

# The New Ecologist

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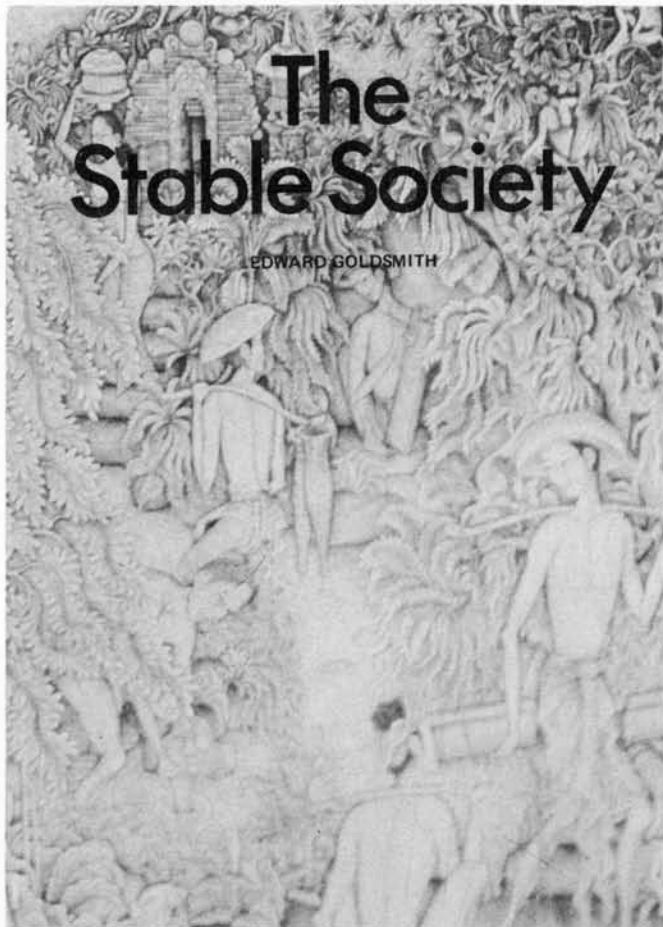
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The Politics of Medicine · Emasculating the Road Lobby · Japan's Civil War

## Canada's Moth War

Elizabeth May





# The Stable Society

EDWARD GOLDSMITH

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*Edward Goldsmith*

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**COVER**



## The Hammer-bashing Society

"You promised to tell me why I can't have a hammer" said the little boy.

"It's a long story answered the old man." "But I want to know", the child insisted. "All right" sighed the old man "It all started a long time ago, in the country where I was born, when they began hitting each other on the head with hammers. It caught on and soon everybody was doing it. Eventually they did almost nothing else, and our country was soon changed beyond recognition.

"Businessmen started making hammers of all sorts. They couldn't produce them fast enough, nor of sufficient different varieties — utility hammers, foldable flick-hammers, double-headed hammers, slender-line hammers, spring-loaded hammers, rubber hammers for use in schools. Yes even education was transformed.

"Mineralists started developing new alloys for super duper extra tough or extra light hammers.

"Special hospitals opened to treat the victims of hammer-bashing. All sorts of new medical specialities came into being and each soon had its own jargon, text-books, learned journal and professional association.

"Hatmakers cashed in with ever smarter and more elaborate protective headgear and wigmakers rapidly climbed onto the band-wagon with lightweight protective toupés lined with the most appropriate new alloy.

"Punting on the hammer-bashing pools, attending professional hammer-bashing tournaments and viewing the latest hammer-bashing drama on the telly became the main diversions of those who could not be more directly involved.

"Politicians, basking in the glory of the new prosperity, engendered by an ever expanding hammer-bashing economy, vied with each other in offering rebates and subsidies on the latest hammer-bashing accessories and ever more comprehensive state services to cater for the victims.

"Academics wrote ever more learned treatises bristling with tables, charts, figures, equations and computer print-outs to provide the theoretical and empirical rationale for the new course on which our country had embarked.

"In fact our society was soon organised to accom-

modate, in a myriad different fashions, the hammer-bashing lust of its ever more depraved citizens.

"What is more, neither our politicians, nor our industrialists nor our trade-unionists nor our scientists nor our technologists nor even our priests would be diverted in any way from the overriding goal of assuring the continued expansion of the hammer-bashing economy, for it was only in this way that they could maintain their credibility, enhance their professional status and assure their continued prosperity.

"For the same reason they had no choice but to turn a blind eye to the unfortunate side-effects of the activity to which they were so uncompromisingly committed — the hundreds of thousands of fractured skulls, brain-lesions, neuromas, cerebral haemorrhages, brain-seizures, tumours and aneurisms that had to be treated in our hideously over-crowded hospitals, and the proliferating hordes of the epileptic, the neurotic, the schizophrenic, the manic depressive, the paranoid, the amnesiac and the partially or totally paralysed into which categories could eventually be classified the great majority of our citizens including those who directed our major institutions and on whose sound judgements hinged the fate of untold millions. Surprisingly enough, few people seemed to worry too much about these little problems. Most of us were easily persuaded that they were but part of the very acceptable price that had to be paid for the incomparable benefits of hammer-bashing progress.

"However, one day, a little group of people on the periphery of our hammer-bashing society started making an awful fuss, suggesting that hammer-bashing was anti-social and should not only be discouraged but actually outlawed. The reaction to this proposal was brutal to say the least. Those who supported it were denounced as dangerous lunatics bent on destroying the very basis of social order — 'enemies of society' to use Paul Johnson's phrase. If they were taken seriously, we were assured, our hammer-bashing economy would be prevented from further expanding. Businessmen would be deprived of their profits, scientists of their research grants, technologists of their development programmes, working men of their jobs, politicians of their electoral support, in fact the whole hammer-bashing economy together with the society that had become its appendage would be condemned to immediate and irreversible collapse.

"Needless to say, these rebels were treated with the disdain they so fully deserved and hammer-bashing continued to monopolise our thoughts, our working days and leisure hours until the last enfeebled and demented survivors succumbed under a hail of weak and badly aimed hammer-blows."

"It won't happen here will it grandpa?" asked the little boy. "Oh no" the old man answered reassuringly "The Gods of one civilisation are the devils of the next, that is why in our society, hammer-bashing is taboo."

*Edward Goldsmith*





"You little cretin don't you realise that the entire economy would collapse if we did that?"

# The Politics of Medicine

*John McKnight*

**Attempts to reform health services in the U.S. have not resulted in better health — they have furthered the dependence of people on experts, and served to perpetuate the myth that technology can cure all problems. Good health cannot be achieved until the practice of medicine is divorced from the political function of the medical empire.**

The United States was once known as a consumer society because of our predilection for defining life as the use of goods and services. But during the past decade we have become a society that lives by consuming crises. We have ingested such unpalatables as civil rights, overpopulation, Watergate, energy shortages, inflation and recession. The popular impression is that in the face of crisis we will digest — if not overcome. There is, however, one crisis that has been with us for a generation, and we still cannot seem to get it down. It is popularly known as the 'health care crisis'.

There is something refreshing about a nonconsumable crisis. It demonstrates the limits of American ingenuity and ensures some continuity in American life. Grandparents, parents and children can join in common cause as they reflect upon and complain about their continuing health care problems.

There are compelling reasons why the 'health care' crisis has not been consumed. The principal reason is that its consumption would contribute to a revolutionary crisis in American politics. The applicability of this proposition may be peculiarly American. If it applies to other developed societies of the capitalist or socialist world, invidious comparisons are left to the reader.

## **Prescriptions for Reform**

The chronic American 'health care crisis' has created an impressive array of palliative reforms. Each ineffective remedy has produced a new prescription. At least six therapies have been administered:

1. The effort to ensure equal access to medical care. The government has outlawed racial discrimination, supported all manner of programs to increase the number of 'health workers', created incentives for doctors to practice in underdoctored areas and supported regulatory systems to allocate hospital beds in relationship to 'medical need'.

2. The focus on improving the quality of health care. Increased professionalization and professional review processes have received the support of the state and of many modernized medical practitioners.

3. An attempt to deal with costs. Comprehensive prepaid systems, health maintenance organizations, Medicare, Medicaid and the proposal for a National Health Insurance program represent efforts to conquer the medical system's growing capacity to consume the gross national product.

4. The effort to involve 'health consumers' in the system. Here, the government and the medical industry are gradually enabling non-professionals to participate in the decision-making processes of the system. Laypeople are given seats in medical congresses where they may vote on the future policies of the system.

5. The increasing concern over ethical issues posed by modern medicine. Organ transplants, abortion, and life-extension technologies provide new crises and new public and professional policies.

6. The preventive health care movement. This reform provides policy alternatives designed to 'get at the root of the problem.' It calls for continuing check-ups, computerized screening systems and medical outreach plans tied to public education programs that will enable more people to use the system.

Although these reform efforts have consumed the resources and energies of Americans for more than a generation, the work of Dubos, Fuchs, Illich et al. demonstrates that the recent growth of modern medicine has had very little positive effect upon the health of the American people, insofar as health is measured by morbidity and mortality rates. In the face of the mounting evidence that modernized medicine is irrelevant as a determinant of health, we have responded with phenomenal new investments in medicine. Since 1965, the growth rate for total medical care expenditures has averaged more than 10 per cent a year. The nation's medical care bill has increased from \$30 billion in 1965 to \$94 billion in 1973 — a figure representing 7.7 per cent of the gross national product.

## **Medicine's Hegemony**

Since these soaring investments in medicine appear to have so little effect upon our health, the basic question is not 'How can we reform medicine?' but 'Why do we invest so heavily in its reform?' The answer may lie in the very fact that the reform increases the hegemony of the therapeutic ideology.

Consider the predictably hegemonic outcomes of the six American reforms.

1. Achieving equal access serves to confirm the value of medicine by broadening the clientele and establishing the legal premise that the right to consume medical service is the central 'health' issue. 'Progressive' litigation seeks to establish 'the right to treatment.'

2. The guarantee of quality care serves to intensify popular belief that health-care professionals know what care is. The critical issue is to force or entice the professionals to produce 'it'.



3. Cost-control ensures not our health but a rationalized guarantee of the medical system's income. The central issue is how to extend the system while lowering or stabilizing the price.

4. Consumer participation co-opts potentially disruptive citizens by providing participation in medicine as a substitute for political action that might affect the critical determinants of physiological ill health.

5. Ethical 'reform' could limit medical hegemony by concluding that such issues as abortion and life extension are not medical prerogatives. However, medical professionals have co-opted theologians and clergy by expanding their trade and becoming the guiding counselors for appropriate decisions regarding these problems.

6. 'Preventive' medical care systems can make every person a client each day of his life. Medicalized prevention tells us that we need the medical system precisely because we do not perceive a need.

Each reform, therefore, represents a new opportunity for the medical system to expand its influence, scale and control. It is no wonder that the reform efforts are often generated by medical interests. Indeed, should the American people come to believe that health is basically a political affair and abandon the medicalized reform efforts, the medical system would deflate like a great balloon pricked by the common sense of citizens. The system needs the hot air of reform if it is to continue to inflate.

### The System's Political Functions

Despite the utility of reform as an essential process to promote the growth of medicine, it would be totally inaccurate to suggest that medical reform is basically a self-serving mechanism of the medical industry. Its 'nonmedical', political effects are now its most important function. Indeed, the reason the 'health care crisis' is so nonconsumable is that we cannot afford to digest it because its functions are so critical to the maintenance of the status quo. The political functions of the system are numerous:

First, in any economy that becomes capital-intensive, means of distributing income are needed in order to create new markets and to forestall disruptive unemployment. 'Service' systems rationalize alternative means of income distribution. The expansion of the medical system is, in most modernized societies, a primary means of providing income and markets disguised as help.

Second, expanding medical systems require the manufacture of need. As each new need is created, citizens have an increased sense of deficiency and dependence. Indeed, an essential function of professional medical training is to increase the capacity of the trainee to define his or her neighbor as deficient while reducing the capacity of the neighbor to cope.

Third, as physiological health remains stable or diminishes while medical resources increase, political energies are increasingly consumed in the effort to reform the medical system. Next to inflation and recession, 'health' insurance is still the major domestic issue on the U.S. political agenda. The consumption of politics through medical reform is a central function of the 'crisis'.

Fourth, in many countries current research demonstrates that increasing numbers of people use the medical system for reasons that doctors say are not physiologically based. In the U.S., well over half the 'patients' are classified by doctors as not having physiological problems. When doctors are asked why these people visit them, they identify a series of cultural, social and economic problems. Therefore, their medical 'care' is, by the doctor's own definition, a placebo for that action that could address the cultural, social, economic and political causes of the malady.

Fifth, the growth of medical hegemony provides the training ground for popular acceptance of expertise. As public belief in the need for medically defined service expands, the people act less as citizens. They are more accurately defined as clients. Clients are people who believe that they are going to be better because someone else knows better. In the U.S. this training in 'clientage' contributed to support for the Vietnam war. Having been trained by professional servicers to believe in professional expertise, American clients waged war by putting their faith in 'systems analysts', 'international relations experts' and 'management authorities'. They were given prescriptions for the problem coded in terms of body counts, mini-listening devices, herbicides and missions. Prepared for professional dependence, they accepted the diagnosis and prescription of a new breed of war-making professionals.

Sixth, the growth-oriented medical system trains people to accept inequity as the price of progress. Indeed, issues of equity and justice can be most effectively co-opted by the belief that the next professional-technological breakthrough will bring health to everyone if we will only invest our resources in professional 'help'. This 'research and development' argument has been a magnificent mechanism to ensure regressive use of efficacious medical resources while preparing people to accept the generalized proposition that inequity is the price of progress.

Seventh, the most important political role of a growth-oriented medical system is its capacity to obliterate any remnant cultural sense of the limits of a technological society. Communicating its commitment to the death of death, the medical system, by its growth, affirms a world view that places ultimate value in development, exploitation and conquest. In a society that is decaying because of the unlimited growth of technology and technique, medicine's primary political function is to obscure the cause of our dying.

### Reasserting the Possibility of Politics

Viewed in these terms, the essential function of medicine is the medicalization of politics through the propagation of a therapeutic ideology. This ideology, stripped of its mystifying symbols, is a simple triadic credo: (1) The basic problem is you, (2) the resolution of your problem is my professional control, and (3) my control is your help. The essence of the medical ideology is its capacity to hide control behind the magic cloak of therapeutic help. The power of this mystification is so great that the therapeutic ideology is being

adopted and adapted by other interests that recognize that their control mechanisms are dangerously overt. Thus, medicine is the paradigm for modernized domination. Indeed, its cultural hegemony is so potent that the very meaning of politics is being redefined.

Politics is interactive — the debate of citizens regarding purpose, value and power. But medicalized politics is unilateral — the decision of the 'helpers' on behalf of the 'helped'.

Politics is the act of citizens pooling their intelligence to achieve the maximum human good. Medicalized politics is the disavowal of that common intelligence, for it individualizes — by bestowing clienthood and by replacing policy with the placebos of technique and technology.

Politics is the art of the possible — a process that recognizes limits and grapples with the questions of equity imposed by those limits. Medicalized politics is the art of the impossible — the process whereby an unlimited promise is substituted for justice.

Politics is the act of reallocating power. Medicalized politics mystifies the controlling interests so that their power is no longer an issue and the central political question becomes one of increasing the

opportunity to be controlled.

Politics is the act of citizens. Medicalized politics is the control of clients. Indeed as politics is medicalized there is no need for citizens. Those citizens who remain are unobtrusive stumps of a dead idea. If the medicalization of politics is to be perfected, we must continue to invest in medical reform. Identifying new problems in medical terms is essential to the increased hegemony of the therapeutic ideology.

There is, of course, an alternative. It is *not* 'curing' a 'sick society'. Rather, it is the possibility of politics. It is even a mistake to understand reform as the process of limiting medicine, because medicine's hegemony is the central issue in that formulation.

The chief requirement is to restore politics, for we can find no cure in any medical function that is nothing more than a substitute for politics. The central reform is the conversion of clients to citizens.

A political society, peopled by citizens, will certainly find a need for a limited, valuable craft called medicine. That legitimate craft will be the result of whatever remains of modern medicine when our people have healed themselves by rediscovering their citizenship.

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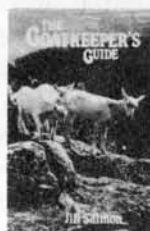
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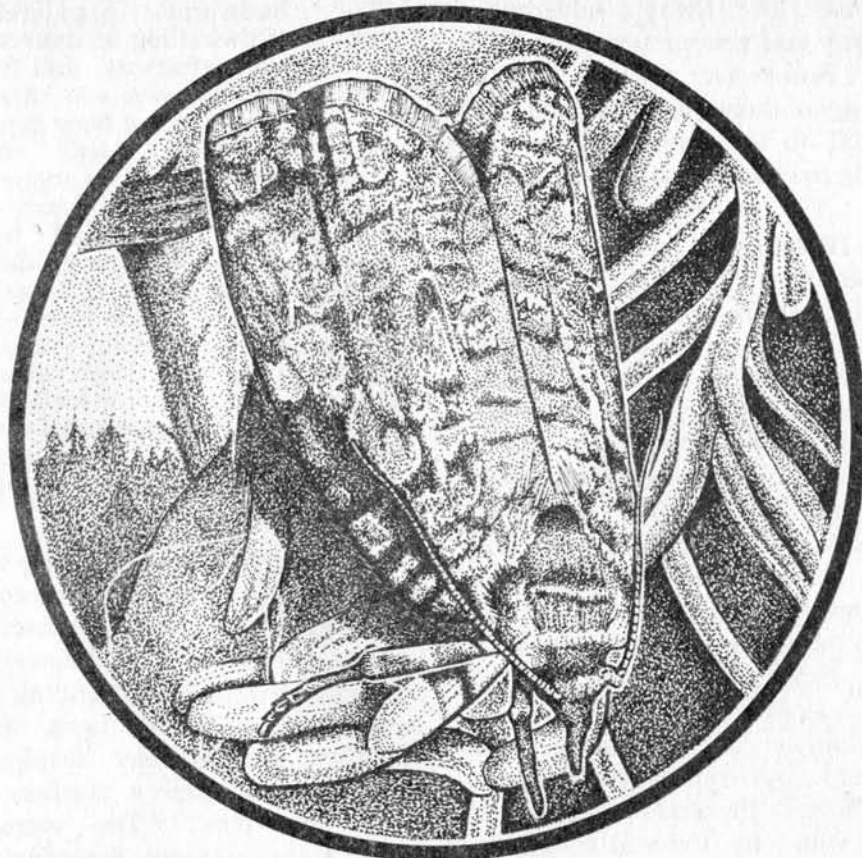


# Canada's Moth War

Cape Breton  
Islanders break a  
multi-national

Elizabeth May

Illustrations by MIKE FROST



**In an effort to prevent the ravages of the spruce budworm, the New Brunswick Government has used increasingly powerful chemical sprays, including Fenitrothion, an organo-phosphorous nerve poison. The spraying has not only failed to eradicate the spruce budworm, it has also been linked to the emergence of Reye's syndrome, a rare and fatal disease.**

In 1922 J.D. Tothill, a Canadian forest entomologist, predicted that, unless certain forest management steps were taken, large areas of fir forests in eastern Canada would be devastated in 30 years by an insect known as the spruce budworm. His prediction proved accurate to the year: in 1952, DDT was sprayed on 200,000 acres of forest lands in the province of New Brunswick. Since that time, the acreage infested with spruce budworm has grown steadily, and so have the spraying operations. In 1976, 9.5 million acres of forest lands were sprayed, and that number may get even bigger. In the meantime, a rare and sometimes fatal disease known as Reye's Syndrome was linked to the spray programs, and the citizens of Nova Scotia's Cape Breton Island were embroiled in an effort to halt the spraying.

