Chain Reaction

Friends of the Earth Australia

Number 53 Autumn 1988 $2.75

BLACK DEATHS

plus 'TOO HOT TO HANDLE'

A CR lift-out on HAZARDOUS CHEMICALS

Chain Reaction

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LETTERS

Daintree Action

All of this year I have been attached to the 'Greater Daintree Action Centre' (GDAC) at Cape Tribulaton. I've noticed references to the 'controversial Cape Tribulation to Bloomfield Road' in various editions of *Chain Reaction*, but, in an attempt to be completely clear, for the last four years the GDAC has been attempting to influence the closure of the 30 kilometre 'Cape Tribulation to Daintree' road to save a priceless and unexplored forest and set back developers ten years. We are hoping for a reinstatement of the walking track which would be of international signifigance, and with six creeks that run all year round along its length as well as our plans to propagate fruit trees, would be most enjoyable as well.

I have been drafting an up to the minute report for you, which would have been disheartening, as a major obstacle still remains to the success of this incredibly drawn-out operation we are engaged in.

The Ku-Kuyalangi tribe live at Wujal Wujal (Bloomfield) and we can't communicate with them as they are 'under the thumb' of the Lutherans who run the Mission who tell us to 'piss off' whenever we try.

Although we (the GDAC) have submitted a first-class submission to Richardson's Department, outlining the benefits of road closure/low cost stabilisation of erosion damage and walking track improvements (such as wilderness walking trails), we appear at the bottom of Richardsons' list of priorities.

The Wujal Wujal submission desires that the road remain open, citing vague economic advantages such as tourist traffic dollars for artifacts (no shop at present — all projected figures).

We believe Richardson would be desperate for a 'rubber stamp' from the Aboriginal community for the World Heritage Listing, so it may be too late to try to present alternative ideas to the people at Wujal Wujal — such as 'isolation' being an asset rather than a liability — a draw card for tourists arriving by boat (more efficient transport), especially if they were to place some emphasis on the traditional aspects of their relationship with the land.

So if you can send a deadline I can work towards. I'll attepmt a comprehensive overview of the situation as well as a present assessment. Don't forget to smile.

Robert Evanescing
Cairns, Qld

A Question of Power

Re: the Richmond-Brunswick powerline. The debate is missing a major point. I'd like to broaden the issue.

Solar electricity generation for Melbourne is already at least ten years overdue. Solar cell panels should be put *en masse* on the north walls of every high rise building and feed any surplus power generated into the SEC power grid. Another line in, particularly an overhead one, is *retrogressive planning*. Make the big power consumers foot the initial cost.

The amount of extra power collected by these panels would not be startingly large, especially during Melbourne's winter; but it would be sufficient to render unnecessary this powerline and probably five or six to come. There are many problems, certainly — but it is, after all, during the day that the extra demand occurs. These panels could, at least, run all the air-conditioners during summer.

As to how this solar breakthrough could occur; Western Australia could supply the know-how and probably much of the hardware.

So why hasn't it happened already? Apparently the SEC has played some role in repressing the implemtation of solar electricity technology. To my mind this is good enough reason to break up and restructure the whole electricity commission. Perhaps *transfer coalmining to the Gas and Fuel Corporation*. Perhaps a wave of solar generation would also be enough to put a stake through the fat white heart of the nuclear power plant idea that the SEC's had floating since, to my knowledge, the early eighties.

Two main reasons touted for the failure to capatilise on this renewable power source are; Melbourne's cloudiness and the 'prohibitive' initial capital outlay, but there is, as always, another. The SEC fears the loss of its hegemony. Solar power is, potentially, *very* autonomous and no monopoly likes that situation: but in the wake of the Ash Wednesday litigation even the megalomaniacs of the electricity commission and the government should recognise the danger of overcentralisation and the value of spreading a burdon.

Justin Moore
Elwood, Vic

Embryo Experiments

The Victorian Standing Review Committee on In Vitro Fertilisation (the Waller Committee) is recommending to the Victorian Parliament that it should be legal for embryos, less than 23 hours old from conception, to be submitted to destructive experimentation.

The Committee's earlier position was that 'an embryo is formed when a single sperm penetrates the ovum'. Now they want to reduce under 23 hour embryos to the status of 'pre-embryos'.

What happens at 23 hours that is so special?

Nothing really. It is the stage at which the chromosomes derived from the two parents are lined up in the embryonic cell so that they are easy to *see*.

The conceptus has obviously been *functioning* as a dynamic, integrated entity since sperm penetration — or the chromosomes would never get to line up. This dynamic self-intergration is what makes it so obvious that from sperm penetration a new organism, a new human entity, exists.

From the instant of sperm penetration to the time of death, maybe 70 or 100 years later, the life of that entity is a continuous process. To select 'syngamy', 23 hours after conception, as the time when legal human rights first apply, is just as arbitrary and illogical as to select weaning, teething or the first pubertal acne-spot.

If the Victorian Parliament makes the mistake of accepting that early human embryos are to have no protection from destruction by experiments — a precedent will be set. Other nations and states will be influenced.

The whole human race will suffer loss of self respect.

Arnold Jago
Mildura, Vic

Computer Language

I realise sacrifices must be made in the cause of stopping a global holocaust, but surely the English language can be spared? I refer you to Russell Griffin's article in your last edition *(CR52)*. In the article Russell commented on the alleged changed spellings of the words 'computer' and 'disc'.

Sadly, Russell's memory has served him badly. Computer has never been spelled with an 'o' as he claims, nor has the spelling of disc changed over the centuries. Disk (with a 'k') is an acceptable alternative spelling for disc. However, disk is a US spelling, and Australians generally use the English form. I am speculating, but perhaps Russell's confusion stems from his recently having changed to buying US-made software.

Of course these are not the only spelling errors in the issue, but Russell did go rather out of his way to make them.

I should add that I use word-processors at work and home, and I think they are marvellous, mnd-freeing tools. Hard copy is cumbersome, irksome and restrictive by comparison. Writers cramp is also a manifestation of RSI, and I suffered mightily from it before I discovered silicon chips.

Is that sufficient debate for you Russell?

