

HUSBANDRY, ORGANIC PRODUCTION FROM POLYTUNNELS, HOMEOPATHY FOR LIVESTOCK ETC. For more details please write to: National Federation of City Farms, The Old Vicarage, 66 Fraser Street, Windmill Hill, Bristol BS3 4LY.

International Conference—CONSERVATION OF TROPICAL RAINFORESTS: EUROPE'S RESPONSIBILITY to be held in Brussels, 17-18 November 1989. For more information please contact Mr Walter Vermader, Vrije Universiteit Brussel, WE-MECO Pleinlaan 2, B-1050 Brussels, Belgium. Tel. +32(2) 641 35 30.

CALL FOR PAPERS

The Society for Ecological Restoration (details see under Diary Dates) invites submission of abstracts of papers dealing with all aspects of ecological restoration. These may include political, administrative, social, economic and philosophical as well as purely scientific and technical aspects. Forms for the submission of abstracts are available from Keith Winterhalter, Biology Department, Laurentian University, Sudbury, Ontario, Canada P3E 2C6 (tel: 705-675-1151, ext 2213.) The deadline for submission is January 15th 1990.

SITUATION VACANT

CAMPAIGN DIRECTOR FOR THE INTERNATIONAL RIVERS NETWORK. This organisation is based in San Francisco and works actively by supporting specific river issues in other countries and by campaigning to halt World Bank funding of environmentally destructive dam projects. Applicants should have previous organising experience, strong writing skills and ability to work with the press. For details apply to Owen Lammers, Administrative Director, 301 Broadway, Suite B, San Francisco, California 94133, USA.

MISCELLANEOUS

THE LAND REFORM SOCIETY. Aim: To secure a fairer distribution of land. If you are interested contact: John Seymour, Killowen, New Ross, Co. Wexford, Ireland.

DESERT-RECLAMATION RESEARCH CENTRE: Charity offers unique working holidays in Spanish mountain village. Cost £40 (students etc. £32), work 24hrs weekly. Sun, purpose, good food, good company. Full details £1 from Sunseed Desert Technology, PO Box 2000T, Cambridge CB5 8HG.

ALTERNATIVE ENERGY.

Complete Design and Consultation Service. Full details on request from Robert J. Etheridge, Designs for the Environment, Worcester Walk Cottage, Clays Road, Nine Wells, Berry Hill, Nr. Coleford, Glos. GL16 7AT.

ADVENTUROUS, COMMITTED VOLUNTEERS needed to help organise world bicycle tour, pressing for urgent international action for environmental survival. Contact **LIFE CYCLE** immediately with a s.a.e. to: 17 Queens' Terrace, St Andrews, Fife KY16 9QF.

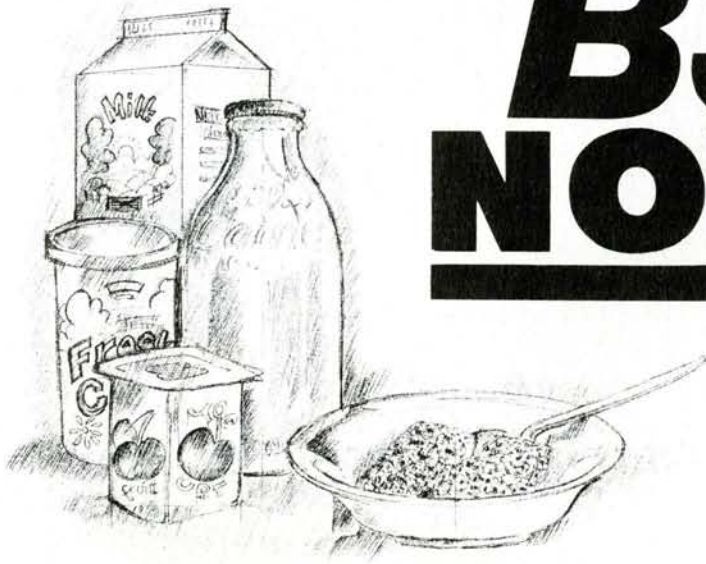
KASANKA NATIONAL PARK, ZAMBIA Volunteers are sought to assist in research on birds and mammals for this unique holistic non profit conservation project. Working holidays with scientists in the field in association with the Durrell Institute for Conservation and Ecology, University of Kent and the Manchester Polytechnic—13 days round trip includes visit to Victoria Falls £1,295 all inclusive. For details: Peter Moss, EcoSafaris, 146 Gloucester Road, London SW7 4SZ. Tel. 01 370 5032.

INTRODUCTION TO BUDDHISM: 'The Buddha's Victory'—crystal clear talk by Ven. Sangharakshita, leading Buddhist teacher. Cassette: £4.40 incl or stamp for free catalogue. Dharmachakra ECL, PO Box 50, Cambridge CB1 3BG.

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BST? NOT FOR ME!

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BST* is a synthetic hormone which can be injected into cows. It increases their milk yields by up to 20% BUT it has not been properly tested on humans, is not needed and it puts a strain on the cow. There is plenty of milk already. All agriculture ministers in the EEC want to ban it. Except Britain's. Four American drug companies are pushing BST all over the world. Will Britain be the soft touch of Europe? The National Farmers Union, the Dairies and consumer groups and animal welfare organisations are united. They agree there is no need for it.

*BST is a genetically engineered version of bovine growth hormone

- Cut out the tab below and leave in your empty milk bottle
- Send the letter to the Minister of Agriculture
- Ask your supermarket manager to supply BST-free milk
- Photocopy the leaflet and give it to a friend
- Support the LFC and write with an s.a.e. to be kept in touch to London Food Commission, 88, Old Street, London EC1V 9AR

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ME**



To the Manager, _____ Dairies
I object to the use of BST in milk production

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Address _____

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QUALITY FIRST

Send this letter to John MacGregor, Minister of Agriculture, House of Commons, London SW1

Dear Mr MacGregor,

I am very unhappy about your policy on BST. I want you to join the other Agriculture Ministers of Europe and ban BST. It is an unnecessary hormone and I do not want it. It will put me off drinking milk. Why treat consumers, cows and the dairy trade as guinea pigs?

Yours sincerely,