Budworm infestations are not new to eastern Canada. Since at least 1704, the forests of the maritime provinces (the provinces on the eastern coast of Canada) have suffered sporadic outbreaks, and it was following a particularly bad

outbreak in 1922 that Tothill pointed out what he felt was the most important condition that allows budworm populations to reach epidemic proportions. It was Tothill's opinion that as the more valuable species of pine and spruce were harvested, the composition of the forests would change drastically, and the result would be large monocultures of balsam fir, a tree that is particularly favored by the budworm but at the time was not favored by the forestry industry. Tothill suggested that forest management practices which

maintained healthy forests of diverse species with softwood kept under 40 years old would result in what he called 'budworm-proof' forests.

What Tothill was arguing in 1922 was that it is in man's economic interest to develop and utilize scientific forest management practices. His advice was ignored. The forestry industry could not see any economic gain to be made from a cash outlay in the 1920s to prevent an epidemic which might occur in the 1950s.

In the intervening thirty years, several things happened to affect the forestry industry's view of the budworm. Most important was the development of a thriving pulp industry in the maritime provinces. As the industry grew, the balsam fir, once considered a 'weed tree', was becoming a highly important commercial species that warranted protection against budworm outbreaks. Another factor was the development of DDT and its almost immediate use as a forest protection tool. DDT was relatively inexpensive, it killed insects effectively, and it could be applied by aircraft.

## STOP PRESS

**News has come in that the Forestry Commission is about to commence spraying thousands of acres of lodgepole pines in Scotland, in an attempt to eliminate the pine beauty moth. The chemical they will use is the deadly fenitrothion, which as this article shows, has been totally discredited in parallel circumstances in Canada. Could any greater folly be imagined?**

Because of these advantages industry and government officials in New Brunswick settled on the strategy of delivering one good dose of DDT to the infested areas and ending the budworm problem.

#### Early DDT Use

And so, in 1952, 200,000 acres of New Brunswick forests were sprayed with DDT. The operation was very successful, killing 99 per cent of the budworms in the sprayed area. The New Brunswick International Paper Company and government entomologists believed the infestation had been eliminated. It was with some surprise and frustration that they learned the area of infestation in 1953 was four times larger than in 1952. Committed to the idea of aerial spraying, the provincial government and industry then formed a government-run corporation, Forest Protection Limited, to work with the Canadian Forestry Service to develop further insecticide spraying programs to control the budworm.

In the neighboring province of Nova Scotia, the Cape Breton Island area also was infested. Due in part to the fact that the pulp industry was not as important to the Nova Scotia economy and also to advice from Lloyd Hawboldt, a forest entomologist with the Nova Scotia Department of Lands and Forests, Nova Scotia did not jump on the DDT bandwagon. Hawboldt recalled Tothill's advice of thirty years before and asserted that spraying could prove to be self-perpetuating.

Hawboldt also urged that forest management be undertaken immediately to prevent a similar outbreak in the future. As Tothill had predicted, the growing percentage of balsam fir in the Cape Breton forests was creating conditions for an even more severe budworm attack.

#### Aggravating the Problem

The 1950s budworm infestation in Nova Scotia collapsed of natural causes, but the heavily sprayed New Brunswick infestation increased every year. Clearly, DDT was not bringing relief to the forestry industry, but it was bringing undesirable side effects. Rachel Carson devoted a chapter in *Silent Spring* to the spray program. She wrote:

"The budworm populations, instead of dwindling as expected, have proved refractory, and from 1955 to 1957 spraying was repeated in various parts of New Brunswick and Quebec, with some places being sprayed as many as three times. By 1957, nearly fifteen million acres had been sprayed . . . There is no evidence anywhere that chemical spraying for budworm control is more than a stopgap measure (aimed at saving the trees from death through defoliation over several successive years), and so its unfortunate side effects will continue to be felt as long as spraying is continued."

Unable to claim that spraying was successful in eliminating budworm populations, Forest Protection Limited and the New Brunswick government claimed that ending the infestation had never been their intention. Instead they developed what they now call a strategy of "crop insurance." The stopgap nature of the spraying, described by Carson as a condemnation of the program, now was called a virtue by the government and the forestry industry. Keeping the trees alive from year to year to keep the pulp and paper industry supplied in New Brunswick became the rationale for increased yearly spraying and increased yearly cost — both fiscal and environmental.

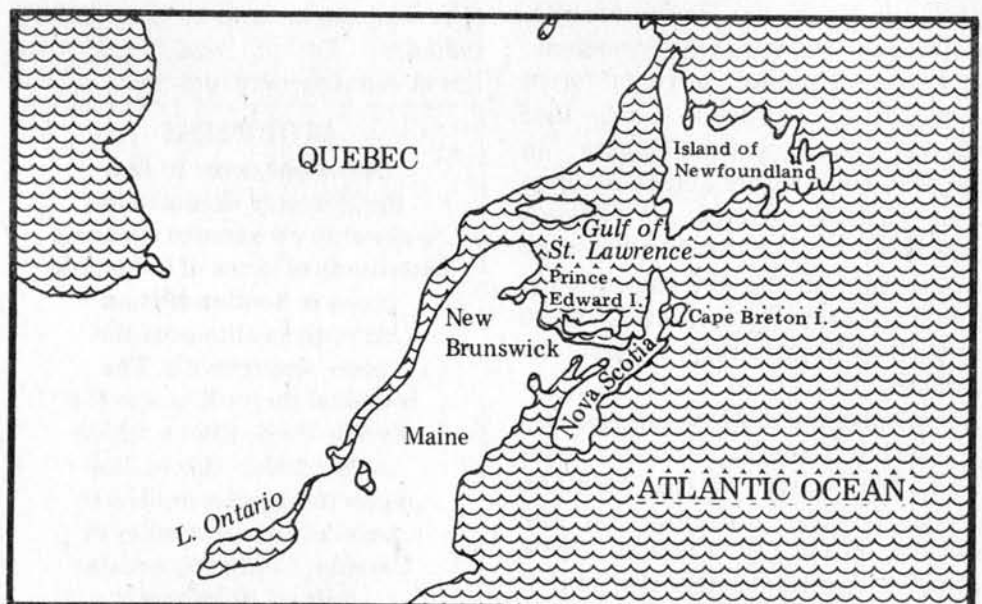
In 1968, for the first year since 1952, New Brunswick was not sprayed with DDT. Instead, over three million acres were sprayed with an organophosphate, *fenitrothion*. This spraying also was hailed as 'successful'. Unlike DDT, fenitrothion was claimed

to be safe and not harmful to the environment; although New Brunswick officials had some difficulty explaining away the deaths of up to twelve million birds in one year and did express some concern over the death of aquatic insects on which fish depend for food; all in all, they persisted in claiming that annual expenditures of ten to fifteen million dollars to spray budworms was a strategy designed to protect an industry vital to the province's economy, with minimal environmental damage.

New Brunswick was now in the unnatural state of perpetual epidemic. The killing of a large proportion of the budworm population (about 85 percent was termed successful) left the survivors with an abundant food supply; starvation was no longer a limit to population growth. The lethal effect of both DDT and fenitrothion on the birds, small insects, spiders and wasps which prey on the budworms removed another check. The only remaining check on unlimited population growth was the annual dousing with chemicals from the air — the very thing which allowed the infestation to continue and spread.

#### Spreading Infestation

The perpetual epidemic in New Brunswick created a breeding ground for infestations in other areas. The state of Maine began a program of yearly spraying in 1972; Quebec also began spraying with fenitrothion in 1970 in an escalation of its previous spraying program. And budworm moth flights





caught in the predominantly easterly winds found a perfect breeding ground in the highlands of Cape Breton Island. As Tothill and Hawboldt had warned, the predominance of balsam fir provided the perfect target for budworm attack.

As in New Brunswick, the pulp industry had gained increased importance in Nova Scotia. In 1961, a large multinational corporation, Stora Koparberg, had opened a pulp mill and begun increased harvesting of softwood for pulp on Cape Breton Island. In an effort to persuade Stora Koparberg to begin operations in Nova Scotia, the provincial government, anxious to find work for its unemployed, signed long-term contracts guaranteeing the company very low power rates, tax concessions and a lease granting exclusive use of the 1.5 million acres of government-owned lands. In addition to harvesting on their leased land, the company was expected to stimulate the local economy further by purchasing wood from private landowners.

In 1975, when the budworm epidemic in Cape Breton's highlands began to cause severe defoliation on the company's leased lands, the Stora Koparberg subsidiary, Nova Scotia Forest Industries, Limited (N.S.F.I.) requested a permit to spray 100,000 acres with fenitrothion. The Department of Lands and Forests studied N.S.F.I.'s request and recommended against granting it on the grounds that the department felt the threat to industry did not outweigh the risk to the environment. Drawing on past experience with budworm infestations, Nova Scotia's deputy minister of lands and forests stated simply, "budworms haved hit Cape Breton before, but they died out on their own."

#### Local Opposition Begins

Despite the recommendations of the government's own experts, the provincial cabinet voted to grant N.S.F.I. a permit to conduct aerial spraying. In the rural, sparsely populated island of Cape Breton, the significance of the spraying program in the highland forests was not publicized. But gradually people began to wonder whether insecticides would affect the bald eagles and whether the poisons would find their

way to the many streams people depended upon for water. Within a few weeks, a petition campaign was organized to call for a public hearing by the province's Environmental Control Council. The petition was mimeographed in the basement of a church, was circulated at Tuesday night bingo games and in general stores, and was talked about around old wood stoves. Looking at the experience in New Brunswick, Cape Bretoners began to ask what point there was in spraying when the result would most likely be increased infestation. Many people who had visited New Brunswick's forests commented on the eerie silence and the hundreds of dead warblers there.

Through February and March 1976 opposition to insecticide spraying grew, and a group was formed, calling itself Cape Bretoners Against the Spray. Three thousand signatures had already been collected when, on March 31, a story broke on the front page of the *Cape Breton Post* which changed the level and content of the spraying debate. The heading, 'Fatal to Children — Disease May Be Linked to Budworm Spray', referred to Reye's Syndrome, a disease which is actually a group of symptoms first identified in 1963 by R.D.K. Reye, a doctor in Sydney, Australia. Occurring in children, the syndrome starts with a minor viral infection, as in flue or chicken pox; then, suddenly, the child experiences high fever, convulsions, coma and often death. As it is considered a very rare disease, physicians were disturbed when cases began to be diagnosed in New Brunswick and were referred to the Isaak Walton Killam Hospital for Children in Halifax, Nova Scotia.

In was at this point that John Crocker, a physician on the staff of the Children's Hospital and the Pediatrics Department of Dalhousie Medical School became interested in the disease. Crocker was puzzled by the fact that a rural family doctor was able to diagnose this relatively rare disease in time to refer the children to the Halifax hospital. A fatal case of what was first diagnosed as chicken pox apparently had prompted the referring physician to investigate complications of virus diseases, and he eventually settled



on Reye's Syndrome as the actual cause of death. Another doctor in rural New Brunswick had treated several cases of Reye's Syndrome. In the winters of 1971-1972 and 1972-1973, nine New Brunswick children were victims of Reye's: five of them died. Crocker felt sure that there were others who had suffered but were never correctly diagnosed.

#### Reye's Syndrome Connection

Crocker began to wonder why Reye's Syndrome was occurring in New Brunswick and not in Nova Scotia. The most obvious difference in environmental factors between the two provinces was the annual spraying program in New Brunswick. The first step, obtaining some of the spraying mixture of emulsifier and insecticide, proved to be no easy matter. The New Brunswick Department of Natural Resources, responsible for the spray program, labeled its contents 'classified' and refused to co-operate with Crocker's research. Running into bureaucratic walls at every turn, Crocker went back to the brain tissue of the dead children to determine whether any insecticide was present. After analysis of the tissue, he identified the presence of fenitrothion. The Canadian National Resource Council refused to verify his conclusions. He went to the pesticide distributors and asked for 50 cubic centimeters of fenitrothion, but the company refused, informing him that it was available only by the train-car load. Finally, the New Brunswick Department of Health relented and gave the doctor some samples.

Working on the theory that Reye's Syndrome occurred as a result of an interaction between a virus and exposure to an insecticide or com-



bination of insecticides, Crocker exposed mice to various pesticide mixtures and then to a sublethal dose of flu virus. His research indicated that the link was not the insecticide itself but the petro-chemical emulsifier used to disperse the insecticide. Described by Crocker as a "crude gibgash mixed up by the train-car load" the emulsifier is a by-product of the oil-refining process. These emulsifiers are used with herbicides as well as insecticides and are found in some latex paints. Usually considered non-toxic, they have been used without scrutiny throughout the U.S. and Canada. Crocker found that when large quantities of presumably non-toxic petroleum oil by-products are introduced into the environment, as pesticide dispersal agents and emulsifiers, an increase in viral lethality with a concomitant influence on the liver and central nervous system occurs in young mice previously primed with such chemicals. The mortality rate in mice exposed to virus and emulsifier was 85 percent, higher than that due to any insecticide or combination of insecticides.

On the day following the *Cape Breton Post* story, the permit to spray was withdrawn. In a statement to the press, Minister of Public Health Alan Sullivan vowed that spraying would never take place in Nova Scotia as long as any threat to human health remained.

### Conflict Escalates

The decision in Nova Scotia triggered a wave of protest against spraying in New Brunswick. The link between spraying and children's deaths was hotly denied by New Brunswick officials. But parents of the dead children continued to call

for an end to the spraying. Organizing as the Concerned Parents Group, they found a 1973 Health and Welfare Canada Handbook which warned that aerial spraying should never take place in inhabited areas and that children should be evacuated in case of proximity to an insecticide spraying program. The issue of pilot error was emphasized, as parents recalled planes flying low over homes, school yards, and school buses without shutting off the jets of poison. And, more than a dozen times between May and June 1975, an entire load of 625 gallons of fenitrothion had been dumped, either through crashes or mechanical failure.

Despite increasing public pressure against the spray program, the New Brunswick government launched its most extensive program ever — 9.5 million acres. The official attitude was summed up by Minister of Natural Resources Roland Boudreau: "I don't like to see people dying. This is one of the things I really wouldn't like to see. But, at the same time, knowing the forest as it is, my decision will have to be with the forest and with the future of New Brunswick."

The summer passed, and budworm egg mass counts in Cape Breton's highlands set new records for severe infestation. At the first mention of a spring 1977 spraying program, the antispraying forces began a letter-writing campaign to the provincial cabinet. However early in December Eric Sunblad, the president of Stora Koparberg, flew in from Sweden for a two-day

media blitz of pro-spraying propaganda. He announced that budworm damage was so severe and widespread that it was no longer the company's responsibility to undertake spraying and demanded that a massive aerial insecticide spraying program be carried out by the Nova Scotia government. Unless this was accomplished, he warned, Stora Koparberg would close its Cape Breton mill within five years, putting two thousand men out of work. "Nova Scotia is sick", he said, "it must take the medicine."

His visit coincided with the release of a report favorable to spraying by a local board dominated by the pulp industry and a 60-page report issued by N.S.F.I. echoing Sunblad's threats. It called for massive spraying "on as large a scale as possible," both on government lands and "all privately owned forested acreage . . . the highlands, lowlands, scenic areas, and campgrounds" — or the entire land mass of the island, except for lakes and industrial areas. The recommended treatment was 3 oz./acre, fenitrothion. The report claimed that the budworms would kill half the standing softwood throughout Cape Breton over a six-year period, resulting in critical shortages to the mill and necessitating its closing.

### The Issue of Economics

Reaction to Sunblad's visit was swift. The mayors of towns surrounding the N.S.F.I. mill called for the premier to meet immediately with Sunblad and to assure him that Nova Scotia would spray. The New



Dying Forest: New Brunswick.



Brunswick government was anxious to have Nova Scotia spray: for one thing, her refusal, on grounds of public health, to spray the previous spring, had made New Brunswick officials very uncomfortable. If spraying was dangerous to Nova Scotians, then it was, of course, dangerous to New Brunswick residents, too. For another, Nova Scotia would have to hire Forest Protection Limited for the job, which would take some of the financial burden of maintaining an antibudworm air force of forty-four planes off New Brunswick.

In addition to claiming that two thousand jobs would be lost in the event that the forests were not sprayed, N.S.F.I. played down the dangers of spraying. The company claimed the cancellation of the spraying program the previous spring had been precipitous and that recent evidence showed that there was no connection between Reye's Syndrome and budworm spraying. They produced a study commissioned by the government of New Brunswick which concluded after having access to all Crocker's research that it was 'unlikely' that there was a correlation between 'experiments with baby mice, Reye's Syndrome in humans, and the forest spraying operations in New Brunswick'. On the other hand, the Center for Disease Control in Atlanta, Georgia, reported that the incidence of Reye's Syndrome in the U.S. was increasing, from eleven cases in 1967 to 379 cases in 1974, and that it was most likely a viral and environmental toxin interaction that triggered the syndrome.

Within days of Sunblad's visit, Cape Bretoners Against the Spray decided action was needed immediately to offset the tremendous deluge of pro-spraying propaganda through the province. They found an excellent, free vehicle for reaching the public by calling in to local radio shows. The press began to contact Cape Breton Landowners for information about the dangers of the insecticide itself. Proponents of fenitrothion claim it is short-lived in the environment, breaking down within a few days. Cape Breton Landowners, however, were able to show that some of the breakdown products, such as amino fenitro-

thion, carboxy fenitrothion, and nitroso derivatives, were potentially carcinogenic. And, while fenitrothion might be short-lived under laboratory conditions, it actually persisted much longer in the forest environment, being found in the soil years after spraying. The research on human beings exposed to chronic low doses of this family of insecticides indicates they suffered from higher than normal levels of nervous disorders, such as tremors, loss of memory, dizziness, and lack of coordination. Other studies on mammalian toxicity showed a "very prolonged effect from a single dose" of fenitrothion on cholinesterase activity, indicating storage of the compound soon after exposure and gradual release into the system. People exposed to organophosphate insecticides were also subject to leukopenia, or low white blood cell count, leaving them more susceptible to infectious disease.