David Mussared
Melba, ACT

More Computers

I have only just come across the summer edition of *Chain Reaction (CR52)* containing the shallow, paranoid and disjointed diatribe fron Rusell Griffon who, in my view, misrepresents the thrust of Weizenbaum's book. Weizenbaum isn't anti-computer, he simply feels '. . . that there are limits to what computers ought to be put to do'. Moreover, Weizenbaums' excellent book is seriously dated because it only relates to the use of large 'mainframe' computers, being written well before the impact of the microprocessor.

Does Mr Griffin think that it is more noble to copy things by hand, just because photocopiers have the same microprocessor chip in them as many computers? Or that the staff of *Chain Reaction* are somehow uplifted (rather than suffering from RSI) by re-typing contributions? Serious questions can and are being asked about the use of computers in community groups, but Mr Griffin has neatly missed all of them. His sweeping assertions are badly based, and some are outright nonsense. For example, how can 'convenience' equate to '. . .far more, and onerous, work. . .?' 'Convenient' means 'not troublesome'; 'onerous' means 'causing or requiring trouble'.

I am totally sick of those around social change movements who extol being inefficient (wasteful) and inaccurate (uncaring). These movements are over-worked and under-staffed, equiped, and funded; but it is sheer stupidity to make a virtue of a major problem just because one lacks the imagination to see a way to change it. I do not subscribe to the notion of ideological purity, if the cost is defeat.

In fact Mr Griffin has fallen into precisely the trap that Weizenbaum was attempting to warn us about, which Nelson calls 'cybercrud'; attempting to avoid responsibility for our actions. 'So here we see the same old trick: people building a system and saying it has to work because it's a machine, rather than that's how I designed it'; moreover 'The computer is an incredible projective test: what you see in the computer comes right off the back wall of your psyche'(Theodore H. Nelson *Computer Lib, Dream Machine)*. Who, exactly, is served by calling the computer '. . .the machine which has brought us to the brink of the last war.'? This is drivel! It is *people* who have brought us to this point, and to pretend otherwise is dangerous. Unlike the gun or the bomb, the computer emphatically *does* give us greater quality of life through potable drinking water, sewage disposal, flood mitigation, traffic control, mail delivery and the humble telephone; or is this also an instrument of the devil?

I can't help noting that Mr Griffin won't wear the hair shirt he is ready to prescribe for others; if quill and parchment are good enough, why does he use a wordprocessor? Angry? You bet I am! Not because I'm a computer specialist, but because I've had a bellyfull of deckchair revolutionaries like Mr Griffin telling those of us sweating in the engine room, how to stoke the boiler.

I enclose a reprint (The Myth of the Machine, from *Computer Lib, Dream Machine*) which I would like *CR* to forward to Mr Griffin, and perhaps share with your readers, as I feel it contains a much better understanding of the situation the 1500 word page and a half allowed Mr Griffin. A final point; my Oxford English Dictionary knows not 'comput*or*' but gives '"compute", from French "computer", from Latin "computare' — reckon'. Oh? Eh! Also '"disc' equals "disk' from Greek "diskos' — quoit'.

Roland Roper
Fitzroy, Vic

P.S. This letter is available by modem on request.

If anyone would like a copy 'The Myth of the Machine' they can send a self-addressed stamped envelope to *Chain Reaction* and a copy will be fowarded to them.

. . . and more!

Since writing my letter about the implications of computers and their use by large and small users I have had some further thoughts which I would like to add to what I wrote earlier.

Broadly, what I wrote earlier was that technology was all too llkely to be exclusive because of the thinking of those who financed its creation and use. More information has come to hand which can add to our enlightenment about this question and gives us some clues as to how it may be resolved.

The first of these sources is *Pandomonium* by

LETTERS

Humphrey Jennings. Jennings is dead, but his conviction that mechanical thinking was destructive of the imaginative and the poetic is borne out in his fine collection of 'cinematic' fragments culled from documents and books over the past 300 years. He has charted the growth of what we may call mechanical behaviourism, that is, the subordination of the developers' minds to an empty truth on which to build a construct which might explain the relationship of men and women to their world.

Meanwhile, *The Tao of Physics* by Fritjof Capra reveals that atomic physicists discovered the futility of scientific construction forty years ago (roll over, Descartes!). Desite the limitations of alphabetical language, Capra brings home the discovery that there is no ultimate piece of matter. He says that atomic research led to a point where 'it was and it wasn't'.

This must be the best kept secret of our age, for it seems to me that it provides a weapon of incredible power to be applied in the service of a more thoughtful and sensitive humankind (and save us from those who would be just the opposite). Since conservation has to be essentially anti-materialist those discoverers of the worst weapon on earth have given us the key to reversing 300 years of abuse and neglect.

But in terms of computers, in particular, can I now add two other comments on the effect of the machines on children. The two are from magazines about childhood development and education in Australia.

One writer says, 'Computers are impersonal, without warmth of emanations. Knowledge of computers is not an integral part of creating. It is, in fact, confining for the mind. It places boundaries on thinking (like television). All that is needed for adult life is the ability to operate computers. Secondary education caters for this. . .

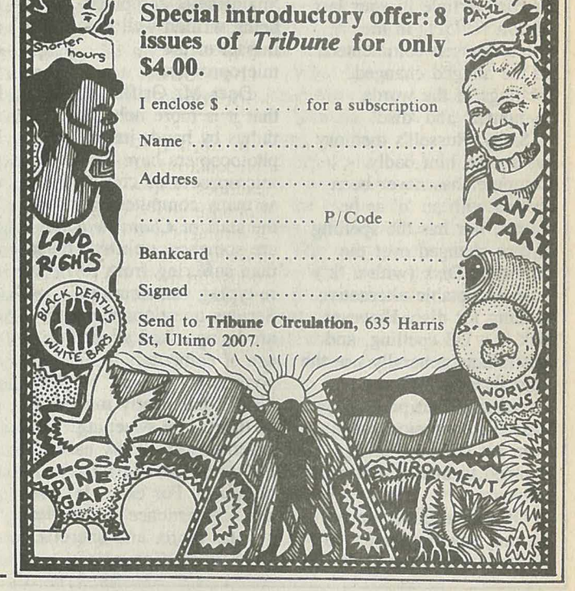
'The intrigue of the computer interferes in a child's natural play because it lures her away from what she would have spontaneously chosen.