In mid-December 1976, the growing number of antispraying workers gained a new voice in Earle Reid, chief of medicine of the Halifax Infirmary, who told reporters, "We'd be out of our minds to allow spraying" and accused N.S.F.I. of "economic blackmail." The next day N.S.F.I. officials charged that Reid was "misinformed" and quoted government entomologists to discredit him. Local doctors began to be increasingly outspoken in their personal opposition to insecticide spraying. By early January, the Nova Scotia Medical Society had announced its opposition to aerial spraying in Cape Breton.

#### A New Weapon

It looked very much as though the cabinet would vote against spraying, as public concern over the emulsifier, Reye's Syndrome, and fenitrothion, as well as distrust of industry's motives, grew. Two days before Christmas, N.S.F.I. executives held a press conference and claimed that they had never recommended any insecticides — that the debate surrounding fenitrothion was due to a "false assumption" by antisprayers. This claim was made despite the fact that the company's own report had recommended fenitrothion and had even recommended the dosage. They announced that



they were now prepared to recommend a "safe" insecticide called *Sevin* which was used "without an emulsifier".

With a cabinet vote expected in the first week of January, decisive action was needed to educate the press and the public to the potential dangers of *Sevin*. To do this, the opponents of spraying headed for Halifax, two hundred miles away, to hold a press conference. They assembled a group of experts, including Reid, Hawboldt, two Cape Breton County presidents of woodlot-owners' associations, an oysterman, the former president of the Canadian Nature Federation, Ian MacLaren, and John May.

Reid spelled out the facts on *Sevin*, the trade name for carbaryl. With 350 known cases of carbaryl-related poisoning in the medical literature, he dismissed the term "safe" and revealed to the press that carbaryl was under investigation by the U.S. Environmental Protection Agency (EPA) and had been included in a list of 44 substances which "may be too hazardous to man or the environment to allow continued use."

This was not the first time that an N.S.F.I. statement had been found to be inaccurate. For instance N.S.F.I. had always stated that insecticide spraying was common in Sweden. It was later learned that spraying from ground level was allowed but that no aerial spraying had been permitted in Sweden since 1969. The press in faraway Halifax had been convinced that all the woodsmen in Cape Breton favored spraying. They later learned that a large number of private woodlot owners felt that N.S.F.I.'s real motives for wanting spraying had



more to do with maintaining its current monopoly of supply than with a genuine fear of running out of pulp. If the company was not permitted to spray on its leased land, damage from the budworm would cause a decrease of fresh wood there, and the company would be forced to increase its purchases of privately owned wood. This would give private cutters a leverage to raise the price per cord. The company, of course, would prefer to protect the cheap source of supply on its leased land by spraying at the taxpayers expense. As the public began to perceive this motive, the anti-spraying effort gathered momentum. It clearly was no longer fair to present the issue as one of jobs versus health. It began to look more accurately, as one of a multi-national corporation versus the people of Cape Breton.

#### Economic Alternatives

As an outgrowth of their press conference, Cape Breton Landowners decided to clarify the issue further by preparing a brief to the cabinet and legislature. Titled "Alternatives to Spraying," it approached the issue from the viewpoint of forest management. The health issues were not discussed in the report, since, even without health issues, a very strong case could be made against spraying. In addition to perpetuating the budworm epidemic, it was demonstrated that spraying actually would endanger a sustained yield over the next 40 years. By keeping the old trees standing, natural regeneration would be largely prevented. Looking for alternatives to spraying, the report emphasized good forest

management. Salvaging budworm-killed wood, building roads to inaccessible areas of the marketable forest, creating fire breaks, manual planting of diverse species, and continual thinning were necessary projects which could help alleviate Cape Breton's staggering 25 per cent unemployment. Cape Breton Landowners estimated that a thousand men could be put to work indefinitely as an alternative to spraying. Implementation of wood-burning electrical generators was advocated, as these could utilize the salvaged wood, treetops, and hardwoods left behind in the wake of the huge harvesters used in N.S.F.I.'s clear-cutting operations. The unusable wood and branches would be chipped and distributed over the cleared area to encourage natural degrading to enrich the soil. The issue of the devastation of clear-cutting itself was not addressed specifically, but it was clear that the violence done to the land needed attention. The five-foot-deep ruts left by the monster machines should be filled, and the rules regarding avoiding the clearing of stream banks, in order to prevent erosion, should be more strictly enforced. This, too, meant increased employment.

In an effort to find out exactly how carbaryl was used without an emulsifier, the author telephoned the Maine Bureau of Forestry and was told that carbaryl was used in a pre-emulsified mixture called Sevin-4-Oil, which was sold by the train-car load, and then cut with fuel oil for spraying. The chemical makeup of the emulsifier was classified as a trade secret and had not been tested for a possible connection to Reye's. The existence of a suspect emulsifier with carbaryl was the straw that broke the camel's back for some members of the cabinet. Although there was not absolute proof of a connection between Reye's Syndrome and the emulsifier, the spectre of children dying in Cape Breton the first winter after a spray program loomed large. Reye's Syndrome had become a major political issue in Nova Scotia.

Newfoundland's minister of forestry announced that Newfoundland would not spray to control its

budworm infestation. Public opinion in Cape Breton was moving perceptively toward overwhelming opposition to spraying. A poll conducted by Cape Breton Landowners suggested that four out of five islanders now opposed spraying. Within a week of release of the poll's results, Premier Regan appeared on television. In a short statement, he announced that no spraying would take place in Nova Scotia. A government task force was appointed to look into forest management, and, although no representatives of Cape Breton Landowners were chosen to serve on it, at least one of the major planks of the antispray platform, that of woodburning electrical generators, has been endorsed by the task force.

In the meantime, spraying goes on in New Brunswick, where 43 per cent of all insecticides sprayed on North American forests are used every year. A New Brunswick newspaper, the *Kings County Record*, has appealed to the Queen and to other nations to intervene, making the case that the killing of millions of birds by spraying is in violation of a 1916 international treaty for protection of migratory birds.

To the best of my knowledge, the decision not to spray Cape Breton, is the first case of a successful citizen campaign against the demands of a powerful multinational corporation to conduct aerial spraying. It is even more surprising that it happened in a rural, unsophisticated, unemployment-ridden area like Cape Breton. There must be a lesson worth learning from the Cape Breton experience. Perhaps it is that environmentalists must be increasingly aware of the persuasiveness of the threat of unemployment and meet the threat head on. Without defusing the jobs issue, any amount of information on the health issue is likely to fall on deaf ears. Recognizing this and convincing people of the universal benefits of a holistic response to environmental problems may well be the challenge of the next decade.

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# Forestry and the Community

Laurence Roche

**A national policy of preservation and re-afforestation is vital to the future health of Britain.**

With the exception of the Netherlands and the Irish Republic, Britain is the least forested nation of Europe. Its forest resources are negligible in relation to its needs and in relation to those held by its nearest neighbours. Its managed forests are owned by the State and private landowners, and, apart from the latter, the great majority of farmers have had a negligible or negative role in forestry and have not been encouraged by the State to play a more positive role. There are virtually no community forests.

One would have thought that the need for massive, sustained and carefully planned forestry programmes and support for forestry at every level would be self-evident. Not so. A great diversity of views has been expressed, and the public, and consequently our political leaders, must be forgiven if they are confused. Indeed one must ask if it is possible for the British public to understand the role of forestry when so many apparently contradictory opinions have been expressed on forestry and related subjects by expert authorities. Let me give some examples:

"... there is no technical reason why tropical hardwoods should not substitute extensively for softwoods in the British markets ... there are sufficient tropical hardwoods to last 400 years" (*Richardson 1970*).

"... in the industrial areas of the world, provided their material standard of living continues to improve, all non-aesthetic, large-scale industrial uses of wood will be taken over by synthetic plastics and derivatives of the ALFeSiCa minerals within the next half century (*Dawkins 1969*).

The best way of countering an adverse balance of payments with say Russia might not be to invest more money in growing trees with the object of reducing timber imports, but to invest in industries which could earn more by exporting their products to Russia" (*Johnston et al 1967*).

Between them, these three quotations, either explicitly or implicitly embrace most of the conventional arguments against forestry: wood can be purchased indefinitely more cheaply from abroad; wood substitutes are or will be available in abundance; and finally, it may be more profitable for the nation to use capital for purposes other than for growing trees. The last argument must be taken most seriously for it represents a point of view which came to full flower in the Interdepartmental Cost/Benefit Study on Forestry in Great Britain (HMSO 1972), a study which for a time seriously damaged the cause of forestry in this country. Though there could hardly be a more important distinction, with major implications for national well-being,

particularly since the massive increase in the cost of energy, it is a view which does not distinguish between primary goods (in this case renewable) and secondary goods. In purely quantitative economic terms the manufacture of soap powder for export to Russia, if it is marginally more profitable, is as good as growing trees in Britain. Fortunately, and not surprisingly the old fashioned early industrial revolution economics of the Interdepartmental Study with its concomitant spiritually impoverished utilitarian philosophy — push penny is as good as poetry if it gives equal pleasure — has not had any lasting effect on public opinion, and this is indicated by the recent government announcement of new and generous support for forestry at all levels.

The remnants of the ancient forests of this land have made a significant contribution to the growth of Britain as an industrial power. Our ancestors mined rather than managed forest resources and deprived the nation of its forest capital. This loss of forest capital should be central to all discussion of forestry in Britain. It is obvious that the cost of planting a logged area must be borne by part of the revenues obtained from the previous crop. If there is no crop to log, as is the case in Britain, the forest capital has been used up, a decision must be made by the State to support

the replacement of forest capital. The acceptance of this responsibility has social, ecological, environmental and economic consequences of great significance and with a direct bearing on the material and spiritual well-being of our children's children. It is a sure sign of national confidence if a nation so decides, and a recognition of a new order of priorities in an age of limited resources and environmental awareness.

But such a decision and its implementation should not be pressed without the fullest possible involvement of the community which finds expression primarily through local government, voluntary associations and societies, and not necessarily through professional organizations. The latter have an important but different role to play. The planting of forests on a massive scale, and without reference to contemporary community needs and aspirations, can result in vehemently hostile reactions, more often than not wholly unwarranted in relation to the long-term objectives of the protesters. The great uniform coniferous block becomes the forestry analogue of Centre Point, a large alien structure devoid of human content and without any obvious value to the community between establishment and felling.

But forestry in Britain has much more to it than that. Rightly viewed, and rightly planned, with the community as its focal point, it becomes part of a new revolution. A narrow traditional forest policy, devoid of vision and imagination, and based primarily on a view of forestry as a rural based industry's response to urban demands for wood products, and with only marginal social value, can never achieve the massive increases in afforestation necessary if this nation is to replace even modestly its lost forest capital and achieve some parity with the nations of Europe in this respect.

### Forestry and the Farming Community

There is no major ecological reason for the extraordinarily sharp distinction made between forestry and farming in Britain, and the quite separate, and almost mutually exclusive, education given to professional foresters and agriculturists has resulted in devastating changes

to British landscapes since the last world war. This, of course, is not the only reason but it is one of the most important. If we look at some statistics we will see that the word 'devastation' is not too strong.

*The most important single change in the landscape of post-war Britain has been the loss of trees* (one might well ask where were the foresters?) In some arable counties in the east of England over eighty per cent of the trees have been lost in the last twenty-five years. This does not include the loss of nine million elms killed by the Dutch elm disease. Elms formed twenty-one per cent of hedgerow and parkland trees in England and thirteen per cent in Wales in 1951. In 1975, fifty-two per cent of all non-woodland elms were dying or dead (Countryside Commission 1977).

The loss of hedgerows has been documented in considerable detail, (Pollard, Hooper, Moore 1974), and when we talk of the loss of hedgerows we are talking primarily about the loss of trees. Removal of hedgerows rose to a peak in the mid 1960s with the loss of about ten thousand miles of hedgerows per year. Though this rate of loss has been substantially reduced since 1970 hedgerow removals continue throughout the country. The magnitude of the loss in terms of cellulose is indicated by a previous census which showed that hedgerows and park timber in England and Wales equalled a volume of a hundred thousand hectares of reasonably well stocked woodland and represented 33 per cent of the total volume of hardwood timber in England and Wales (Richards, 1976). Richards concluded that hedgerow and park timber was likely to be one of the chief sources of large sized hardwood timber and an important part of the national growing stock.

Approximately four hundred thousand hectares of woodlands have not fared much better, and it is believed that almost everywhere in the country they are over-mature or already decadent, and, quite astonishingly for a nation with such a small forest resource, it is an accepted fact that standards of management and maintenance of small woodlands have declined.

The replacement of mature trees

in the landscape requires a large number of saplings. It is believed that six saplings are needed to replace each mature tree. The Forestry Commission has reported the ratio of saplings to mature trees as 2:1 in 1951, and 1:1 in 1965. The most recent information gives a ratio of one sapling for every two trees (Countryside Commission 1977). The conclusion is clear. British landscapes are being denuded of indigenous trees and the mature trees which remain will not for the most part be replaced by natural regeneration.

These statistics are of major significance not only because they indicate a substantial depletion of the nation's stock of hardwood timber but also because they indicate a serious undermining of the ecological basis of conservation of the genetic resources of its indigenous flora and fauna. The statistics available to us in this respect cannot be ignored. The decline in wildlife habitats is occurring throughout the lowlands and the most fertile uplands of England, Wales and Scotland, and the rate and extent of change during the last thirty five years has been greater than during any similar length of time in the history of the nation. To give an example of the magnitude of possible losses to our national heritage of fauna, it is estimated that if the trend continues and if all farms were 'modernized' (this without much exaggeration could simply mean cleared of trees) about eighty-five per cent of the bird and ninety-five per cent of the butterfly species would be lost from farmed landscapes (NCC 1977). It remains to be seen if the ecological basis of sustained farm production might not also be undermined if the trend continues. In the long run the so-called inefficient small farming systems of rural France, with their wooded landscapes and accompanying economic and cultural patterns, may prove more robust and sustainable ecologically and socially, than some of our own more recent treeless models.

Eighty per cent of the land surface of Britain is under some kind of agricultural use. The changes in landscape, with the accompanying loss of a substantial part of the remaining stock of indigenous trees and wildlife habitats, are taking place



on this land and have occurred despite the fact that farmers collectively would not have wished such changes so obviously detrimental to the long-term interests of the nation. These changes have come about unwittingly and almost as an unnoticed side effect of post-war government policy in regard to agriculture. They were part of the prevailing economic and cultural patterns of the day. Because of this, and because he was principally preoccupied in the post-war years with Sitka spruce and lodgepole pine, the professional forester appears not to have noticed — or if he did, did not comment — that the nation's stock of indigenous trees was being massively eroded, and its heritage of flora and fauna undermined.

Surely Britain cannot afford the luxury of a single use occupying three per cent of the population on eighty per cent of its land mass? But we will never achieve a level of diverse forest cover comparable to the average for EEC countries, and necessary in the long-term interests of the nation generally, unless the goodwill and interest of the farming community are harnessed to the cause of forests, woodlands and trees. This cannot be achieved by Tree Preservation Orders, or bullying directives, but by economic incentives, and, perhaps of more importance, by the availability of professional expertise.

It has already been indicated that there is or was a volume of wood in hedgerows and parks in Great Britain equal to the volume on a hundred thousand ha of reasonably well stocked woodland, and that hedgerow and park timber is likely to be one of the chief sources of large-sized, hardwood timbers. Should not professional foresters, therefore, be as interested and as expert in the management and maintenance of woodlands and hedgerows on agricultural land for a multiple of purposes (economic, ecological and environmental), as they are on the management, mostly for a single purpose, of large-scale conifer forests in the uplands? And should not institutional arrangements be such as to ensure that this expertise is vigorously sought by and extended to the farming community?

### Forestry and the Urban Community

There are two principal ways in which foresters can respond to increasing demands by the urban community for access to forests and woodlands. One way is carefully to open up and provide appropriate facilities in relatively small areas of established forests. This has been the policy of the Forestry Commission (see Stewart 1976), and its achievements to date in this respect are rightly described as excellent. In the long run, however, this cannot represent the only response to the growing needs of the urban community for access to forests and woodlands. It must be complemented by the second approach which is to bring forests and woodlands to people; to intrude into the decaying centres of our great cities through the urban-rural interface, and with the involvement of local authorities, a robust forestry tradition and practice which will in time ensure an intermingling of trees with people, and will render increasingly irrelevant the dusty shrubbery, wilted flowers and indifferently cut grass that all too frequently pass for green space in suburbia.

There are numerous types of

wasteland occurring particularly in the urban-rural interface. These have been listed by Richards et al (1976) e.g., urban clearance areas, old urban parklands, urban refuse sites, mineral extraction sites, and urban-rural fringe lands. The total area of such wasteland in Britain is I think unknown, but what little is known about this problem is sufficient to indicate that the amount of waste-land of this nature is very high.

A survey of the Thames estuary region showed that between 1962 and 1972 no less than 33 km<sup>2</sup> of land had degenerated to waste vegetation. To this was added a further 9.5 km<sup>2</sup> where waste vegetation had been left long enough to become scrub woodland. The tended open space in the area was also substantially increased. In fact 6 km<sup>2</sup> of housing were destroyed to make room for it. The increase in the amount of land, taken for transport projects, was sixteen times as great as the amount taken up by housing (Coleman 1976). However, as Coleman pointed out, the statistics for wasteland represent by far the most impressive change of land use between the two surveys. 'This



"The great uniform coniferous block becomes the forestry analogue of centre point."



"creating a new area of waste land . . ."

category shows the largest absolute gain, and its net gain was sixty-one times as great as the gain in residential land. It also gained from the largest number of other uses; even demolished housing was left to become overgrown as wasteland and scrub. The only category that was too sacred to be allowed to degenerate into wasteland was tended open space' (Coleman 1976).

Anyone who has travelled extensively in Britain will not be surprised by these statistics. Wasteland occurs in other regions outside the Thames estuary. "South-east of Manchester, for example, an extensive urban fringe, with its fragmented farmland and idle land, has been left in an unsatisfactory state while a large new building estate has been initiated out in the country. This is destroying former farmscape and creating additional urban fringe by cutting off more fragmented farmland between it and the already urbanized area, and also by causing a new wave of wasteland to appear around its margins" (Coleman 1976). It is my view that if forestry forms part of planned development, and if it provides for the full involvement of the local community, it is the one form of viable land use that can most satisfactorily heal the jagged edges of the urban-rural interface, and provide a transition zone between town and country, environmentally of high quality, productive, and requiring minimum maintenance in the long run. What are the silvicultural possibilities of such lands? Here I must refer once again, but this time approvingly, to the brilliantly pro-

vocative paper on forestry in Britain by my predecessor at Bangor

"We could greatly extend the planting of hardwoods — chestnut, lime, hornbeam, wych elm, walnut, among others — beautiful and exciting species which (if we continue our present policies) the next generation of foresters will scarcely be able to recognise; we could diversify out coniferous species, selecting them not for their ability to fill the gaping maw of the pulpwood chipper but for the colour and grace they would give to our disturbed landscape; mixtures, uneven-aged forests, a much wider range of management objectives, a variety of silvicultural schedules and regeneration systems, even the return of what is biologically the most attractive system of all — coppice with uneven-aged standards — would be possible. To a forester nurtured upon Sitka spruce and gleyed podsoles, to practise the sort of forestry he has hitherto only read about in textbooks would prove a heady and stimulating wine"

*Richardson, 1970*

In the Rhur, the most heavily populated industrial area of the Federal Republic of Germany, forestry plays an important role. It has two major objectives: (i) to produce wood and (ii) to provide recreation, and it is considered that the two objectives are complementary (Petsch 1976). Following the Second World War an integrated plan of development embracing both these objectives and involving the participation of municipalities and private owners, was carried out. The results (see Petsch 1976) provide guidelines for the planned integration of environmental forestry

and future industrial development in this country as well as indicating its present possibilities for the rehabilitation of industrial wasteland.