'Dr David Suzuki, an expert on child development, says computers are the "biggest swizz' in primary schools' (which is where the computer companies, especially Apple, are having their biggest impact among teachers who are resorting to mechanical and administrative thinking under the weight of demands from the central administrations and parents.

I hope this is helpful in furthering the debate which should be initiated on this subject.

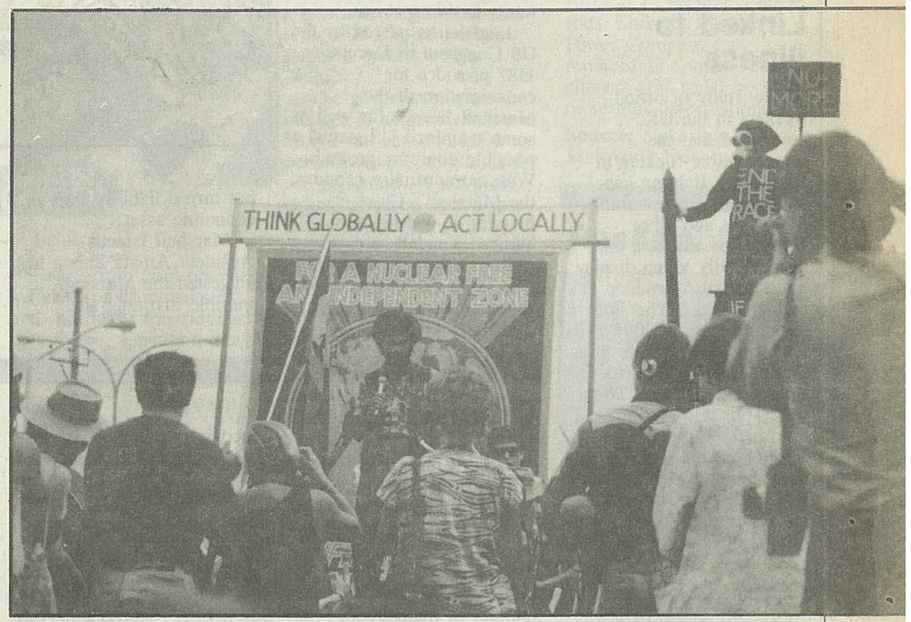
Russell Griffin
Hastings, Vic

You are invited to write letters to *Chain Reaction* with your comments on the magazine or on other issues of interest. Letters should be kept within 300 words so that as many as possible may be published. Longer letters may be edited. Write today to *Chain Reaction*, GPO Box 530E, Melbourne, Vic 3001, Australia.



EARTH NEWS

Kanak Deaths



Alphonse Dianou speaking as part of a demonstration against the 'Joint' US-Australian facility at Pine Gap, near Alice Springs in central Australia, on 18 October 1987.

Alphonse Dianou was killed with eighteen other Kanaks, by the French paramilitary police during the freeing of hostages on Ouved Island, New Caledonia four days before the French presidential elections. Jaques Chirac, who had hoped to gain politically from the hostage release, lost the election and afterwards the gruesome story began to emerge.

Many Australians had met and talked to Alphonse. One of the few Kanaks who speak English fluently (he learnt it while studying theology in Suva), Alphonse was sent by the FLNKS (Kanak Socialist National Liberation Front) to the protest against Pine Gap last October. He extended his stay after the demonstrations to spend some more time with the Aboriginal people there. Hundreds who heard Alphonse speak would be deeply shocked to hear of his death; and angered to hear this serious and quietly-spoken man dismissed by Bond TV as the "terrorist leader".

In April 1987, with New Caledonia out of the headlines, I spoke to Alphonse about the Chirac Government's policy of spreading thousands of troops throughout the villages.

"We don't need the military here to solve the problem. We see that we need to hold discussions with the French Government. We don't need the military, because that's a kind of psychological game, and people — especially the youth — I'm afraid that one day the youth will get mad, and they'll try and make trouble with the military. And they are waiting for that. They want us to move, in order for them to have a reason to catch the youth or even other people in the FLNKS.

Now they're playing a game. They help people build churches, or sometimes help them working in the fields or carrying wood. But we know it's only a game, because we know that when the government gives them an order to strike us or to kill — maybe that word is too harsh, but they have killed some of us already — then they'll forget they have helped the people build churches. They'll just go forward and kill Kanaks.

We have lived in the villages for many years, and never needed the military. The government thinks the country needs the military to calm people down and bring peace.

But we still ask the question: How can you bring peace with a gun in your hand? And we know that the French Government is only here by military force, to defend its own interests: economic interests, and even strategic ones."

Nancy Atkin

EARTH NEWS

Fluorescent Lighting Linked to Illness

A new study of office workers in the UK concluded that the imperceptible flickers in fluorescent lighting can trigger severe eye strain, headaches and other complaints. Flickers on user-friendly video display units may also produce similar attacks. The study tested a group of 100 volunteers — workers in a public service office using fluorescent lighting. They were split into two groups, one working under normal fluorescent lighting and the other under a new type of fluorescent lighting that had virtually no flicker. The first group consistently reported many more cases of headache, eye-strain and other complaints than those working under the new lights.

Source: *Consumer Currents* April 1988

Release

On the ninety-ninth day of a fast and at the end of his sentence for his 1984 actions, John Dixon-Jenkins has been released on bail from Pentridge Prison pending trial for the Bendigo Hostage Seige. (August 1987).

John has had several offers to get involved in areas in which he has a special interest and hopes to live usefully and purposefully in the community.

Nuclear Dump

The Pacific may become a nuclear dumping ground for Japan and the US. The US is looking at the Marshall Islands as a possible dumping site for its high level nuclear waste. Japan wants to dump at sea.

Legislation passed by the US Congress in December 1987 provides for consideration of the Marshall Islands (as well as some mainland US states) as possible dumping grounds. With extraordinary candour, the Marshall's Chief of Mission in Washington, Wilfred Kendall said 'The poisons are there already. The uninhabited islands are forever contaminated. Why not turn a liability into an economic asset?'

Marshall Islands president Amata Kabua has suggested the Marshalls as a possible dumping site.