There are already signs of a less haphazard and less tentative approach to environmental forestry in Britain, though at the present time such activity is often looked upon as the domain of arboriculture. This is a mistake. Standards of management of woodland ecosystems have everywhere declined, and emphasis has shifted from these to large coniferous blocks on one hand, and individual trees in populated areas on the other. A more balanced order of priorities in relation to community needs would restore greater emphasis to establishment and management of woodland ecosystems of varying sizes and diversity, and this, indisputably, is the domain of the forester.

National agencies concerned with the environment, such as the Nature Conservancy Council, the Institute of Terrestrial Ecology, and the Natural Environmental Research Council, together with the environmental science departments of the universities, have accumulated, and are accumulating information about our natural terrestrial environments. This information must be synthesized and codified and intruded into management planes for particular environments. The forester is essentially a manager of land, and in the urban-rural interface a manager of space. His education ensures a strong management bias combined with an understanding of the ecological basis of production, and he is thus qualified, and is frequently in a position, both to make this synthesis and codification and to apply the results of research over large areas of land and space. It will be seen that arboriculture is but a part of the overall task facing the forester as he extends his activities closer to the needs of the urban community.

Environmental and urban forestry are vital to the future health of our country; only through extensive education programmes and the involvement of local communities can we hope to arrest the damage already done and establish new forests and woodlands for the enrichment of future generations.





# The Age of Uncertainty

by Ivan Tolstoy

**The greater the complexity of the problem to be solved the greater the fallibility of long term prediction. Why then do today's technologists assume that the consequences of their actions on future generations can all be determined?**

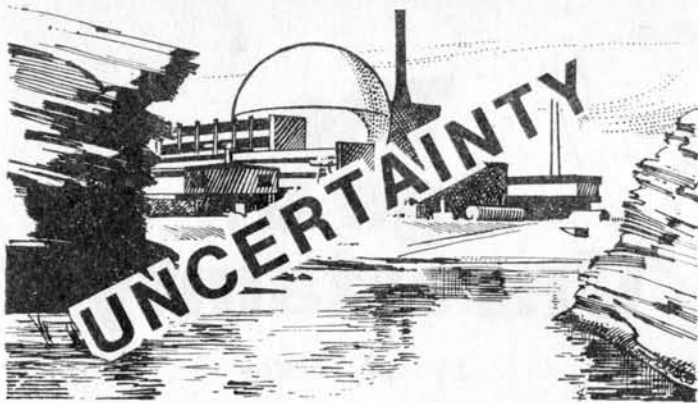
Consider the swell that breaks upon the shore. As the waves first come to shoaling water, they are long-crested, regular and rhythmic; it is not difficult, by words and mathematics, to describe this kind of wave. As the water shoals and the wave advances, the crest sharpens, the front steepens into a watery wall, becomes unstable and starts to curl over, falling forward in a graceful arch. Up to this point the mathematician, armed perhaps with a computer, can still describe the wave, and even predict its evolving form. But then it crashes in a seething roiling mass of foam; at this stage he is left far behind. For look closely at the foam: a profusion of air bubbles, whirlpools, pebbles and sand grains, undercurrents, ripples of all sizes . . . It would be foolish to attempt a full description of such disorganized and riotous behaviour; it is too chaotic and unpredictable.

Until recently, scientists still believed in the reassuring, nineteenth century view of nature as predictable. Whereas Newton's and Laplace's clockwork determinism had been refuted on the atomic scale, it was still accepted in the macroscopic world of sense and engineering. A super-computer fed with sufficiently precise information could, it was thought, describe the future of oceans, continents and the weather. Yet the waves breaking on the beach suggest something different; they tell us, graphically and forcefully, that on this level also determinism may be suspect. And indeed, modern, sophisticated mathematical and computer studies imply that fluids like water and air often behave, ultimately, in unpredictable ways. This is one of the important insights of twentieth century science: it imposes limits on our ability to predict. There are boundaries to our power.

The weatherman is a good example. A token figure, of course — a team, actually, of men and women, computers and instruments — he functions like any other scientist. On the one hand, he has nature; on the other, a model. The model is, basically, a set of mathematical operations representing nature's laws, operations carried out by some of the largest and fastest computers in the world. The weatherman feeds

to the computer all the observations pertaining to the present — a detailed weather map, really, with temperatures, pressures, humidities, wind speeds — a gargantuan mass of numbers. The computer manipulates and macerates this data for a while, then spews out its predictions for tomorrow's, or next week's, weather. There are two basic limitations in such forecasts.

The first is fairly obvious: if any of the numbers given to the computer are in error, or the data incomplete, the result will be inaccurate; somebody expecting sunshine will have rain, or vice-versa. An important point here is that in such computations, as in any mathematical calculation, errors, even minute ones, tend to grow. There is a simple physical model for this kind of *error-growth*. Imagine a billiard player caroming his shot: a small error in aim is magnified from bounce to bounce. Now let us imagine a table on which the ball keeps rolling, bouncing forever off the edges. The margin of error will become large enough eventually to include the whole table. A simple mathematical argument confirms this: all we can say about the distant future is that the ball will be somewhere on the table. The problem has become indeterministic: the phenomenon of error-growth allows us only to make a trivial prediction. A similar thing happens within a computer: a small error at the starting point in a complex succession of mathematical steps grows with the number of operations. Thus *all* our predictions are limited because all measurements, no matter how careful, have a margin of error. This limitation to our knowledge was understood by nineteenth century science. It was believed, however, that it could be circumvented, at least theoretically, by increasing the accuracy and number of one's measurements. Obviously, there had to be practical limitations to such improvements, if only economic ones. But these limitations were not seen as fundamental: if one were willing to spend more time and money one could, it seemed, increase indefinitely the accuracy of one's predictions. The error-growth limit was a *practical* one.



### The fallibility of long term predictions

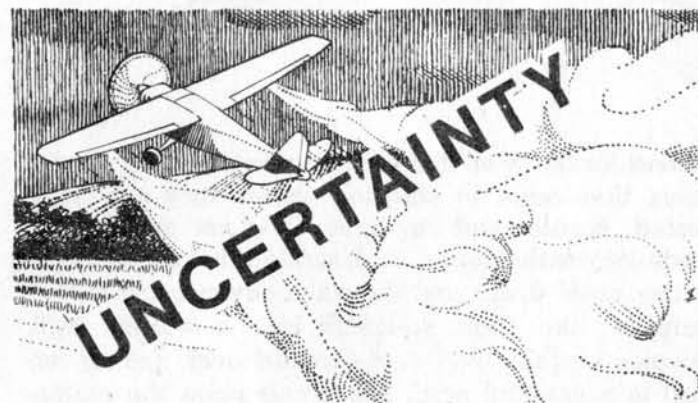
Until the 1960s it was widely held that this was the chief limitation on science's ability to predict the long-term behaviour of fluids, and, in particular, of atmospheric flows and the weather. More recently, a second factor has been recognized, a more *fundamental* one. It appears, simply, that the motion of fluids can be intrinsically unpredictable. As in the breaking wave, fluids may become *unstable*. In other words, very small factors can have large results, a tiny push can send things into a tailspin. This fundamental aspect of fluid flow was developed mathematically, in the weather-forecasting context, by a number of people in the 1960s and 1970s, notably by E.N. Lorenz of MIT. In physical terms, the message is simple: unexpected atmospheric instabilities may occur anywhere, at any time, to upset our predictions. A small cloud, somewhere, grows suddenly into a thunderhead; dust particles seed a rain-storm; and, it has been said, the flap of a seagull's wing could affect next week's weather. The last may, or may not be, an exaggeration; the spirit of the statement, nonetheless, is correct: beyond a certain point, chance rules.

Indeterminism in the large, in the macroscopic world, is not rare; yet it is not always easy to recognize. Take climatic change. The earth has a long history of climatic swings; periodically glaciers have invaded Europe, North America and parts of Africa. The time scales are variable — millions of years in ancient, geologic times, tens of thousands of years in the more recent past. Not so long ago, the musk ox and the woolly mammoth roamed the plains of France, Germany and Russia; during balmy, semi-tropical interglacials the hippopotamus and the lion inhabited the South of France. The recent picture, during the last million years, is one of climatic oscillations — cold periods followed by warm. Yet we don't know when the next glaciation is due. We don't have a predictive theory for these cycles. There are hypotheses, of course, but none are entirely satisfactory. We know, for instance, that astronomical factors play a role — small, periodic changes in the earth's orientation as it spins its way about the sun (the Milankovitch theory). We suspect, too, that the great eras of glaciation in the earth's more distant past correlate with long-term galactic effects: the solar system, it appears, sweeps periodically through the dust-laden arms of our galaxy; this, it is said, influences the sun's radiation, the earth's heat budget and thus the climate. These are some of the outside factors which have, possibly, triggered climatic changes. We don't know if there are

others; we have no reliable, quantitative theory. For all we know, the problem may not have a solution — not, that is, in traditional deterministic terms.

### Tampering with the weather

This casts a disturbing light on current worries about mankind's influence on climate. Thus the carbon dioxide debate: industry spews, yearly, millions of tons of carbon dioxide into the atmosphere, and global concentrations are increasing at an alarming rate — 13 per cent since the advent of the industrial revolution, perhaps 25 per cent by the beginning of the next century. Deforestation further aggravates the effect, since this decreases the planet's ability to cope with the extra load of carbon dioxide. Such changes are cause for worry, for they imply a disturbance of the balance of heat absorbed by the atmosphere and reradiated back



into space: the net effect, it is often claimed, will be to turn our planet into a vast greenhouse. Whether warming is taking place is not clear — the effect is yet, at best, a small one; but no one seriously denies its possibility. Many uncertainties surround the problem; there is even difficulty in accounting for the carbon dioxide produced by industry, to within a factor of two, or even three. It has been pointed out, also, that other effects, such as increasing atmospheric dust, could cancel or reverse the greenhouse effect. Palaeoclimatic evidence from the deep-sea cores suggests that we are — or have been, until recently — sliding into a new ice age . . . The fact is that no one is sure of the long-term prognosis. At present, there are no answers; perhaps there can be none. *One thing, however, is certain: we are perturbing a system whose stability we do not understand.* Nevertheless, there are still those who talk of tampering with the weather and, indeed, of modifying the climate here and there, to suit their purposes. Some years ago it transpired that the Pentagon was interested in climatic problems. In the early 1970s there was talk of the USA manipulating the climate, spraying large snow-covered arctic areas with coal dust, inundating low-lying flatlands with seawater or changing the nature of the vegetation so as to alter the balance of heat absorbed from the sun and re-radiated back into space. Doing this in the North American arctic, it was reasoned, might affect the climate in Russia or Siberia to their disadvantage. Such problems, one gathered, were already on the computers. One hasn't heard much about this in recent years. One trusts the computer's message was one of sterling uncertainty — sufficient to discourage even the brashest of our Strangeloves. One doesn't know



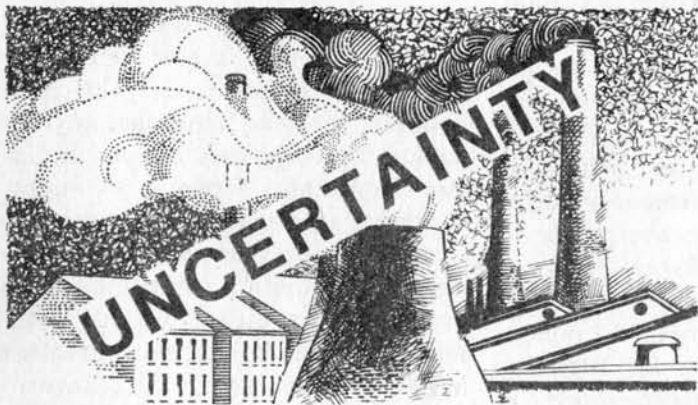
though: *their* workings, too, are unpredictable.

Indeterminism on this scale, radical uncertainties concerning the long-term behaviour of our planet's oceans, atmosphere and rocks, impinge upon society's workings in a myriad ways. Debates on pollution, resource depletion, population explosion, economic growth, nuclear power, even the planning of scientific research are all, in some measure, affected thereby. Consider the future of nuclear power. The complexities of this issue are endless: economic, ecological, environmental, social, political, geological problems, and many others, are involved — *all* embroil one, willy-nilly, in unquantifiable and at times indeterministic phenomena. The pollution problems involved in a nuclear economy alone are staggering; one must be concerned, into the decades and centuries ahead, with the diffusion of radioactive carcinogens in the atmosphere, the oceans and the solid earth itself.

By the beginning of next century, a full-blown world nuclear economy would be disposing of yearly quantities of radioactive wastes equivalent to hundreds of thousands of tons of pure radium. The practicalities of such disposal confront us directly with our inability to make long-term predictions concerning the earth's seismicity, underground water flows, ocean currents, or even the climate itself. Yet proponents of nuclear power maintain they will guarantee confinement of high-level radioactive wastes in geological formations on land or in the ocean bed for hundreds of thousands or even millions of years. This is a case of scientific illiteracy: the concept of indeterminism, it seems, has yet to percolate into industrial and technocratic circles.

#### Wrong turnings and technological errors

Civilization is faced today with conundrums for which



technical solutions may or may not be possible, depending upon the degree of indeterminism one must concede to the phenomena. That indeterminism is present is indisputable; but when does it significantly affect our power to act? In fairness to the technologists and technocrats whose work this is, efforts to face the problems raised by technology have not been lacking — a proliferation of risk-assessment schemes, pollution standards, industrial legislation, technology assessment committees, attest to this. Nevertheless, one suspects that awareness of indeterminism is only marginal. Expert pronouncements on a variety of matters, from stratospheric pollution to radioactive waste disposal, all too often suggest a strictly nineteenth century faith in the technological fix — i.e., adherence to the idea that, given money, time and

application, definite answers to all such problems must be forthcoming. Perhaps this is not entirely surprising. In basic theory, pure science is usually well ahead of technology and engineering — particularly when the message is an unwelcome one. And the perception of indeterminism as a large-scale, macroscopic phenomenon is surely unwelcome to technologists, economists, politicians, engineers, generals, statesmen — to all of society's decision-makers.

Insofar as the final decades of the twentieth century are concerned, the message of this kind of scientific indeterminism is clear: a growing number of seemingly technical issues cannot be decided on technical merit alone. This implies, inevitably, the politicalization of technology and, to some extent, of science too. Issues which, not so long ago, would have been regarded as only technical, to be resolved exclusively by scientists or engineers, may now turn upon values, not numbers.

In recent years, technocracy has supplied a variety of proof for its inability to cope predictively with the consequences of its decisions. Leaving aside the unsuccessful gropings of economic theory, there have simply been too many technical catastrophes, too many wrong turnings — thalidomide, Soweso, DDT, industrial explosions, collapsing dams, worldwide pollution . . . the list is endless. The public, aware of vast threats lurking in the background, is worried and uncertain. Less innocent than in the past, it is no longer convinced by the stage entrances of learned men, brandishing diplomas and assuring us that all is well, because *they* understand the problem, even if we do not. For every expert who tells us not to worry, you'll find one to contradict him, and the bewildered observer must ask himself how to find the truth. The sobering fact is that he won't get it from the experts — not, that is, solely from their expertise. Positions cannot be taken on purely technical grounds; logic takes us only so far: sooner or later, one must make a value judgment or an act of faith.

Indeterminism of principle, scientifically based uncertainty — this is a twentieth century insight. Appearing first on the atomic scale, in the microcosm, it has now spread to the everyday, macroscopic world of sense and engineering. Whilst science has endowed us with monstrous power, it is now, ironically, teaching us its restrictions, telling us that our abilities are circumscribed forever by uncertainties we do not control. Perhaps this will be our ultimate perception of the universe — a succession of insights each revealing the limitations of the ones that came before, a sort of philosophical Chinese box, enclosing ultimately some strange, and no doubt unexpected, pearl of wisdom.



# Emasculating the Road Lobby

John Tyme

**A plan to release transport policy from the stranglehold of the road lobby.**

"I am certainly not going to put up witnesses to talk about railways," said Counsel for the Department at the M65 Inquiry when I had asked what the plans were for the under-used rail line running beside the proposed motorway. Inevitably he didn't do so; inevitably the inspector recommended the scheme, and inevitably the Secretary of State authorised it. However, at the M40 Inquiry the editor of *Railway Gazette International* showed on behalf of objectors that, without involving any major investment, British Rail had ample capacity for moving whatever freight and people that particular motorway was designed to move. Early in 1976 British Rail North Eastern Region stated that for half a million pounds at 1976 prices British Rail could do all that the proposed M1/A1 Link around Leeds is designed to do at a cost of one hundred million at 1974 prices. At the Winchester M3 Inquiry British Rail made it clear that the Southampton-London line had ample spare capacity for the traffic claimed to justify the motorway.

There can be no doubt that, in respect of both Departmental and County Council roads, this has been the pattern for decades, and that thousands of millions of pounds have been invested in highway construction without there being any investigation whatever into the possibility that better economic bargains (perhaps in ratios of over 200:1 like the Leeds proposal) could be obtained by other means. Furthermore, all this has gone on, *is going on*, without a shred of Parliamentary approval for the expenditure involved or even an elementary understanding on its part of the economics of the investment involved. Mean-

while the country remains without a national transport policy of any kind ("By common consent we still lack a coherent national transport policy." Anthony Crosland, Secretary of State, *Transport Consultation Document*, HMSO 1976). The only 'policy' that can be discerned is the building of one "strategic network of roads" after another, the 'stabilisation' of rail investment and the consistent denial of funds to the nation's waterways.

How has all this come about? The answer is to be found in three factors: the all-pervading power of the Road Lobby; the structure and decision-making process within the Department of Transport (sic); and the capacity of the former to exploit the latter. It should first be clearly understood that this country does not have a department of transport, and to refer to it as such is unhelpful and confuses the public. What the country has is a *Department of Highways which possesses the power to make policy decisions on railways and waterways*. It is a Department in which direct executive and policy-making responsibility for highway construction and maintenance is not only the central, but the sole concern of 75 per cent of its senior staff, while the remaining 25 per cent are involved in a non-executive, non-policy making fashion with railways, waterways and coastal shipping. Following the nationalisation of railways and waterways, these two competitors to the Road Lobby were successfully isolated from the central planning and policy-making function of the Department, and executive and planning responsibility (for which all decisions were made subject to Departmental approval) was placed upon the separate and 'inde-

pendent' British Railways Board and British Waterways Board respectively.