Kendall said that there have been talks between the Marshall Islands and the Japanese. At the same time the Japanese are keen that the London Dumping Convention (LDC) Panel of experts (which is examining political, legal, social and economic aspects of dumping at sea) produce a report favourable to their plans.

Coincidentally Japan's Foreign Affairs Minister, Kuramari, has been visiting Pacific nations, dispensing economic aid.

Action: Protest to President Aamata Kabua, The Nitijela, Majuro, Marshall Islands, 96960 and the Prime Minister, Offical residence 2-3-1 Nagatacho Chiyodaku, Tokyo 101, Japan.

Source: *Tribune*

Organic Farming

The Institute for Alternative Agriculture Maryland, USA estimates that between 30,000 to 40,000 farms in the US now use little or no pesticides. A growing number of mainstream farmers have begun to question the farming techniques they adopted in recent decades. For example, many farmers no longer rotate crops the way their ancestors did which tended to keep many pests under control naturally since insects that fed on a certain grain starved during the season that crop is not planted. Another alternative technique is 'ridge tillage' in which crops are planted on mounded ridges in the soil. By disturbing only the top during planting, the farmer has less trouble with weeds and erosion.

As the farm economy has crumbled, farmers have sought to cut their explosive use of chemicals. In addition there is growing recognition among farmers that agricultural pesticides can contaminate ground water and cause problems. Some also question the long-term effectiveness of the chemicals. The National Academy of Sciences calculated that 447 insects had developed some sort of resistance to at least one pesticice by 1984. More than a dozen important US insects are now resistant to all five major classes of insecticides.

There has been a similar movement in Australia. A central western New South Wales farmer believes chemical-free agriculture is possible if farmers use crops and livestock in long rotations, as well as natural fertilisers such as legumes or manures, instead of manufactured phosphates or nitrogens. There has been a rapid increase over the past two years in the number of conventional farmers interested in organic farming.

Source: *Simply Living*

Television Unlimited

In March 1988 the Fitzroy-based community television group Television Unlimited (TVU) was granted a one week licence. The station will be located at UHF 47 on your dial and will run from 6 pm until midnight between 5 and 11 June 1988. There may be two further weeks of broadcasting later on if all goes well.

The station plans to run along the lines of community radio stressing local content and participation and acting as an alternative to the monopology controlled commercial stations.

Viewers living within a seventeen mile radius of Nauru House, in the western and northern suburbs will be able to receive transmission.

TVU would be interested to hear from people with programming skills, people with scripts, people with an interest in local affairs.

Contact: *TVU (03) 419 5111*

Grape Boycott

With the inclusion of the pesticide issue, a two-decade-old boycott of California table grapes by the United Farm Works (UFW) has grown to include fifteen consumer, health and environment groups, according to the *Consumer Affairs Letter*. The boycott, which had its inception with issues of working conditions and discrimination, now calls for a ban on five pesticides used by grape growers: Captan, Methyl Bromide, Dinoseb, Parathion and Phosdrin. The five are viewed by the Environmental Protection Agency as potentially hazardous, according to the *Letter*. UFW President Cesar Chavez said the boycott was launched to force California growers to stop spraying fields with hazardous chemicals. The letter reports that a Harris Poll taken in 1975 showed that seventeen million United States consumers were honoring the UFW-sponsored boycott of grapes, head lettuce and Gallo wines.

Source: *International Barometer*

Nuclear Deal

West Germany will be burying its nuclear waste in China's Gobi desert under a new agreement. In return for the waste, China will receive nuclear technology and assistance in developing its own nuclear program.

Source: *Panoscope*

Bhopal Settlement

Pressure from civil liberties activists, environmentalists and, not least, the victims themselves, appears to have convinced the Indian Government not to rush into an out-of-court settlement with Union Carbide Corporation (UCC) over compensation for the toxic gas leak in Bhopal in December 1984.

It had been hoped that the negotiations which have now failed, would allow a settlement to be announced prior to the third anniversary of the tragedy. The indications are that both the Indian Government and UCC will continue to work towards an out-of-court settlement, although in recent months both parties have been accused of delaying negotiations.

Environmentalists discern a shift in Rajiv Gandhi's relationship with the US. He is seeking to propel India into the twenty-first century by technological progress and is looking to the US for assistance. Penalising an American corporation for negligence in running its Indian plant might sour relations between the two countries. Feelings in India over compensation for Bhopal victims are running high. More than 40 distinguished Indians recently urged the government not to agree to a $US600 million settlement which would be wholly inadequate. To coincide with the hearing of the case on 18 November 1987 a coalition of all political parties demonstrated against a premature settlement and some 800 Bhopal women staged a protest in New Delhi.

The government puts the number of serious victims at 30,843 but some 523,000 persons have filed claims for compensation. If a typical casual labourer earned just Rs500 ($US38) a month, the compensation per head would be Rs120,000 ($US9,230) or 20 year's loss of earnings. But if the settlement was for US $600 million, this would mean around Rs6,000 ($US461) for each of the claimants, representing barely a year's earnings.

It is rumoured in Bhopal that the next of kin of the deceased — 2,600 deaths are officially acknowledged — will receive Rs26,000 ($US2,000) a year for ten years, while the injured will get about half this. Indian environmentalists point to how the Manville Corporation in the USA paid $US2.5 billion to 60,000 people in damage for injuries related to exposure to asbestos which works out to Rs540,000 (around $US40,000) a head.

Chief Justice Bhagwati identifies the feelings of those involved when he criticises the Indian Government for even considering the 'ridiculously paltry sum' payable as compensation. He concludes, 'is the value of Indian life as low as that?'

Written by Darryl D'Monte, a freeland journalist working in Bombay on environmental and development issues.

Source: *Panoscope* No.5. March 1988.

Control Rod Defects

According to the interim report of the periodic inspection of Unit-1 at the nuclear power station Ikata (Japan), defects including deformation and wearing have been found in the surfaces of all 464 control rods. Shikoku Electric Power Company has replaced 12 control rod clusters (192 rods) because of serious deformations.

Source: *Nuke Info* Tokyo Mar/April 1988

Resealable Can

A United States company called Reynolds Metals rolled out a resealable aluminium can at a trade show in Chicago in November 1987. Called the Reylock can, the containers are available in a variety of sizes from 16 ounces to one litre. The can allows aluminium to enter the multiple-service soft drink container market. In the past, companies producing aluminium cans were limited by an ability to lock in the carbonation of partially consumed beverages. The container has a domed top with a hole in the centre, topped with a photo-degradable plastic closure that is resealable. It will soon undergo commercial testing.

Source: *Resource Recycling Vol.VI.No7.*

EARTH NEWS

International Womens Day Rally 12 March 1988

Kava

'With kava, they having too much, it kills your memory. You can't think about no more. You can't think about what you got to do next. You forget about all what you done. Lot of places, they used to have dancing and singing. Now kava makes 'em stop quiet' — Nipper Tabergee, Kimberleys after a visit to Arnhem Land 1987.

Concern over the use of the Pacific Island drug kava by Aboriginal communities in Northern Australia is growing following the limited release of a damning health report.

The report from Darwin's Menzies School of Health Research, says kava abuse is the cause of a number of health problems including malnutrition, liver damage and blood disorders. It is expected to add to the push begun by Kimberley people for the classification of kava as a drug instead of a foodstuff.

But reaction from State and Federal authorities has been confined to expressions of support for a Northern Territory government push for more funding for research.

The implications of the Menzies Report were discussed at a conference of Health Ministers held in Alice Springs early in March 1988. NT Health Minister Don Dale said that the Menzies School 'had shown there was a potential for serious harm from kava abuse.

Source: *Land Rights News* March 1988

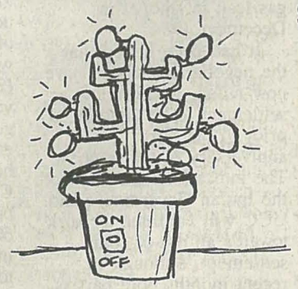
Wind Program

A four windmill, joint Chinese/Belgian wind generator plant built on the island of Pingtan is one example of the growing Chinese wind power program. Five Chinese companies are already among the world's top ten small wind turbine manufacturers, according to the Wind Data Center in Great Falls, Va. In 1985, Chinese firms built two-thirds of the 12,000 small wind turbines made in the world that year. In 1986, almost 19,000 wind turbines were constructed around the world, up from less than 5,000 in 1981.

The Chinese government estimates their country alone could use 30,000 small wind turbines.

Source: *Not Man Apart*

Plant Power



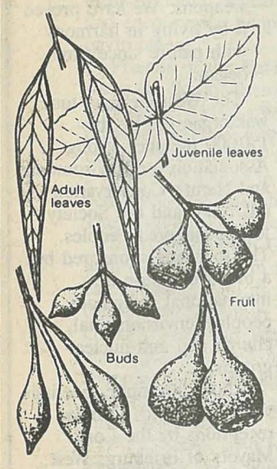
An Indian scientist, Shiva Prasad Kosta, is using banana plants as TV antennae and plugging calculators into tomatoes. In experiments around the City of Bangalore, Kosta got clear TV and radio reception using banana and cypress trees as antennae. He's now tapping electricity produced by plants to power radios, burglar alarms and calculators. Cactus plants have lit bulbs.

Source: *Development Forum*

Stickers for Sale

The back cover of *Chain Reaction 52* is now available as a sticker (above). These stickers are available from *Chain Reaction* or the Friends of the Earth bookshop, 222 Brunswick St Fitzroy for $1 each. If you are a community group interested in bulk copies, ring Judy at the bookshop on (03) 419 8700.

Save the Ironbarks



The 'Deep Lead Flora and Fauna Reserve' near Stawell, known locally as the Ironbarks Forest, is a small community forest that actually touches right into the Stawell township. It is used by athletic clubs, horse riders, cyclists and is well known to flower lovers and botanists from all over Victoria. The forest is home to the rare and endangered Squirrel Glider as well as Sugar and Feathertail Gliders.

There are rare plants such as *Euphrasias, Hibbertias* and, among orchids, probably the last population of the brilliant sun orchid, *Thelymitra mackibbinii*.

In 1976 the Land Conservation Council declared that the forest was of the 'utmost significance' and recommended that it be a flora and fauna reserve.

In 1982 Western Mining took out an exploration lease over a large area, including the 'Ironbarks'. In the typically obscure advert, no-one realised that section so-and-so, lot so-and-so in the county of so-and-so included the 'Ironbarks' until some months ago when red ribbons started appearing throughout the forest and alarm bells started ringing.

The Department of Conservation Forests and Lands are in complete agreement that the whole forest should be protected but feel that they cannot change the rules now, despite the massive destruction of rare plants and animals that will occur.

This small but significant forest needs your help. Write to the Minister for Planning and Environment, Mr Tom Roper, and ask him to instruct the Land Conservation Council to change the status of the reserve to that of a 'State Park' or 'Wildlife Reserve'. Write to Mr Cain asking him to prevent exploration within the park by excluding the Ironbarks from the mining lease. And write to newspapers, television and radio, urging exclusion of the 'Ironbarks' from the exploration lease.

Rehabilitation work could not restore the rich, complex and wonderfull beauty of the Deep Lead Flora and Fauna Reserve, the Ironbarks.

If you are a member of a conservation group, be aware that the Government is considering allowing mining exploration in National and State Parks.

For further information contact: Helga Saunders RMB 6081 Stawell, phone (053) 58 375, Eileen Goodfield at *Chain Reaction* (03) 419 8700.

Food Irradiation Shelved

The UK government has bowed to public concern and shelved its plans to permit food irradiation. The government accepted the advice of its experts that bombarding food with radiation to improve its shelf life is 'theoretically safe' but conceded that in practice irradiation would be used dangerously to mask the hazards of tainted food. The ban on the process, first imposed in 1987, will remain in force until suitable regulatory controls can be devised including a simple method to detect whether food had been irradiated. The government's retreat came in the face of formidable public opposition. Opinion polls conducted showed that up to 90 per cent of people were against the existing ban being lifted.

Source: *The Guardian*

EARTH NEWS

The ALP and U

Uranium mining is clearly on the agenda of the ALP National Conference to be held this June. The pro-mining lobby, who favour the abandonment of the present policy and support unrestricted mining and sales, are focussing debate on two issues — Australia's need for foreign currency and uranium sales to France. Meanwhile the anti-nuclear movement is arguing for no new uranium mines and the closure of the existing mines.