The Road Lobby, having been largely responsible for creating this situation not unnaturally exploits it. Its principle 'modus operandi' (see flowchart 1) is through a key committee, the British National Committee of the Permanent International Association of Road Congresses (PIARC). The object of the Association is plain enough, it is to:

"Foster progress in the construction . . . use and economic development of roads throughout the world."

Chaired by the Permanent Secretary (the chief civil servant of the Department) the National Committee is made up of roughly one third of members of firms benefiting from the "use and economic development of roads throughout the world", and the remainder of highways civil servants of the Department. (See *Wheels Within Wheels*; Hamer; F.O.E.) Included in the former group is no less a person than Mr. R.H. Phillipson, Director of the British Road Federation. This Federation is the chief representative body of the Road Lobby and its members include the petro-chemical companies, the motor manufacturers, the motor trade, the road hauliers, the road construction companies, the suppliers of road building materials (tarmac, cement, concrete, aggregates), the suppliers of construction plant and machinery and the demolition companies. It is principally by means of this committee that the Lobby, the "greatest agglomeration of extra-governmental power on the face of the earth" to quote an ex-mayor of San Francisco, sits and operates securely within the heart of the Department. Its economists, statisticians and planners work hand-in-hand with Departmental personnel. Its 'Basic Road Statistics' are unquestioned by the Department. Its glossy publications describing "road requirements" for the regions become the basis of Departmental policy decisions.

In contrast, like remote and neglected satraps, the chairmen and staff of the Rail and Waterway



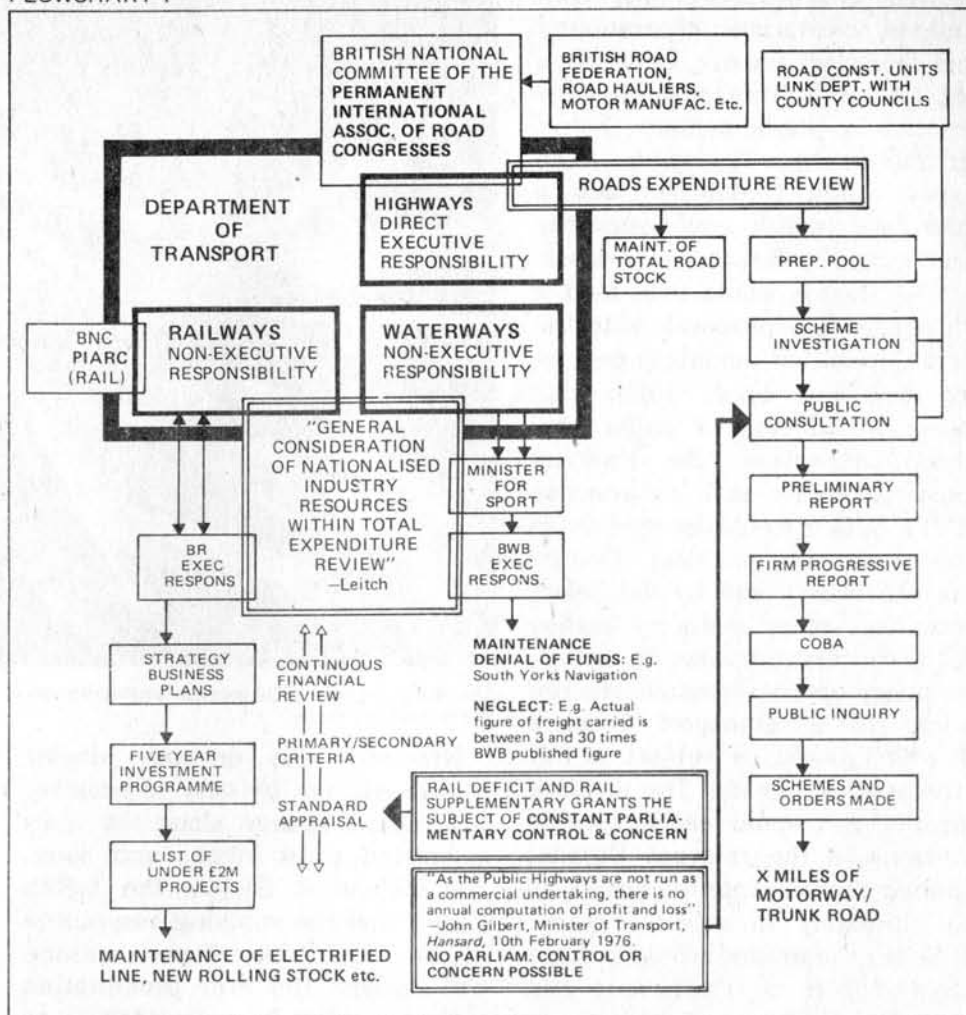
Boards remain effectively in total isolation. Separated from executive policy making, uncertain of funding, denied the capacity for long-term investment planning, required to operate to commercial cost-criteria which renders them politically vulnerable, and subject to executive and policy decisions coming from a Department dedicated to a competing mode of transport, they remain in a state of ignorance and impotence; so much so that, while Phillipson, together with the Permanent Secretary *creates* highway policy, the Chairman of British Rail, Sir Richard Marsh made the remarkable confession on BBC TV that, like the public, he had to read his newspapers to find out what was to happen to his railway (Panorama, March 1976).

In such a crowded island as ours, transport is far more important to our national well-being than has so far been recognised. It is a decisive factor in land-use policies, it decrees the shape of our cities, one way and another consumes a quarter of our available energy and has the profoundest effect upon our economic and social (and ultimately our political) existence. That it has been treated so casually for so long, while the Road Lobby and a group of highly placed civil servants have busily dismantled our transport system in the former's interest is astonishing and no small testament to the Lobby's long campaign.

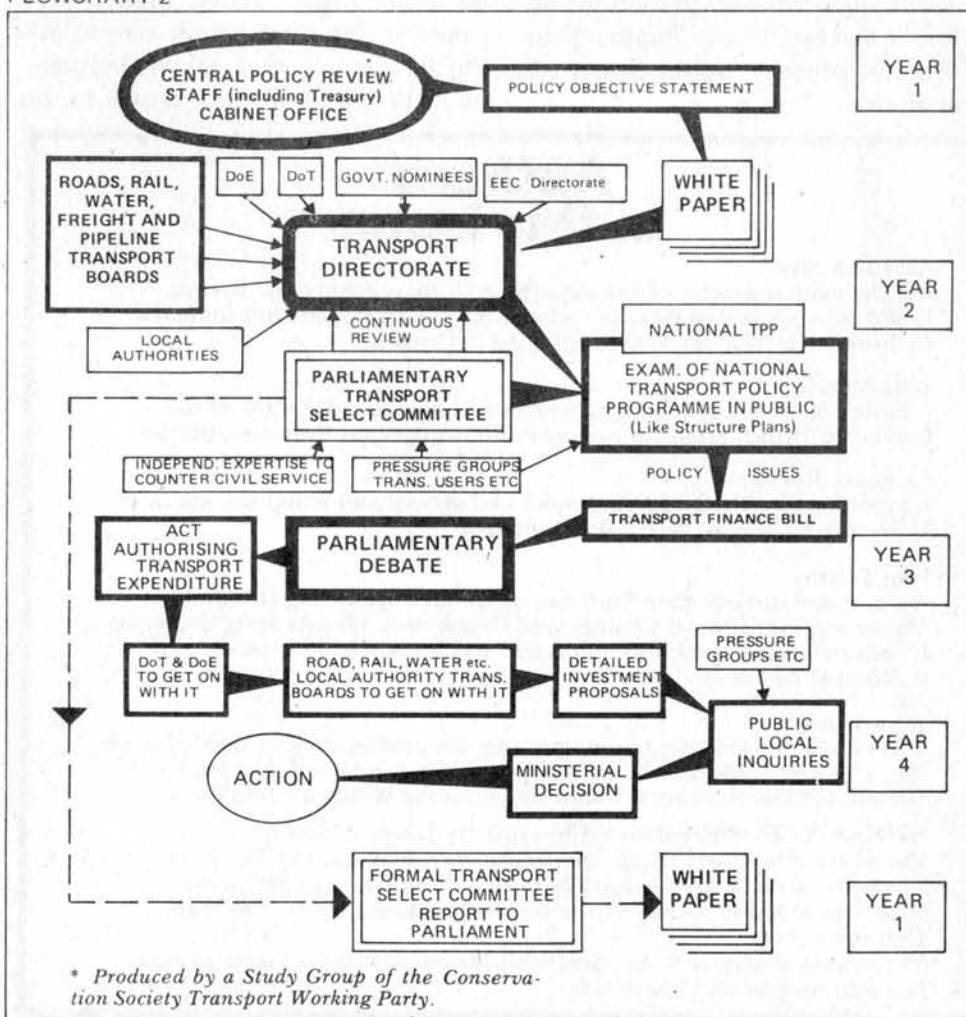
But the situation can be tolerated no longer. With every day that passes and as energy, materials and land-use problems grow increasingly acute, it becomes more imperative that the drift towards highway-created economic collapse be halted (for contrary to assiduously repeated Departmental claims, there is no evidence — as the Leitch Committee acknowledges — that highway construction leads to economic revival; in fact, evidence is accumulating that it either hastens or creates economic decline).

How can the necessary changes be brought about, and what are they? The *sine qua non* are two: the dismantling and reconstruction of the Department, and the elimination of the Road Lobby's powers therein. The second flowchart\* provides an alternative decision-making struc-

FLOWCHART 1



FLOWCHART 2



\* Produced by a Study Group of the Conservation Society Transport Working Party.

ture. There are three major constitutional innovations: separate and equal Transport Boards, including a Roads Board; a Transport Directorate; and a Parliamentary Select Committee on Transport. The process would commence with a White Paper which would state the broad lines of policy to the Directorate. The Boards would then feed it with appropriate proposals with the Select Committee holding a permanent watching brief. From this process would come a major procedural innovation, the National Transport Policy and Programme (NTPP), which would be subject to public examination (like County Structure Plans) both by the Select Committee, other statutory bodies and the concerned public. From this, firm policy proposals would emerge leading to a Transport Finance Bill which would be subject to full Parliamentary debate. The ensuing Transport Act would lead to specific directions to the relevant Boards, to public inquiries into the proposals and ultimately to action. Finally, the Select Committee would make a formal Report to Parliament and from the debate and expressed Government proposals therein would follow a further White Paper, after which the process would begin all over again.



The Road Lobby — 'The greatest agglomeration of extra-governmental power on the face of the earth.'

Naturally this or any similar reform will not be easy to achieve. But radical change along the lines suggested must come, and soon. For without it despite the Leitch Report and the soothing assurances of the 1977 White Paper, nothing will change: the ever proliferating highway networks will continue to be built under other names (for 'motorways' read 'trunk roads, all-purpose roads and major by-passes'); British Rail will prove to be

insufficiently re-equipped to take up the challenge of the late 1980s when road transport will be in decline; our waterways will remain totally neglected, and the long drift towards transportation and economic disaster will go unchecked.

## Authors in this issue

### Elizabeth May

was the main organizer of the opposition to spraying in Cape Breton Island. She has published many articles on the subject and has formed a coalition of groups opposed to spraying in Canada.

### John McKnight

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### John Tyme

well known for his activities in opposing the proliferation of motorways is also a staunch opponent of nuclear power. He conducted the case for the Society for Environmental Improvement at the Windscale Inquiry.

### APOLOGY: The Subsistence Allowance by James C. Scott.

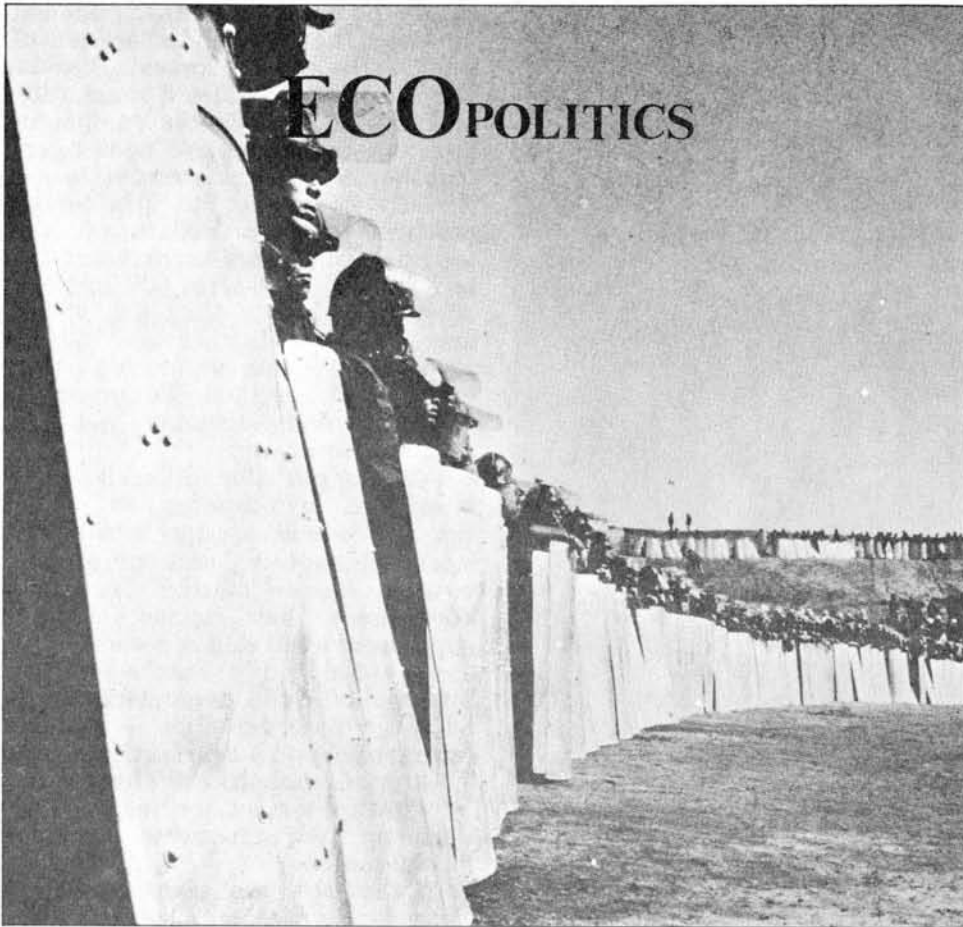
The above article which appeared in the May/June issue of *The New Ecologist* was an edited extract from the introduction of Mr. Scott's book *The Moral Economy of the Peasant* published in 1977 by Yale University Press.

The editors apologise to Mr. Scott and the publishers for failing to print this information with the article.

*By your works you may be known. Your triumphs in the mechanical arts are the obverse of your failure in all that calls for spiritual insight. Machines of every kind you can make and use to perfection; but you cannot build a house or write a poem . . . Ratiocination has taken the place of perception; and your whole life is an infinite syllogism from premises you have not anticipated or willed. Everywhere means; nowhere an end. Society is a huge engine and that engine itself out of gear. Such is the picture your civilization presents to my imagination.*

— Dickinson: Letters of John Chinaman





## Japan's Civil War

### The Implications of Narita

Demonstrations in Japan have never been the quiet affairs that they are in Britain. Crash helmets and molotov cocktails rather than banners and liberal good cheer are the order of the day, and running battles between protestors and the police are something of a ritual. Even so, many Japanese have been deeply disturbed by the recent riots at Narita International Airport. It is not, however, the demonstrators so much as the police who are the chief cause of public unease. The government's ruthless treatment of local farmers on whose land the airport is built has pricked the national conscience and cast grave doubts on Japan's "way of life". Narita has provided visible proof that the new values to which Japan is committed are a recipe for social disaster, and the airport has become a symbol for all Japan's current woes — from pollution to social unrest, to the power of big business and the wilful sacrifice of long-term interests to short-term gains. After thirty years of aggressive economic expansion, the Japanese are being forced to confront the reality of industrialism — and clearly they are finding it a rude awakening.

Narita was once the lushest farming area in Central Japan. Local

farmers enjoyed a considerable reputation for growing the best crops in the country, and they recall with pride that for years their ancestors supplied the Imperial Family with vegetables. Farmers know that agricultural land is Japan's most valuable resource and covering it with cement is nothing short of sacrilege. "What will Japan gain?" they ask. "Seventeen years ago, the country was producing nearly ninety per cent of its food. Today we are only seventy-five per cent self-sufficient. We don't need another large commercial complex of hotels and hangars, shopping centres and freeways. We need the farmland under the concrete."

As a site for an international airport, Narita could not be a worse choice. Regular fog and abnormally high winds are common to the area, and pilots from Japan Air Lines (JAL) have already complained that landing conditions are "extremely worrying". Inept planning has further aggravated the problem: the runway is some 750 metres short of its proposed length and landings and take-offs will have to be carried out at dangerously steep angles: and with no cross-wind runway the airport will have to be closed except

when wind conditions are ideal. There are no plans for centralizing traffic control, furthermore it will be operating within an area already congested with air traffic from the airport at Harada and from five others in close proximity to it. And to top it all, there is no connecting rail service to Tokyo (some sixty miles away), so passengers face a three to four hour car journey on congested roads — with the return taxi fare almost rivalling that of a Skytrain ticket from London to New York.

What angers objectors most are the ruthless tactics that the government has used to push this aeronautic disaster through to completion — and it is concern over this that has led them down the path from non-violent civil disobedience to outright confrontation and the espousal of the ideals of the alternative society. Early on in the campaign it became abundantly clear that reason was not a commodity valued highly by the authorities; they threw aside all objections however well founded, with the conviction of men possessed, and it was soon evident that they would tolerate no opposition to their plans. From the moment the decision to build the airport was taken some twelve years ago, the government adopted an outrightly aggressive position. Ignoring one of Japan's most time-honoured customs — decision by consensus — they announced where the airport would be built without any consultation with the local farmers whose land would be taken. Those who refused to sell had their farms confiscated by airport officials backed by a posse of riot police. Faced with such intransigence, the local farmers began to see themselves in a Kafkaesque situation in which open warfare was the only course open to them. "We have come to realise that whatever laws there are in this so-called democratic country they are there for the convenience of the authorities; there are none at all that can protect us from the pressures they put on us," comments Ishii Takeshi, a member of the Opposition League. Other farmers share his bitterness: their deep attachment to the land is not based on sentimental whimsey — for them it is a way of life, backed by traditions and never voluntarily abandoned. "I will not hand over to the Corporation, farmland which has come down to me through four generations," says Ishige Tsunakichi from Tenjin, one of the first hamlets to be threatened. "I am determined to demolish the airport — no matter what means they use." Other residents of the hamlet show themselves equally committed: "Victory is a privilege given only to those who struggle," says one of



Farmers vs Police, a confrontation of values.

them. "I will never forgive the government and the Corporation who drove us out as if we were worms."