A paper by Peter Milton and Chas Collinson, *Uranium Mining — Market Prospects and Environmental Consequences* — exposes the false economic arguments being used to support an expansion of uranium mining. For example, it notes that:

- The world uranium market is oversupplied and will remain so into the next century.
- The Organisation for Economic Cooperation and Development (OECD) and the International Atomic Energy Agency (IAEA) etsimates for world uranium demand have been revised downwards by nearly 80 per cent in the last 10 years.
- Australia, the world's sixth largest uranium producer, 3,251 tonnes in 1985, has the capacity to produce 10,000 tonnes per year from Ranger and Roxby Downs — but can't find the markets. The French market offers little scope. France itself produces and exports uranium and has substantial investments in mining in Canada, Namibia, Niger and Gabon — all major producers.

In a nutshell the paper points out that there is no economic benefit to Australia to open any new mines.

The paper also discusses some of the other effects of uranium mining in Australia. It points out that two of our most important National Parks — Kakadu and Rudall River — contain significant deposits. Exploration and mining are not compatible with any definition of a National Park. Our parks must be protected from exploitation by mining interests.

The Aboriginal community living in the Rudall River National Park are totally opposed to mining on their traditional land and fear that the mining giant CRA are trying to force them out of the park.

The paper concludes with a challenge to the pro-mining lobby to show where the markets are that justify the opening of any new mines and a warning that if the ALP Policy is weakened further to permit new mines it would result in mining in our National Parks.

Copies of the paper are available, free, from the office of Peter Milton, Shop 32, Dorset Square, Boronia, 3155, Victoria.

Indigenous tour

On Monday 11 April 1988 an unprecedented alliance of indiginous peoples, including two Australian Aborigines, began a three week tour of West Germany with visits to Switzerland and Holland. The purpose of the tour is to inform the German people of the damage the nuclear industry has done to indiginous peoples and their land. The alliance represents six nations suffering from European nuclear colonialisation. The nine representatives are from the indiginous nations of Canada, the USA, Australia and Tahiti.

James Garrett, representative of the Lakota Treaty Council of the Lakota Nation in the Black Hills area of the USA said 'We are making this tour to show how the entire nuclear process affects indiginous peoples in different parts of the world.'

Richard Brooks of the Pitjantjatjara people of Coonana, Western Australia, will be attending the meeting n Germany. Mr Brooks was born in 1953 in Maralinga, the site of the British nuclear tests, and remembers hiding from the search planes. Thirty years on, his relocated home, Cundeelee Reserve, some 800 Km from his traditional home, is a target for German/Japanese uranium mining companies.

Joan Wingfield, a Kokotha Aboriginal from South Australia, also attending the meeting, put forward her peoples position:

The Australian Government, mining companies and their shareholders are guilty of denying Aboriginal people their human rights. There is no need for nuclear energy and weapons. We have proved it by living in harmony with nature since time began.

The West German tour was organised by the 150,000 member strong Association for Environment and Nature Conservation (BUND), and the Society for Endangered Peoples. The tour was sponsored by a broad coalition of international indiginous peoples' environmental, church and anti-nuclear groups.

About 30 public meetings were scheduled. Official receptions by the Lord Mayors of Frieburg, West Germany, and the Government of the City of Basul, Switzerland, have taken place as has a meeting with the Chairperson of the Environmental Committee of the European Parliament. A reception by the Lord Mayors of Cologne, Nurenberg and Osnabrueck are also planned.

Cold Comfort

Open Channel Co-operative, Community Education Publication Association and Informotion have produced a video outlining Australia's role in the nuclear cycle. The video entitled *Cold Comfort* is designed for schools and is available through the Australian Film Institute, 47 Little Latrobe St, Melbourne, 3000, phone (03) 662-1944. For an outline of the video's content see the review in this edition of *Chain Reaction*.

The Earth Needs Friends

Who are Friends of the Earth? Described by the Australian Journal of Mining as a 'pre-terrorist group', FOE is actually a community based activist organisation which encourages a better understanding of our environment. We promote the restoration, conservation and rational use of the Earth's resources through public education and direct action, by providing positive alternatives and encouraging people to influence those making decisions affecting the environment.

Friends of the Earth are active in a variety of campaigns in a number of states. In South Australia FOE Willunga has been campaigning to save and protect the Aldinga Reef and associated wetlands. These are under threat from a proposed marina. Energy issues also figure in the activities of this group. In nearby Williamstown another FOE group is set up working on similar issues.

The FOE group in Adelaide has slowed its activities in recent times but FOE activists in Adelaide have set up an alternative to 'Fast Food' with 'Slow Food'. The Whole Food Cafe is at 128 Henley Beach Road Torrensville.

In Victoria, FOE Collingwood has become FOE Fitzroy and continued on with its anti-uranium mining, recycling, hazardous chemicals and soft energy campaigns as well as its bookshop and whole foods co-operative. A resource centre for community use is presently being set up. In the same building is the Organic Fruit and Vegetable Co-operative which sells and promotes organic fruit and vegetables, making the building at 222 Brunswick St perfect for one stop shopping. FOE Oakleigh is a small community group in the South-Eastern suburbs of Melbourne. It is a forum for local people who are concerned about their environment.

FOE Sydney also have an extensive resource centre and are actively campaigning on a number of issues including nuclear energy and energy issues, food irradiation, pollution and chemical wastes. FOE Newtown are gathering information about uranium mining and in particular are keeping an eye on Ranger and Kakadu through liaising with the Supervising Scientists office. They are also interested in other nuclear issues such as food irradiation and low level radiation. In the Blue Mountains another FOE group has been formed which deals mainly with local development issues.

Friends of the Earth is a community based organisation. FOE tries to make it possible for people to be involved in the decisions that affect them by making it possible for people to make informed decisions on issues. This means gathering information and getting it to people so that they can act upon it. It means opening up avenues for people to say what they think and need. It is not people lobbying on the behalf of a silent membership. It requires active participation.