That description has a certain wry piquancy: when the bulldozers moved in to carve out the runway, the demonstrators buried themselves in tunnels in its path; earth-movers simply dug them out. Other non-violent tactics of the Opposition League were met with similar brutality. Protestors chained themselves to the tops of trees only to have water cannon turned on them and the trees felled beneath them. Those who were injured were unceremoniously carried off and questioned by police before any medical treatment was given them. When supporters converged on Narita from all over Japan to build a tent city, the police moved in and broke it

up. The last straw came when the authorities demolished a steel broadcasting tower that had been built by the demonstrators, without going through any of the procedures of a legal hearing. "The State has violated the law, so we will use any means necessary," said the Opposition League in a statement. From then on, the violence has escalated, with the demonstrators waging a major guerrilla war. Commuter trains waiting to link Tokyo with the airport have been set alight: houses of airport supporters have been razed to the ground; navigational equipment at Hiroshima airport has been destroyed; trains carrying aviation fuel have been sabotaged; and last March the conning tower at Narita was smashed to pieces in a thirty minute orgy of violence that cost £18 million to repair. A fortnight

before the airport was finally opened in May, the 68-year-old leader of the anti-airport forces, Issaku Tomuru, vosed before a mass rally in Tokyo to escalate the campaign, and warned prospective passengers that they face the danger of violence. Already there is the frightening prospect that the Red Army, the terrorist group that carried out the Lod Airport Massacre, will join the opposition, and if they do, it can only be a question of time before aeroplanes, either in the air or on the ground, become the target of saboteurs, and passengers get shot up in the terminals.

For their part the authorities have responded by sending in 13000 riot police and enough armour to start a minor war, and the area is virtually under martial law. The government has rushed through parliament a bill that allows them to destroy the 'unity huts' — small forts built by the demonstrators as bases for their activities — without having to obtain a court order. Many say the bill violates the constitution by allowing the authorities to crack down on their opponents for ideological reasons.

If the activists keep up their campaign, it seems unlikely that the government will be able to keep Narita open for long. For the last six years they have been spending nearly half a million dollars a day to maintain the idle airport, and now that it is open they are faced with the prospect of spending tens of thousands on airport defence. Yet whilst the closure of the airport would be a victory for the opponents, there is a danger that in the mêlées with the police they have begun to lose sight of their cause. Ultra left-wing groups have already infiltrated the anti-airport movement and are capitalising on the fighting to further their dubious political ends. On the heels of the Narita riots has come turmoil in a small town 125 miles from Tokyo when a hearing over a proposed nuclear power plant, ended in a battle between riot police and demonstrators. If the Red Army join the opponents of nuclear power (and there seems every likelihood that this will happen) the prospects for Japan being held to ransom by guerrillas with a home-made atom bomb are real. Protestors at Narita must ask themselves whether violence on such a scale — it is only a step from their present tactics to full scale hostilities — is the right way to achieve the decentralised ecological society they want.

*Nicholas Hildyard*

NOTE: Further information and literature on the Narita Anti-Airport League is available from the Environmental Book Centre, 1325 Kamoi-cho, Midori-ku, Yokohama 226, Japan. The *Ecologist* would like to thank them for supplying the photographs.



BELGIUM

## Monopoly Breakers

For some 150 years, political life in Belgium has been dominated by three traditional parties: the Socialists, the Christian Democrats and the Liberals. In March 1977, this monopoly was shattered when Ecological candidates were put up for parliamentary elections in eight constituencies in Walonie and one in Flanders. "The initiative", said Pierre Lannoye, the leading candidate for Wallonie-Ecologie, "came from Amis de la Terre, (Belgian FOE) formed in February 1976 from the members of several organisations that now no longer exist."

Significant results came quickly: in Namur and Wavre, ecologists obtained 3.5 per cent of the vote. The Left condemned them for distracting 'the workers from their true economic and political interests.' The Right dismissed them as 'idle dreamers'.

It soon becomes apparent that the ecological candidates who stood in the elections covered a broad spectrum of political views. On their home ground, at Charleroi, Mons and Namur, the picture is relatively clear since the movement has had time to develop a consistent political position. Not so in Brussels. There the movement embraces three distinct factions: an ecological christian group, the radical Left, and professional dieticians, whose motives are somewhat suspect. By comparison with other areas, Brussels-Ecologie was less successful — only obtaining one per cent of the vote. One possible reason for this lies in their failure to capitalise on the interest of local neighbourhood councils, of which there are some 150 in Brussels alone, most of them sympathetic to the aims of the Ecologists. Even at Uccle, just south of Brussels, where their main effort was concentrated, Brussels-Ecologie did not contact these councils — and only obtained 1.8 per cent of the vote. Surprisingly, the twenty-five councils say that no contact has been made since the election either. Mr. Misal, one of the organisers of Brussels-Ecologie, recognises that it was a tactical error, but explained that sheer lack of time made contact impossible.

Although the movement would undoubtedly profit from greater unification, ideological differences are likely to rule this out. Amis de la Terre, for instance, have little

contact with Inter-Environment, a confederation of conservation associations, although they have co-operated on occasion to organise anti-nuclear demonstrations, notably at Huys in March 1977 and Brussels. Paul Lannoye explains: 'In founding Amis de la Terre, the aim was to produce a group that relates ecology with politics. That's how we differ from Inter-Environment which works for environmental conservation in a framework that can very easily be grafted on to a consumer society'. There is a move, by Brussels-Ecologie, to set up 'Les Etats Generaux de L'Ecologie', which if successful could be the prelude to a more unified movement. Just how it will fare in the present climate remains to be seen.

Arezki Mokrane

GERMANY

## Saxon Success

The success of the 'Green List' candidates contesting the State elections in Hamburg and Lower Saxony has astounded political commentators in Germany. Die Welt, the conservative daily, commented that the election results herald "a crisis of the established party system", and, in London, The Times lyrically dubbed the ecologists as a "new star which has arisen in the political sky". Even the leaders of the established parties were forced to concede that the Green List has achieved more than just a respectable result. Although the ecologists failed to reach the five per cent of the vote that they needed to be represented in parliament, they have indirectly affected the fate of the federal government: the outcome

of the Lower Saxony election strengthened the anti-government majority in the Upper House and Chancellor Schmidt admits that this will make legislating even more difficult than it has been in the last year. Significantly, a poll commissioned shortly after the elections revealed that the ecologists took their votes from all three major parties.

BRITAIN

## May Polls

Britain's Ecology Party fought seventeen seats at the district council elections in May. It achieved its best result in Bath, which it contested for the first time, gaining 16 per cent of the votes in both the wards it fought. In London, it beat the Labour Party into third place in St. Johns Wood, and the Liberal Party into bottom place in Waltham Forest. In seven wards throughout the country, the ecologists finished strongly ahead of the National Front, which many pundits had expected to make substantial electoral gains. Overall, Eco gained an average of 8 per cent of the votes polled.

"At first sight these results might seem disappointing," says Howard Hoptrough, editor of the party's newsletter, "but when one considers that many of the wards were fought for the first time; that many of our candidates had not been involved in politics before, let alone stood for election; and that in many cases the campaign — through lack of time and resources — consisted only of leafletting, then I think we can be considered to have done reasonably well."

Eco intend to field at least five candidates at the next Election.

# ecology party

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# Attitudes to Civil Disobedience

Despite talk of an overwhelming defeat it is enormously encouraging that as many as eighty MPs voted to delay THORP at the final parliamentary debate on Windscale. How many would have voted that way a few years ago? A mere handful. Nevertheless Wedgwood Benn's masterly wind-up speech in the House of Commons debate should be giving environmentalists a lot more to worry about. Of all MPs Benn is the most clued-up about nuclear power. He has heard the pros and cons, from practically everyone concerned, since the issue really came to public attention with the notice about BNFL importing Japanese nuclear waste. But Benn is an effective tactician. In the debate he first enthusiastically praised environmentalists for their efforts to bring about a better environment and for having prevailed upon Peter Shore to hold a public inquiry on THORP. Then, justice to the environmental cause having been seen to be done, he went on to give reasons why THORP was necessary and hammered out all the old arguments about Britain needing a lot more energy in the years to come, and having to have nuclear power as an essential ingredient of any future energy policy. Hearing Benn talk it was as if people like Peter Chapman and Gerald Leach had never existed, as if *Limits to Growth* and the *Workshop on Alternative Energy Strategies* were pieces of fairyland fiction rather than the deeply considered analyses of experts in the energy field. How could Benn wholly neglect to mention the staggering savings in energy which could be achieved by the simple strategies outlined by Leach and his co-workers? How could he fail even to mention the hazards of embarking on a concerted nuclear power programme involving reprocessing plants, the importing of other people's nuclear rubbish and the fast breeder reactor? Obviously Benn

and his colleague Peter Shore found it more judicious to follow the path which Parker had blazed for them in his highly prejudiced report.

Whatever Benn's motives it is a bitter pill for environmentalists that they are failing to get through on major issues. Indeed they seem to be talking themselves blue in the face at no small cost only to be brushed aside when the big decisions are made. Meanwhile time rushes on. So what should environmentalists do? Should we keep on going over the same polite dialogue, in the hope that bit by bit the message will get through before too many more environmental monstrosities have reared their heads? or become environmental revolutionaries set upon overthrowing the establishment by the tactics of the Red Brigades? Or choose the prickly middle road of maintaining some sort of dialogue, while using non-violent civil disobedience to halt the otherwise inexorable development of nuclear power?

The *Ecologist's* call for non-violent civil disobedience in the aftermath



John Davoll, Director of the Conservation Society, rules out civil disobedience which he sees as a threat to democracy.

of Parker's report (see *Reprocessing the Truth*, 15p post free from *The Ecologist*) touched a raw nerve in the environmental movement. Tom Burke, Director of Friends of the Earth, betrayed his unease when he advised the Ecology Party not to allow Teddy Goldsmith to speak at the anti-Windscale demonstration in Trafalgar Square, lest he reiterate the call. In the event, however, Arthur Scargill, who had on previous occasions referred to the possibility of picketing trains carrying nuclear waste, and Petra Kelly, both spoke from the platform in support of non-violent civil disobedience. Nor was FoE the only environmental body embarrassed by the civil disobedience issue. At a press conference to launch *Reprocessing the Truth*, various supporters of the Windscale Appeal, which represented a group of objectors at the Inquiry, gave their support to the call for non-violent civil disobedience, thus greatly angering the Director of the Conservation Society, John Davoll, who feared that through its association with the Windscale Appeal, his Society would seem to condone the call.

Davoll, who emphasised that he was speaking personally and not stating the considered policy of the Society (cf Dr. Taitz, *Chairman of The Conservation Society, in Letters to the Editor*) is undoubtedly aware of the paradoxes of the situation. He believes that the industrialised world has very little time left to sort itself out before it is overwhelmed by resource limitations and the socio-economic realities of scarcity. He also realises that in Britain environmental movements are still very much on the fringe, with even less chance than the Liberals of making an impact through the conventional parliamentary process. Yet, for all that, he considers that any possible gain from civil disobedience would be outweighed by its effects in undermining our democratic system with its in-built freedoms of opinion and action. He therefore rejects non-violent civil disobedience on the grounds that it is a threat to democracy. He also rejects it on practical grounds because he does not believe it can be effective unless it



escalates into violence — at which point it would be crushed by the state.

For all his pessimism that significant changes can be achieved before serious trouble has developed, Davoll himself has chosen the conventional way of trying to bring about change. He wants the six thousand members of the Conservation Society to lobby MPs and influence public and official opinion generally on the need for quite radical social and economic change as the only way of finally resolving our problems. In this way he hopes to increase the chances that when circumstances make change inevitable, it will be in a constructive direction. He does not see the question of nuclear power as necessarily a moral issue, and hence one we should go to war over. "I respect those who are prepared to die, even in obscurity, because they are fighting an evil like Nazism, but with regard to nuclear power, many of its supporters are sincere, intelligent people, such as Andrei Sakharov. The issues are grey, not black and white, and we must appreciate that the interrelation between social and ecological stability is so delicate that reasonable men can hold different views."

Davoll believes that nuclear power cannot make more than a trivial contribution to the world's energy supply during the next two or three decades in which critical conflicts are likely over resources of energy and materials. Nevertheless he agrees that it is a potent symbol both for environmentalists opposing it and for growth-merchants committed to its use. "Nuclear power," he says, "is a paradigm of the expanding society. Our aim is to have a different society which uses energy differently."

Czech Conroy is energy representative of FoE and together with Walt Patterson has been travelling indefatigably up and down the country attending meetings and contributing to the Windscale Public Inquiry. He is less emphatic than John Davoll about the absolute importance of keeping within the law, but believes that any transgressions at this stage would be premature. He admits there are problems: to be effective pressure groups like FoE must operate con-



Czech Conroy, Energy Spokesman for Friends of the Earth; "Civil disobedience at this stage would be premature".

stitutionally within the existing system which means that when such groups are successful or half successful they will still be perpetuating the ills that they are fighting. It's a compromise Conroy and his colleagues at FoE feel constrained to accept.

"We have a long-standing commitment to fighting environmental issues by democratic means. If you can effectively campaign within the law then that is better than using illegal means. Such means should only be used when it is clear that the authorities are acting irresponsibly in relation to the law or to the issues. As for setting out to occupy Torness to prevent the SSEB building a nuclear power station there I do not think that the state of play on nuclear issues in Britain justifies such an action. If the government here were acting like the French government then the situation would be different and FoE might well be using civil disobedience."

Conroy considers that although some people may have less faith in FoE as an effective organisation since they lost the battle over THORP, there are good reasons for not losing heart; first, because of the sharp differences of opinion between the US, Canada and Britain over the desirability of reprocessing; and second because of the general movement against reprocessing throughout the world. FoE does not regard parliamentary approval of THORP as the end of the war, but the loss of one significant battle.

While getting a very good press for its performance during the Inquiry (and some words of praise from Parker himself), FoE came under criticism from other environmental groups because of its ambivalent position over nuclear power. At one point it seemed from Patterson's answers that he was not against thermal nuclear power stations, but just against THORP and reprocessing. Conroy has since set the record straight by emphasising that FoE's position towards nuclear power is unequivocal.

"We oppose the construction of any further nuclear power stations in Britain, nevertheless we don't think the pollution/proliferation aspects of thermal power stations are anything like as great as those of reprocessing and fast breeder reactors. My main objection to thermal reactors is that they are not necessary, nor are they the best energy option for the UK. Any further investment in nuclear power means less investment in cheaper and long term preferable energy strategies. I see more centralised electric systems as an obstacle to soft energy alternatives".

FoE has made no decision about the FBR inquiry; it is waiting to see what the government comes up with. Nevertheless, as with the Windscale Inquiry, it will probably go it alone. "We don't want FoE to become part of a formal coalition," says Conroy, "A diversity of views and approaches in the environmental movement is part of its strength. We have always worked informally with other environmental organisations such as SCRAM, the Conservation Society and the CPRE." Conroy was adamant that participation in a public inquiry meant that you had to accept its rules.

"If you are not prepared to accept the constraints you shouldn't be using that approach. Some objectors were in two minds whether or not they should be giving evidence. We fought at the Inquiry because politically it was the best thing to do. BNFL was put in a spot and had to release information. Also the issues were publicised — and that was useful. Not that we thought that argument would prevail. There is a tendency to look at the Inquiry in the narrow context of winning or losing, and to forget the impact of making

## REPORTS *cont.*

people aware that there is an issue and a platform on which to present views."

Conroy regards non-violent civil disobedience as inappropriate unless it becomes manifestly clear that the government is behaving irresponsibly, at which time, he assumes, public opinion could be sufficiently aroused to make a mass protest. However it is arguable that the Government, in its backing of Windscale; in the building of two more AGRs; in its intention to support an FBR programme; is already failing to provide a responsible policy, or to take note of well-argued analyses by Leach, Peter Chapman and others.

There is plenty of evidence that both BNFL and the Government believe that they can get away with practically everything they want with regard to nuclear power. Benn made his decision on the AGRs before the Parker report was published, just as BNFL did when they set out to woo Brazil for an order to build a 'Hex' plant, so that it

could enrich its own uranium. Is there no hint of nuclear proliferation in that? Yet the Government remained silent even though they knew that President Carter opposed Germany's plans to provide Brazil with nuclear hardware.

Interviewed recently by the BBC, Jacques Cousteau advocated law-breaking in the battle against nuclear power. He recounted how the French Friends of the Earth had stolen government contingency plans from which they learned that atomic workers would be shot if they tried to escape from a nuclear site after it had suffered a serious accident unleashing a pot-pourri of hideous radioactive waste. "When one side lays down such rules," Cousteau commented, "the other is perfectly justified in resorting to extreme action."

It is to be hoped that Britain has no such contingency plans. But what if it has? Are we to wait until we find out? Conroy believes that Britons are not yet ready for non-violent civil disobedience in the anti-nuclear cause. Moreover both he and Davoll are anxious lest any such action have a political backlash in evoking

sympathy for the Government rather than the protestors. That might happen, but it is undeniably true that the fast growing success of the Green Ecology parties in Germany and France cannot be put down to their gentle tactics in confrontation with the authorities. Their followers, increasing in numbers all the time, have resorted to civil disobedience, and the fact that they have shown some muscle and suffered some martyrs, has only helped to swell their popularity. Let us by all means keep the dialogue going; let us try in whatever way we can to change the minds of MPs and to alert the public. But we must, at the same time, guard against complacency and the danger of being beguiled by outward displays of the democratic process; we must not assume that we can either know what Government intends or influence its actions in any significant way. We called for non-violent civil disobedience because we believe that the milder traditional forms of protest have no power to alter the policies to which our present rulers are committed.

Peter Bunyard

## Witch Doctors get the Green Light

Following a decision by the World Health Organisation (WHO) to broaden its definition of 'health care systems', traditional African witch doctors now have official backing for their activities. In Swaziland they are to be given the same professional status as Western trained doctors; in Zambia it has been suggested that they should be invited to work alongside junior doctors in hospitals; and in Nigeria plans are afoot to build a school of traditional medicine and a teaching hospital in the capital, Lagos.

One reason behind WHO's decision, which was carried through despite the opposition of Western doctors, is concern at the rate at which expensively trained doctors are emigrating from the Third World to the West. Specialists at WHO consider, for instance, that it would take the United States, Canada and Britain

seven years to replace their immigrant doctors with home-trained staff — which gives an idea of the extent of the problem. "The provision of health care for all by the end of the century," comments Dr. Halfdan Mahler, the Director-General of WHO, "can hardly be achieved without harnessing the resources of traditional healers, midwives and herbalists who still practise in virtually every country in the world." Indeed a report recently submitted to WHO argues that traditional healers form the essential core of primary health workers for nine-tenths of the rural population of the Third World and are usually consulted in preference to other health workers.