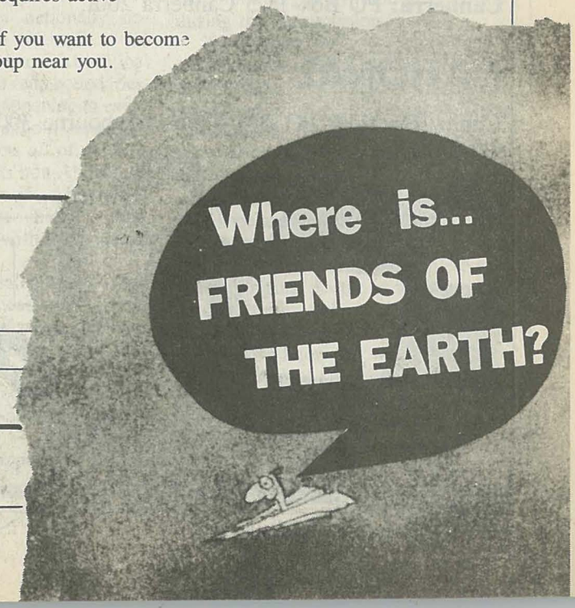
FOE's success depends on people becoming involved. If you want to become involved fill in the form below and send it to the FOE group near you.

Please send me information about the activities of Friends of the Earth.

My name is _____

and I live at _____

Postcode _____



HERE

VICTORIA

Fitzroy: 222 Brunswick St Fitzroy 3065, Phone (03) 419-8700
Oakleigh: 69 Waratah St South Oakleigh 3166.
Organic Fruit and Vegetable Co-op: 222 Brunswick St Fitzroy 3065, Phone (03) 419-9926

SOUTH AUSTRALIA

Adelaide: 120 Wakefield St Adelaide 5000.
Willunga: PO Box 438 Willunga 5172.
Williamstown: c/- Post Office, Williamstown SA 5351

NEW SOUTH WALES

Blue Mountains: 156 Megalong St, Leura 2780
Newtown: PO Box 169 Newtown 2042, Phone (02) 517-2139, Membership enquiries through FOE Sydney.
Sydney: PO Box 474A Sydney 2001, Phone (02) 211-3953

AUSTRALIAN CAPITAL TERRITORY

Canberra: PO Box 1875 Canberra 2601.

NATIONAL

Chain Reaction: PO Box 530E, Melbourne 3001, Phone (03) 419-8700

A CHALLENGE...

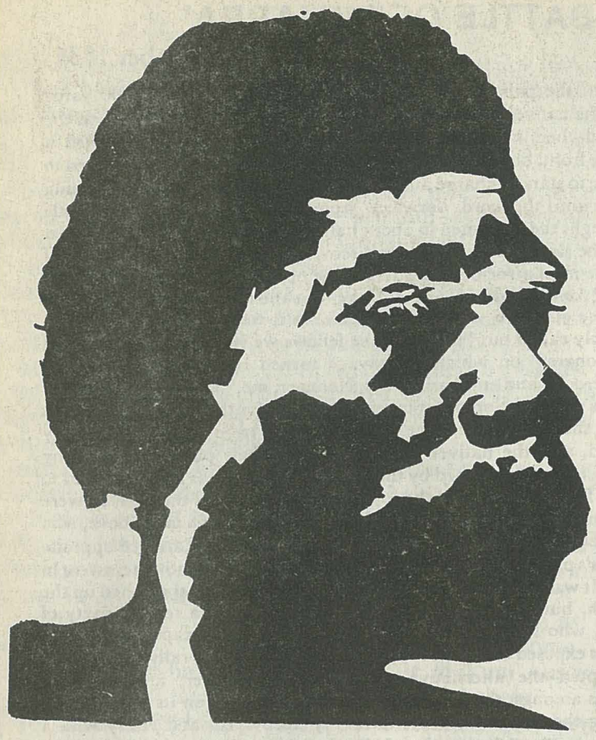
Friends of the Earth
Fitzroy
needs an

Anti-Uranium Campaign
Co-ordinator
to work with the
anti-uranium collective
on campaigns, to do
general administrative
work and fundraising

* 3 Days per week *
TERMS AND HOURS NEGOTIABL

For more information call
(03) 419 8700
or call in at
222 Brunswick St Fitzroy

APPLICATIONS CLOSE
JUNE 24 1988



Black Deaths in Custody

On 27 January 1988 the Federal Royal Commission into Black Deaths in Custody began in Adelaide. The Commission is the result of a four year campaign by the Committee to Defend Black Rights and others to bring attention to the plight of Aborigines when in custody and the treatment they receive at the hands of the police.

***Helen Corbett*, chairperson of the Stop Black Deaths in Custody Campaign, spoke at a vigil and rally at Long Bay Gaol and at La Perouse in Sydney on the same day, telling of the history of the Royal Commission and its importance to the Aboriginal fight for justice.**

As Aboriginal people we have been active in campaigning for looking at white justice and putting white justice on trial and fighting for a Royal Commission into Aboriginal deaths in custody . . . We've achieved it through a nationally co-ordinated campaign because, as Aboriginal people, we know Aboriginal deaths in custody has no state boundaries. It is something that is happening to every Aboriginal family throughout Australia. It is an issue that affects all of us. It is also an issue that affects non-Aboriginal Australians because if Aboriginal Australians don't get justice, non-Aboriginal Australians will get no justice as well.

Many people felt really happy when the Government announced that they will hold the Royal Commission and they thought finally that things would sort themselves out, and we'd be able to examine what happened and how our relatives died. But let's not kid ourselves and fool ourselves — the Royal Commission hasn't stopped our people from dying in custody. There's been four Aboriginal men die in custody since the announcement to hold the Royal Commission. There'll be no guarantees that other people will not die in custody during the Commission.

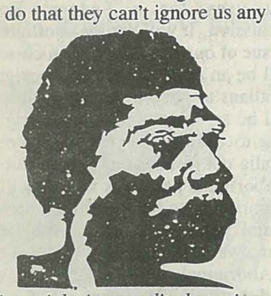
You might say — why did we campaign for a Royal Commission if we don't have too much faith in it? There are many uses for a Federal Royal Commission. It will put the spotlight on the issue of our people dying in custody. It will be an opportunity for Aboriginal Australians to put white justice on trial. It will be an opportunity for Aboriginal people to change the justice system in Australia not just for our people but for non-Aboriginal people as well. It will be an opportunity to look at things such as custodial practices and, as Aboriginal women, we know too well that a lot of our Aboriginal women are sexually abused in prison. There are not as many deaths of Aboriginal women in prisons as there are of our men but there's certainly a lot of horrific things that are occurring

to our women in prisons.