Dr. R. F. Bannerman, Secretary of WHO's working party on traditional medicine, says that multi-disciplinary research into traditional medicine will be encouraged and special

attention paid to identifying effective remedies derived from plants, animal products and minerals. Investigations will also be carried out into the psycho-social and anthropological aspects of traditional medicine, as well as acupuncture and other healing methods. "Traditional healers, and some modern physicians, depend to a large extent on herbs and medicinal plants for treatment," Dr. Bannerman explains, "and there are clear indications of a major breakthrough in therapeutics and health care delivery. Recently, we have received reliable information that herbs are being used in China, tropical Africa and Central America for the control of *diabetes mellitus*."

Many of our own 'wonder drugs' (invariably billed by the scientific world as 'new discoveries') have been used by primitive peoples for aeons. The *Codes of Hammurabi*, written 3700 years ago by Egyptian physicians, for example, shows clearly that they were familiar with the antibiotic properties of certain fungi. Equally, the medicinal properties of the snake root, *Rauwolfia*



(used as a hypotensive agent by modern doctors), were described in the Indian Vedas nearly 3500 years ago. Drugs such as coca, opium, curare, sarsaparilla and quinine are other examples of herbs we have adopted from primitive cultures with considerable success. Indeed, primitive man's knowledge of the medicinal properties of the natural world are staggering. Claude Levi-Strauss, the French anthropologist, reports that South American Indians, for example, have natural drugs that they use as emetics and purgatives; as remedies against dysentery and other gastric problems; as specific antidotes for snake bites; as anaesthetics and as contraceptives. They also have medicines to stop bleeding; to cure eye pains; to cure hernia, pulmonary infections, blisters, scurvy and haemorrhoids; and to heal wounds.

Despite this, folk remedies have consistently been dismissed by the medical establishment. Such is the mystique of the test-tube that many Western scientists are unable to accept that natural drugs can be as efficacious as man-made ones. "Chemists and pharmacologists in the West fell into the error of supposing that because they had learned the trick of synthesizing certain substances, they were better chemists than Mother Nature," writes Professor Robert DeRopp in his book *Drugs and the Mind*. "Needless to say, the more enlightened members of these professions have avoided so crude an error, realising that the humblest bacterium can synthesize, in the course of its brief existence, more organic compounds than can all the world's chemists combined."

Equally important is the role that witch doctors play in maintaining social stability — a role that has been much undermined since colonial times. Often portrayed as an evil charlatan playing on the superstitions of his fellows, the witch doctor has been the object of fear and suspicion, his rituals and spells dismissed by Europeans as crude mumbo-jumbo. Recent anthropological research, however, renders such ethnocentric scepticism out of date. Not only is the witch doctor revealed as an excellent doctor, but as an extremely competent psychiatrist and social worker to boot.



Photo: Iven Devore

We have much to learn from Witch doctors.

Take for instance the 'cupping cure' practised by shamans amongst the Ndembu of Zambia. Victor Turner, of Chicago University, describes one incident he witnessed in which the patient was suffering not only from palpitations, severe pains in the back and extreme lethargy, but was also convinced that the other villagers were shunning him and consequently had withdrawn totally from social life. The cure prescribed by the shaman consisted of drawing blood from the patient and seeming to extract a tooth from his back. Before he 'operates', however, the shaman finds out everything he can about life in the village, conducting seances in which everybody is encouraged to discuss their grievances against the patient, whilst he airs his grudges against them. By the time the ritual begins, the whole village has become involved in analysing the man's illness and in trying to cure him. When the tooth is finally extracted, their relief is evident as they congratulate the patient on his recovery and themselves for their part in it. This ritual worked at the psychosomatic level for the sick man; it also had psychological and sociological consequences for the villagers, changing their attitudes, so that the pattern of status in the community was formally altered.\*

Witch doctors differ most radically from their Western counterparts in that activities are firmly rooted in a social and ecological approach to health. The Zulus, for example, believe that there is a special relationship between man and his environment which is disrupted when people move. "They believe that the people in any particular region are adjusted to their surroundings," explains Harriet Ngubana,\*\* "but should they go to a completely different region they would become ill." Likewise foreigners moving into an area bring new diseases that spell disaster to the indigenous people. Their theories are substantiated by examples from all round the world: a pathogen which is only a nuisance to people of one area can be fatal to those who have had no evolutionary experience of it — witness the virtual extermination of certain Amerindian tribes by the common cold.

The role of the witch doctor is to restore the balance between man and his environment. He conceives of health as consisting of balance and harmony. Clearly modern medicine has much to learn from traditional healers.

Jimoh Omo Fadaka

For further discussion of this subject see:

\* *Purity and Danger*. Mary Douglas, Routledge Kegan Paul 1966.

\*\* *Body and Mind in Zulu Medicine*. Harriet Ngubana, Academic Press 1977.

## Eco-Guerrillas

A new guerrilla group has emerged on the West coast of America. Calling itself Environmental Life Force (ELF), it has declared "war on all who persist in the manufacture and application of pesticides and similar poisons."

ELF first appeared in May last year when it made an abortive attempt to blow up crop dusters near Santa Cruz, California. Then in an August communiqué (signed by the Rachel Carson Ecommando Unit of ELF), it claimed responsibility for a bombing at the Publishers Paper Company in Oregon City.

The bombing was in response to the company's aerial spraying with a chemical defoliant (Torden) of demonstrators protesting against the use of a dangerous herbicide on land owned by the firm. Twelve people, part of a group occupying the land, have been taken ill since the spraying.

In the communiqué, ELF demanded that the company hire five doctors (acceptable to those sprayed) to treat the protesters and that the doctors "be willing to testify in court with regard to their findings." ELF has said that it will continue with its armed actions.

*Open Road, Autumn 1977*

## David and Goliath

For years Dr. Pietro Capurro has been pinning the blame for the extremely high cancer rate in the small town of Elk Valley, Maryland, on the operations of the Galaxy Chemical Company. The owner of Galaxy, Paul Mraz, brought a two and a half million dollar law suit against Dr. Capurro for having slandered and defamed his company. Following a two week trial, the Circuit Court jury has rejected Mraz's claim.

The Galaxy plant distills chemical wastes to recover chemicals which are then resold. Capurro made his own checks of chemicals present in the water and the air. He found toluene, benzene, carbon tetrachloride and ketone. Taking blood samples from local residents, Capurro noted abnormally high levels of many of these same chemicals. In his work as a pathologist at a nearby hospital, he became aware of the high incidence of lymphatic cancer in Elk Valley; during a period of seven years, four of the local residents died of lymphomas, many times the expected death rate. Taking house-by-house readings of chemical concentrations, he found that the chemicals moved

along certain pathways, and that those who had died of cancer generally lived in one of these pathways. Although he sent his findings to the Maryland Department of Health, they were ignored. Ultimately, the Health Department did send a specialist in environmental medicine, but her findings, which agreed with those of Dr. Capurro, were also ignored. It was not until she had taken the story to a local newspaper that the Health Department began to take the studies seriously. Subsequently it was revealed that the residents of Little Elk Valley were dying of lymphatic cancer at two times the normal rate.

*Environment, Jan/Feb 1978*

## Nuclear Power Uneconomic

The House of Representatives committee on government affairs has published a damning indictment of claims that nuclear power is a cheap form of energy, arguing this is only true if hidden costs, such as federal subsidies and waste management, are ignored.

The report which was made public last week is based on hearings held last autumn by the committee's sub-committees on the environment, energy and natural resources, and states unequivocally: "Contrary to widespread belief, nuclear power is no longer a source of cheap energy."

It continues: "In fact, when the still unknown costs of radioactive waste and spent nuclear fuel management, decommissioning and perpetual care are finally included in the rate base, nuclear power may prove to be much more expensive than conventional energy sources such as coal." The report adds that nuclear energy may not even be economically competitive with safe, renewable energy alternatives.

Among the factors leading to increased estimates of the costs of nuclear power, the report lists the following:

- \* construction costs for a nuclear plant are increasing more rapidly than the general rate of inflation, or ten times faster than those for an oil refinery;
- \* nuclear plants are exceeding their budgets by as much as 267 per cent;
- \* the cost of uranium has risen from seven dollars per pound in 1973 to more than forty dollars per pound today;
- \* and unknown costs, such as those associated with the "back end" of the fuel cycle, have not yet been determined,

and are not incorporated in the price of electricity.

The report concentrates in particular on the difficulties of predicting the costs of storing radioactive wastes, pointing out that Department of Energy estimates for disposing of military wastes alone have ranged from two billion dollars to twenty billion. Similar uncertainty exists about the costs of decommissioning power plants.

*Nature, Vol. 273, 11 May 1978*

## Boom Goes Bust

Only a decade ago it seemed to be on the crest of a wave: today nuclear power in America is on its way out. Utilities were buying nuclear power plants at a heady pace in the early 1970s, but then they ran into all sorts of problems — not least disruptive ecologists and a sudden dip in the growth of electricity demand. Costs meanwhile have escalated and government policy towards nuclear power keeps shifting. As a result reactor orders have plummeted — from 36 in 1973 to just four so far this year. "The great nuclear power-boom that was forecast ten years ago is never going to happen," says John Ahearne, a senior aide to Energy Secretary James Schlesinger.

The nuclear industry is clearly in for a lean time. Babcock and Wilcox recently found itself forced to lay-off 500 workers at one reactor-construction plant and to close a nuclear components factory entirely. Westinghouse, the nation's No. 1 reactor-maker, has so far managed to avoid lay-offs, but says vice president John J. Taylor, "Our commercial nuclear division stopped growing as a business about a year and a half ago. . ."

*Newsweek, 3.10.77*

## Outrage of the Islands

"The discovery of strontium-90 and plutonium in the 100 Micronesian islanders permitted to return to Bikini atoll more than twenty years after the cessation of American nuclear testing serves as a classic example of bureaucratic mismanagement . . . I spent the summer of 1963 on Eniwetok and Bikini atolls conducting biological research under the auspices of the U.S. Atomic Energy Commission. During this visit we were forbidden to eat any species of fish, crustacean or mollusc inhabiting the lagoons or reefs of these atolls . . . This restriction was due to the very high amounts of radio-



active strontium, thorium and plutonium in the flesh and skeletons of these animals.

"However if one reads the official USAEC literature as well as those government sponsored articles published in the scientific literature of the late 1950s, the statement was repeatedly made that 'the marine and terrestrial fauna of these atolls is qualitatively and quantitatively the same as those which existed prior to nuclear testing.' Unfortunately the fact that the marine and plant life were contaminated with levels of radioactive isotopes toxic to humans was conveniently omitted from these reports. Thus armed with false data, the US Government could appear to be noble and just in permitting the formerly displaced inhabitants of Eniwetok and Bikini to return to their homes after they were forcibly evacuated in the early 1950s.

"Now these innocent people, many of whom have never seen their 'native' atolls and whose domestic economy is entirely dependent on fishing or growing food in contaminated soil, will be relocated to another atoll downwind of Bikini (and presumably marginally less dangerous to life)."

*Jaques Berger, letter to Boston Globe*

### Horticultural Genius Breeds Eco-Catastrophe

Why is it that man never knows when to throw in the towel? Rather than try to reverse the processes that are degrading the biosphere, he insists on trying to accommodate them. Take salinisation of the land that has resulted from large scale use of irrigation. Ten per cent of the world's farmland is now affected, yet instead of returning to smaller and less damaging means of irrigation, our response is to devise methods of growing crops on salty soil. Two University of California scientists claim to have achieved remarkable results in this field. They can now irrigate both barley and tomatoes with undiluted sea water. Barley yields are about 900 lbs per acre as compared with 2000 lbs per acre under normal circumstances. It is astonishing that they should yield anything at all. By accommodating such trends, however, we are clearly rendering salinisation that much more tolerable and encouraging people to persist in destructive irrigation methods. It may be a feat of horticultural genius but it is hardly tackling the root of the problem.

*Audubon*

### Protection Racket

Unnecessary X-rays are costing the American public two billion dollars a year, according to Donald Kennedy, the chief of the Food and Drug Administration. An estimated thirty per cent of all diagnostic X-rays are not really needed but are ordered because of "concern about professional and medico-legal consequences." In addition more than 150 million dollars a year could be saved if repeated X-rays were eliminated by improvements in quality assurance. No-one has yet totted up the cost of the extra cases of cancer caused by x-raying.

*Environment, Jan/Feb 1978*

### Force of Habit

What will happen when all fish life in the Irish Sea is so contaminated with plutonium, caesium and other radionuclides from Windscale that the British Government is finally forced to admit that fish caught there are no longer fit for human consumption? Will people be sensible and stop eating fish? Not if experience is anything to go by. The eating of trout taken from Lake Michigan has been banned because of their very high PCB content, up to 40ppm. This has not prevented unlicensed fishermen from netting trout and selling them to consumers. Agents from the Michigan Department of Natural Resources have tried to prevent this but only at considerable risk to their own lives. They have been shot at and subjected to high-speed ramming attacks by the fishermen.

*Audubon*

### Civil Disobedience Hill-Billy Style

Farmers in Minnesota have devised an ingenious campaign of civil disobedience to protest against the construction of a power line that will straddle 415 miles of rich Minnesota farmland. Among their tactics: inviting the construction workers to their headquarters at Bucky's Bar and drinking them under the table; and driving along dirt tracks in their pick-ups in order to raise clouds of dust that will obstruct the vision of survey crews.

*Washington Post, October 1977*

### Suffer Little Children

"If we don't leave any problems for our children to solve, their lives will lack zest."

*M. Boiteaux, Director General of EDF, France's Nuclear Industry.*



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**No.1 The Other Energy Crisis.** Erik Eckholm.

**No.4 Energy: The Case for Conservation.** Denis Hayes

**No.6 Nuclear Power: The Fifth Horseman.** Denis Hayes

**No.11 Energy: The Solar Prospect.** Denis Hayes

**No.13 Spreading Deserts—The Hand of Man.** Erik Eckholm & Lester Brown

**No.19 The Solar Energy Timetable.** Denis Hayes

*Available shortly:*

**No. 21 Soft Technologies, Hard Choices.** Colin Norman

All Worldwatch Papers are available from *The Ecologist*, 73 Molesworth St., Wadebridge, Cornwall, PL27 7DS, U.K. £1.00 post free. Send for the complete list.



## Books

### Starving the Mind

**ORTHOMOLECULAR NUTRITION: NEW LIFESTYLE FOR SUPER GOOD HEALTH**, Abram Hoffer and Morton Walker. Keats Publishing Incorp., Conn., U.S.A. \$2.25.

We all need to be reminded that among the most important ecological factors which can erode Man, his mind and his behaviour, is what he puts in his mouth. Over thirty years ago the great American nutritionist Henry C. Sherman wrote as follows: 'Even in the everyday choice of food we may be dealing with values which are above price for the health, happiness and efficiency, and for the enhanced duration and dignity of human life'.

Yet the importance of good nutrition for the preservation of health and the prevention of disease, especially with regard to vitamins, has since been almost entirely ignored — with a few honourable exceptions — in the fields of medicine, public health, nutrition and dietetics, and food fabricators have, not surprisingly, rushed in huge numbers into a lucrative field which appears to be surrounded by no fences worth bothering about.

Government agencies and other respected authorities have, of course, laid down minimum daily requirements (MDR) and recommended dietary allowances (RDA) for what they mistakenly believe to be all essential food factors, and these have been accepted as reliable guide lines for good health. Unfortunately they can be, and too often are, woefully inadequate. They cater for the average person when, in fact,

such a person seldom exists.

Indeed it has been clearly shown that the essential requirements of many individuals may differ from the norm by a factor of several hundreds, and even, in cases of illness, by as much as a thousand. This is enough to cause havoc not only in the body but also in the mind of those denied fulfilment when their need for certain food factors is higher than that available in average modern meals. This is the basic argument put forward clearly and convincingly by the authors of this book. Undoubtedly it will infuriate many psychiatrists, but equally it will bring encouragement to many relatives of mentally ill people.

For twenty-five years Dr. Abram Hoffer has been putting into practice his conviction that the secret of optimum health lies in the whole-bread concept of nutrition. He has treated a wide range of physical and mental illness, with the emphasis on the mental, using the science and art of healing with nutritional therapy — now widely known as orthomolecular psychiatry.

The authors of this courageous book pull no punches: 'Deterioration has been forced on our population by the creation of artificial foods lacking natural vitamins and minerals,' they write, and further on they state clearly, 'the basic treatment consists in removing from a patient's diet food artifacts and synthetics, and restoring to his diet all those natural foods which are rich in all the nutritional elements, as well as assessing and catering for his individual needs, by supplements of vitamins and minerals in mega (very high) doses.'

Case histories described in detail provide remarkable proof that recovery, even in severe mental illness, can be achieved by using these methods; the authors demonstrate that orthomolecular nutrition can restore a full measure of health, happiness and human dignity even to those unfortunates formerly imprisoned in mental institutions where they were given grossly inadequate food without supplements, or sent home and kept in the pathetic state of apathy induced by tranquilizers.

Because of the insight this inspiring book gives us into the

factual causes of mental sufferings, and the hope it raises that these sufferings can actually be cured completely by these nutritional means, it should be read by every professional connected in any way with mental illness, as well as by every one of us concerned to conserve our own mental health and that of our families, as well as by all those caring for a mentally sick relative.

Cherry Hills

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### Of grain and mulch and ostriches and things .....

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**FARM YOUR GARDEN** by Joanna Smith. Sidgwick & Jackson, £5.50.  
**SMALL-SCALE GRAIN RAISING** by Gene Logsdon. Rodale, £2.95.

**THE ORGANIC WAY TO MULCHING** by the editors of *Organic Gardening and Farming*. Rodale, £4.50.

**ANOTHER WAY OF LIVING** by Jacques Massacrier. Turnstone Books, £2.95.

Books on every aspect of self-sufficiency are evidently very big business these days. At times I have a crazy vision of self-supporters all busily writing books for other self-supporters to read, like the people in the old story who 'earned a precarious living by taking in one another's washing'. But no doubt the majority of such books are bought by the growing army of those who want to supplement a conventional income or enrich a conventional life-style, while putting off from year to year the problems and risks of total commitment. There is no harm in the authors of these books providing plenty of fuel for escapist day-dreams, as long as they bear in mind that a minority of their readers may actually turn to them for practical advice in areas where a mistake could be expensive or dangerous.

*Farm Your Garden* is written by and for the part-timers. Its modest and sensible aim is to encourage the use of gardens for food production. It should open many people's eyes to the possibilities of livestock keeping on even a fairly modest patch of ground. The purists may object to, say, rearing one or two weaner pigs on commercial concentrates: but though this may not be true self-sufficiency, it is surely one degree better than buying one's



bacon at the supermarket? Joanna Smith has only been farming her garden for five years: and the contributors she has enlisted to write on topics, such as cows and goats, with which she is not personally acquainted are amateurs too. For readers who are absolute beginners this is all to the good: there is admittedly no substitute for first-hand experience, but to follow someone else's painful initiation is perhaps the next best thing. We learn from our mistakes; but it may be possible to learn from other people's if they are frank enough to confess them.

*Small-Scale Grain Raising* will interest both the dilettante and the fanatic. It is a curious fact that the only food plants hardly anyone thinks of growing for his own use are the ones we recognise as most basic to human survival. It is true that in terms of cash value per square yard cereals fall a long way behind most vegetables, let alone fruit — a point the author tends to gloss over. But for anyone with land to spare they could be a rewarding crop: and Gene Logsdon is well aware of the moral arguments in favour of bypassing the agribusinessmen who dominate modern grain production. His book is full of handy tips like the fact that wheat can be quickly threshed and winnowed with no more sophisticated equipment than a short length of hosepipe and two buckets. Mr. Logsdon is American, and some of the crops he discusses, such as rice, sorghum and soybean, are highly unlikely to thrive in Britain — though if our present trend towards a continental climate continues, their time may come.

*The Organic Way to Mulching* is a very long-winded guide to what I have always regarded (and still do) as a fairly simple subject. The basic principles of mulching could be clearly and adequately expressed on, as Churchill used to say, "one side of a piece of paper". The Rodale team fill 180-odd pages by itemising different materials, different crops, and individual case-studies from the length and breadth of the U.S.A. Some of the suggestions are prohibitively expensive, and almost all take for granted the reader's ability to scour the countryside and load likely materials into his car. But I

must admit that the authors' habit of considering virtually every bulk waste material as a possible aid to good husbandry is one to be encouraged. And I shall certainly try at least one of their suggestions, *newspaper mulch*, this summer!

*Another Way of Living* is like nothing else I have ever seen. It has the appearance of a hand-produced book, with clear italic calligraphy flowing around jolly cartoon-type illustrations. (Unfortunately this medieval style does not extend to the binding — single leaves glued to the spine — which in my copy has started to disintegrate already.) The publishers describe it as "a complete and entirely practical introduction to self-reliant living", which it isn't. It does touch on all the usual subjects, and some less usual ones like Yoga, Herbalism and Horticultural Astrology, but the treatment is sketchy — to be *practical* the author should have opted for a longer book or a shorter list of topics. At times it reminded me of that Victorian classic *Enquire Within Upon Everything*, where recipes for homebrew, beef tea and furniture polish rub shoulders with moral precepts and instructions for cleaning ostrich feathers, playing whist or stopping one's own teeth. *Another Way of Living*, like *Enquire Within*, makes an entertaining bedside book and contains plenty of worthwhile ideas. But it is not so much a hand-book as one man's idiosyncratic, rather Rousseauesque (Jean-Jacques and Henri) vision of the "simple life".

Nicholas Gould

#### Heaven on Earth

THE MAN WHO GAVE HIS COMPANY AWAY, by Susanna Hoe. Heinemann £5.90.

Ernest Bader was a good man. He wanted to create heaven on earth. At least, he tried very hard to be a good man. His temperament was against him, since nature had intended him to be a dictator.

He began life as the youngest of 13 children of a rather poor Swiss dairy farmer at the turn of the century. He moved to Britain in 1912, returned to join his country's army for part of the Great War, came back to Britain, and eventually became a British citizen. He had



Ernest Bader

various jobs before he started his own business selling plastics. He was — and is — a very gifted salesman. It was the very beginning of the plastics industry. When the second world war threatened he severed his German ties and began to manufacture plastics himself. His company became rich. His motivation was more complex, however. He had experienced life as an employee, and under conditions that were hideously harsh. This suggested to him that life as an employer might be better.

The story might have ended there, and Bader might have become a millionaire. He was a disastrous employer, however. He was harsh, autocratic, dictatorial. He fired anyone who disagreed with him, or of whom he disapproved. Indeed, there were occasions when he fired people who did not even work for him, or tried to. He had violent quarrels with everyone, was disliked heartily, yet demanded from his workers nothing less than total

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obedience to the master — which included uncritical agreement with all of the master's political and religious views. In fact, he was impossible, a despot, and his behaviour was outrageous. He was, and is, a Christian of sorts, and his dream was to form a company in which everyone shared his beliefs. He tried to institute church parades. He was a puritan in matters relating to sex and drinking, and sinners were dismissed out of hand. He talked much of love, but in his usage the word acquired strange new connotations. At the very least, love was to be on his terms or not at all.

The man was barely credible, a monster or, perhaps, a caricature. This may be, but Ernest Bader managed to achieve something very remarkable. In 1951 his company was given to its workers and became the Scott Bader Commonwealth. He had realised that although it was his revulsion at the life of an employee that had led him to start his own business, the natural outcome of that move had been to make him impose the very same life on others. From his childhood experiences he had learned to hate usury; now he came to hate capitalism.

Shortly after the war he tried to form a "fellowship", in which all the members of the company would advance together. The concept was vague, it was clear that whatever the spiritual advantages might be the master was to remain firmly in charge of everyday affairs, and the fellowship died a natural death. It was revived, in a new form, as the Commonwealth. The concept grew, continues to grow, and Bader grew with it. His powers were curtailed — not without a fierce rearguard action from him — and a new, and secular, concept in industrial ownership and management developed.

Susanna Hoe has described the life of this extraordinary man. At times her sympathy for him leads her to lean a little to his side of the many disputes, but the facts are there and the man is revealed. The Commonwealth is a substantial achievement and after reading Ms Hoe's book its founder is less of an enigmatic figure.

Michael Allaby

## OTHER BOOKS RECEIVED

**Wildlife in Britain and Ireland.** Richard Perry. Published in association with the World Wildlife Fund, Croom Helm, £7.25.

Although many species of wildlife in Britain and Ireland are already extinct and others are under threat from the destruction of their habitat, some rare species have re-established; some birds have benefited from Forestry Commission plantations, and nearly a hundred species of fish now thrive in a reach of the Thames where a decade ago nothing but the eel survived. Richard Perry's detailed and readable book is not therefore an undiluted tale of woe. He believes that conservation can work. The doom brigade may be less sanguine but there is no doubt that Perry's view will bring far more new recruits to the cause, than the philosophy of 'All is lost'.

**I'm a Stranger Here Myself. The Story of a Welsh Farm.** John Seymour, Faber £3.95.

Two fashions make it certain that this book will succeed. It fulfils the current appetite for "real life" stories of the trials and rewards of self-sufficiency with plenty of philosophical diversions, good humoured anecdotes and country wisdom; and it comes from the most prolific and popular of self-sufficiency gurus.

**Living on a Little Land.** Patrick Rivers, Turnstone Books, paperback £1.95.

"To visit Field Gate is a most rewarding experience. Here on a few acres of nearly impossible land (so steep that even the goats look giddy) these two people . . . have developed what seems to me to be well on the way to being a model self sufficient smallholding . . ." so says John Seymour in his introduction. Patrick Rivers asks all the questions that people contemplating such a life should ask themselves and supplies practical answers based on personal experience. He does preach a bit, but his book makes compelling reading and is charmingly illustrated by Sally Seymour.

**The Organic Poultryman.** Matthew A. Thompson. Published by the author, £2.00 from Shipton Poultry Farm Bridport, Dorset.

Mr. Thompson wastes far too much space chastising everyone who does not agree with his particular way of doing things. His book will appeal to those seriously interested in poultry breeding, it will be of little help to

the beginner for whom *The Backyard Poultry Book* remains a much better buy.

**Backyard Beekeeping.** William Scott. **Backyard Poultry Book,** Andrew Singer. **Backyard Sheep Farming, Backyard Pig Farming, Backyard Rabbit Farming,** all by Ann Williams. Prism Press, paperback, £1.50 each.

A comprehensive, useful, clearly written and well illustrated series — there's nothing like doing-it-yourself for really getting to know how, but these books will undoubtedly help the learner, and learning goes on for years.

**In and Out of School. The ROSLA Community Education Project.** Roger White and David Brockington.

Routledge Kegan Paul £4.25 (cloth), £2.25 paperback.

Describes a four-year project by ROSLA (raising of school leaving age), the outcome of practical experimental work with fifth formers within and outside the formal school institution. The authors suggest that better use of available resources could improve the quality of training given to non-academic urban adolescents.

## VISION

*... our Anglo-Saxon passion for the country has had the result of turning the country into one vast town; but a town without the urban conveniences that make tolerable life in the city. For we all love the country so much that we desire to live in it, if only during the night, when we are not at work. We build cottages, buy season tickets and bicycles to take us to the station. And meanwhile the country perishes. The Surrey I knew as a boy was full of wilderness. Today Hindhead is hardly distinguishable from the Elephant and Castle. . . There is no more country at any rate within fifty miles of London. Our love has killed it.*

*Aldous Huxley in 'The Country' Along the Way. Published in 1925.*



# REPROCESSING THE TRUTH

## Some readers' comments



## Letters

### A Waste of Effort

Dear Sir,

Whilst agreeing with you that Mr. Justice Parker did not write a report of the proceedings of the Windscale Inquiry, but more a recommendation, and what we wanted was his summing up and not his judgment of the case, I cannot understand the method of thought that arrives at the conclusion, in the last paragraph of your paper *Reprocessing the Truth*. It is no surprise that this Public Inquiry should turn out just like other Public Inquiries; for some time now many people (and notably John Tyme) have been arguing for an Inquiry into Public Inquiries. They are by their set-up already stacked against the protestors who force a Public Inquiry. There is usually inequality of time, money, expertise and office back-up. John Tyme suggests disruption so that an Inquiry is unable to proceed, because he says that at present the basis of Public Inquiries is 'illegal'. FoE and others nevertheless decided to play the rules as-laid-down for the Windscale Public Inquiry and have again ended up with predictable results. However I do not see why this leads to your conclusion to call on objectors to the FBRs to 'boycott the coming Inquiry and instead commit themselves to a programme of non-violent civil disobedience' and neither do I think it would be effective.

If the 'opposition' could accuse us of anything which they would view as discreditable, they could be rid of us. No. Our strength lies in hard argument and in indisputable facts. The decision to expand Windscale was taken in the House of Commons. It is a political decision. Politically we lost the battle this time when only about eighty members were against the Windscale expansion. But there is still time for change as no concrete will be poured for four years. In four years a lot of changes can and will take place. It gives us time to convince the citizens of Britain (and Europe) that, for instance, making a quick few quid out of cleaning up Japanese plutonium does not get us out of our economic difficulties any more than North Sea oil can solve our problems. We have to grasp the nettle of employment with the Unions; we have to explain to people why perpetual industrial growth is not on; we have to set out acceptable alternatives. Bother the red herring of Mr. Parker. Twisting the facts to fit an outmoded version of the truth is a pretty impoverished state for a Government to be caught in. When the people suddenly discover that their Emperors in the leading

political parties have no clothes on, there may be trouble. We must keep calm, try to divert the shock into constructive energy and lead our country into safer ways. Civil disobedience is at present a ridiculous waste of effort. Political leadership is what we must give.

Yours faithfully,  
Sally Willington,  
Hon. Sec. The Ecology Party,  
Riverside Herb Garden,  
Hessenford, Torpoint,  
Cornwall.

P.S. In other words, don't play your 'last card' too soon!

### Scurrilous!

Dear Sir,

Your article on the Windscale Inquiry, *Reprocessing the Truth*, is the most scurrilous and virulent attack on the honesty and integrity of highly trained, professional scientists and engineers that it has ever been my misfortune to read. Like the inmate of the lunatic asylum, who considers everyone else mad and only himself sane, you portray the whole Inquiry as a premeditated farce in which the Hon. Justice Parker, BNFL, the ICRP, the Government and indeed everyone in the Nuclear Industry have conspired to defraud the objectors. What a travesty of the truth!

Your attempt to discredit Justice Parker is in very sharp contrast to statements

made by some of the objectors as the Inquiry closed. Thus Raymond Kidwell, counsel for Friends of the Earth, praised the 'patience and care with which the tribunal has treated our case', and Dr. Brian Wynne of the Network for Nuclear Concern, was also full of praise for the way in which the Inquiry was conducted.

In fact Justice Parker demonstrated at Windscale, as at Flixborough, both his infinite patience and his remarkable grasp of complex technical arguments. His final report contains a carefully considered, but almost merciless rejection of the opponents' arguments and it is, of course, their pique and chagrin at losing, that makes them now try to discredit the Inquiry.

My objections to your article are not, be it noted, with the detailed, hard-hitting technical points you raise — although these can and will be answered — it is in the spirit of science to question and discuss and you are completely justified in this. No, it is the attack on the professional competence and integrity of the scientists and engineers working in this field, and I am proud to number myself among them, that I take the gravest exception to. Thus it is alleged that 'Justice Parker and his assessors have despatched us down a one-way street to moral, ecological and social bankruptcy'. This is in order to further the 'personal ambitions of a small coterie of scientists and technocrats'. These ridiculous allegations would be laughable were they not so serious. I know from my personal acquaintances that the nuclear industry contains a good

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proportion of idealistic, conscientious people, many of whom are active Christians. Most of us hold University degrees and/or are members of professional bodies with high standards of conduct. Many of us have devoted our lives to developing this new source of energy for the long-term good of Mankind — a classic case of 'beating swords into ploughshares'. Have messrs. Goldsmith, Bunyard and Hildyard equivalent or indeed any qualification in this field, and for how long have they been studying it?

I would like to end with a brief comment on the Non-Proliferation Treaty. The majority of MPs agreed with the Inspector's interpretation as a 'straightforward bargain' in which the non-nuclear weapons states have agreed not to make or acquire nuclear weapons and to submit to safeguards, providing the weapon states give them every assistance in the development of nuclear energy for peaceful purposes; and this includes reprocessing. As Justice Parker himself put it 'I do not accept that the best way to achieve a new bargain is to break an existing one'.

Yours faithfully,  
A.N. Buckler, B.Sc.,  
Principal Scientific Officer,  
A.E.A. Winfrith

#### A Sympathetic Chord

Dear Sir,

Your recent initiative proposing a campaign of civil disobedience against nuclear power will strike a sympathetic chord in

many of us who see the nuclear programme as an appalling threat to the future of mankind. Please count me personally among those who would support such a campaign if this proved to be the only way in which we can bring the nation to its senses.

I am writing to make a distinction between my own position as an individual and my role as Chairman of the Conservation Society. However one chooses to put it, civil disobedience means breaking the law. No organisation is entitled to offer to break the law on behalf of its members without the whole-hearted consent of each and every individual within that organisation. Quite apart from the tricky legal issue of conspiracy, there is also the problem of whether it is morally right to place individuals in the dilemma of having to decide whether they wish to remain members of an organisation which they support in principle, but whose policy on a single issue they find intolerable. This is particularly difficult when that issue is one of tactics and not one of principle.

It is an axiom that every now and then men of goodwill have to unite to defy the law. In a democratic society such a decision has to be taken with the utmost care and after the most rigorous consideration, and even then it can only be taken by individuals or individuals who have come together in consort for the specific aim of breaking the law. It cannot in all conscience be taken on behalf of members by compendious organisations such as the Conservation Society. It may be that we need to create a new organisation with the specific purpose of developing a programme of civil disobedience with its

cadres of individual members who have joined knowing full well what the implications are of their actions. I am sure that many members of the Conservation Society would be willing to join such a group as I certainly would do.

Yours faithfully,  
Leonard Taitz,  
Chairman of the Conservation Society,  
Chairman's Office,  
16 Nethergreen Road,  
Sheffield, Yorks.

#### Publicity Stunts

Dear Sir,

The Conservation Ecology Group shares the general feeling of anger and dismay about the Parker Report. We endorse all of the points you made in your critique — with the exception of the conclusion, in which you called for a campaign of civil disobedience against nuclear power.

Without dwelling on the ethical and constitutional implications of your idea, I would like to suggest, with respect, that it is inappropriate for two reasons.

Firstly from a propaganda viewpoint, it would be counter-productive. We need to influence the average MP and the average voter — neither of whom are likely to be impressed by any despairing resort to illegality. The anti-nuclear movement would, in consequence, find itself confined to the political extreme left and thus, accordingly, condemn itself to utter failure.

Secondly, such a campaign would not be effective in delaying the advance of the plutonium economy. Demonstrators would be removed and punished and construction of the reactors would continue as before. The nuclear establishment would rejoice and resume its misguided activities with increased enthusiasm.

If we are really serious about stopping nuclear power we must do it through quiet persuasion of the political parties, right as well as left. We must continue to work through the 'proper channels' even when we are provoked as we were by Parker. Above all we must not allow the apathetic media's insatiable appetite for 'drama' to tempt us into misguided publicity stunts which will needlessly alienate the public.

Yours faithfully,  
Richard Williams,  
Secretary Conservative Ecology Group,  
11 Church Road,  
Portsmouth, Hants.

#### Fascinating

Dear Sir,

I was fascinated by *Reprocessing the Truth*. The naive thing about people like Justice Parker is that they propose more dangerous devices to clear up the mess already created by existing dangerous devices. The only answer, of course, is to ban all dangerous devices. They are just not necessary after all.

Yours faithfully,  
John Seymour,  
Fachongle Isaf,  
Sir Benfro.

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**THE ROUGHAM TREE FAIR** will be held at Stonepit Field, Rougham, Suffolk, on August 19th and 20th. Your participation is invited in this fair, which, although oriented towards the environment and conservation, can be as diversified as the participants and contributors wish to make it. For details write to: Stephen Sampson, Green Deserts Ltd, Rougham, Bury St. Edmunds, Suffolk.

**C.P.R.E. CENTRAL GROUP VISIT** to Braintree Demonstration Farm on 12th August 1978. This unusual farm is run by Essex County Council as a testbed for ideas upon countryside management. During this Saturday afternoon visit the party will receive an explanatory talk upon the planning objectives of the farm, and a visit to see what is happening at the farm itself. You will have to take lunch early, as the visit commences early in the afternoon. To book a place write to: Robert Holden, 3 Merrick Square, London SE1 4JB, or phone 407-9209 (evening) or 836-9456 (day) stating whether you will have or need car sharing spaces. There will be a charge of 20p to cover administrative costs.

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**NUCLEAR PROTEST.** Half Life are organising a weekend vigil outside the nuclear power station at Heysham on the weekend 16/17th September 1978, with a march of support to the site on the Saturday afternoon. In order to make this a successful protest, it is essential that support for the strong local feeling of opposition comes from all over Britain. For full details contact: Duncan Laxen, Half Life, 45 Snowhill Lane, Scorton, Preston, Lancs.

## CONFERENCES

**Ecopolitics at the Turning Point** Conference at Medway Little Theatre, September 9th. Speakers include Peter Cadogan, Fiona Cantell, Ken Smith, Colin Fry, Kit Pedler. Fee £2 incl. food etc. Licensed bar. Details: Environment Information Group, 27 Canadian Avenue, Gillingham, Kent. (Medway 575981)

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