We've had a National Conference in November 1987. There was approximately 80 Aboriginal families there who had a relative die in custody. They put across 39 demands to the Royal Commissioner, Judge Muirhead, and also to the Federal Government about their approach to the Commission. The success story of the families' demands is in the definition of a death in custody. The police have queried some of the cases they've listed.

Just in the last hearing of the Commission they included Binny Simpson as one of the cases to be heard. Binny Simpson was sitting in the pub at Mullawa in the north west of Western Australia and the publican, who was an ex-cop, had his hand around Binny's throat and as a result Binny died. Now the Royal Commission has recognised that as a death in custody and that's a victory for us because many of the cases that we have on our list are similar cases. We have evidence where some of our people have been last seen alive in a police car driving outside the edge of town and found dead a couple of hours later. So, we've got evidence of people last seen alive by police and found in waste disposal bins later on, or on empty beaches. And those are the sorts of cases that the families want to be heard and they don't fit into the classification of what the police say is a death in custody. So by having Binny Simpson's case on the list is another victory for those Aboriginal families who have assisted in the campaign to make sure that justice is seen.

We want the whole world to know what's going on. That's why it's important for us to keep the pressure on non-Aboriginal Australia, and show that we want justice, and that we're going to fight for it and continue to fight for it. And if we do that they can't ignore us any more.



This article is an edited version of the speech given by Helen Corbett in Sydney on 27 January 1988 and was transcribed by Tom Worsnop.

'THE BATTLE OF PINJARRA'

28 October 1834

The instant the police were observed approaching at about 200 yards distance, the natives, to the number of about 70, started on their feet, the men seized their numerous and recently made spears, and shewed a formidable front; but finding their visitors still approached, they seemed to feel unable to stand a charge and sullenly retreated, gradually quickening their pace until the word "forward" from the leader of the gallant little party brought the horsemen in about half a minute dashing into the midst of them, the same moment having discovered the well known features of some of the most atrocious offenders of the obnoxious tribe. One of these, celebrated for his audacity and outrage, was the first to be recognised, at the distance of 5 or 6 yards from Mr Norcott, who knew him well, and immediately called out "these are the fellows we want, for here's the old rascal Nöonarr;" on which the savage turned round and cried, with peculiar ferocity and emphasis, "Yes, Nöonarr, me," and was in the act of hurling his spear at Norcott in token of requital for the recognition, when the latter shot him dead. The identity of the tribe being now clearly established, and the natives turning to assail their pursuers, the firing continued, and was returned by the former with spears as they retreated to the river. The first shot, and the loud shouts and yells of the natives, were sufficient signal to the party who had halted a quarter of a mile above, who immediately followed Sir James Stirling at full speed and arrived opposite Capt. Ellis's party just as some of the natives had crossed and others were in the river. It was just the critical moment for them. Five or six rushed up the right bank, but were utterly confounded at meeting a second party of assailants, who immediately drove back those who escaped the firing. Being thus exposed to a cross fire, and having no time to rally their forces, they adopted the alternative of taking to the river, and secreting themselves amongst the roots and branches and holes on its banks, or by immersing themselves with the face only uncovered, and ready with a spear under water to take advantage of any one who approached within reach. Those who were sufficiently hardy or desperate to expose themselves on the offensive, or to attempt breaking through the assailants, were soon cleared off, and the remainder were gradually picked out of their concealment by the cross fire from both banks, until between 25 and 30 were left dead on the field and in the river. The others had either escaped up and down the river, or had secreted themselves too closely to be discovered except in the persons of eight women and some children, who emerged from their hiding-places (where in fact the poor creatures were not concealed) on being assured of personal safety, and were detained prisoners until the termination of the fray. It is however very probable that more men were killed in the river, and floated down with the stream. Notwithstanding the care which was taken not to injure the women during the skirmish, it cannot appear surprising that one and several children were killed, and one woman amongst the prisoners had received a ball through the thigh. On finding the women were spared, and understanding the orders repeatedly issued to that effect, many of the men cried out *they* were of the other sex, – but evidence to the contrary was too strong to admit the plea.

As it appeared by this time that sufficient punishment had been inflicted on this warlike and sanguinary tribe by the destruction of about half its male population, and amongst whom were recognised, on personal examination, 15 very old and desperate offenders, the bugle sounded to cease firing, and the divided party reassembled at the ford, where the baggage had been left in charge of four soldiers, who were also to maintain the post.

– *Perth Gazette*, 1 November 1834

We lost our son in March 1986 at the Glenorchy lock-ups. He was twenty-three years of age. We, along with our family and friends, are still plagued with disbelief. We cannot accept the fact of this tragedy and it's possible we never will.

We recently returned from Adelaide where we attended the second National Conference of Families of Victims of Aboriginal and Torres Strait Islander Deaths in Polce and Prison Custody. This conference was organised by the Committee to Defend Black Rights (CDBR) and was held at Port Noarlunga. We also attended the first conference at North Richmond, NSW, in Novemeber 1987.

At Port Noarlunga we were accompanied by CDBR and sixty families of those who had died in custody. Another thirty or more families could not make it, mainly due to lack of funds for transport.

After this week long conference we feel that we have become a much stronger force. We held week long discussions on all items on the agenda. We finally compiled several submissions. Some were lodged with the Federal Government and others with the Royal Commission now sitting in Adelaide.

During our discussions, all decisions were made as one united voice. The emotional atmosphere at some meetings would have had the most fair dinkum Aussies at least shed some tears if they had witnessed them.

We all hold high respect for our ancestors, and have become more determined in our fight for satisfaction, recognition, self-determination and justice. We can only hope now for some satisfactory reply to these submissions.

A great impact on us now is the fact that three more deaths in custody occured in eight days around the conference. We hug one another each time we hear of one of these traumas and ask will it go on? Who will be next? When will the appropiate authorities accept our pleas in proper understanding?

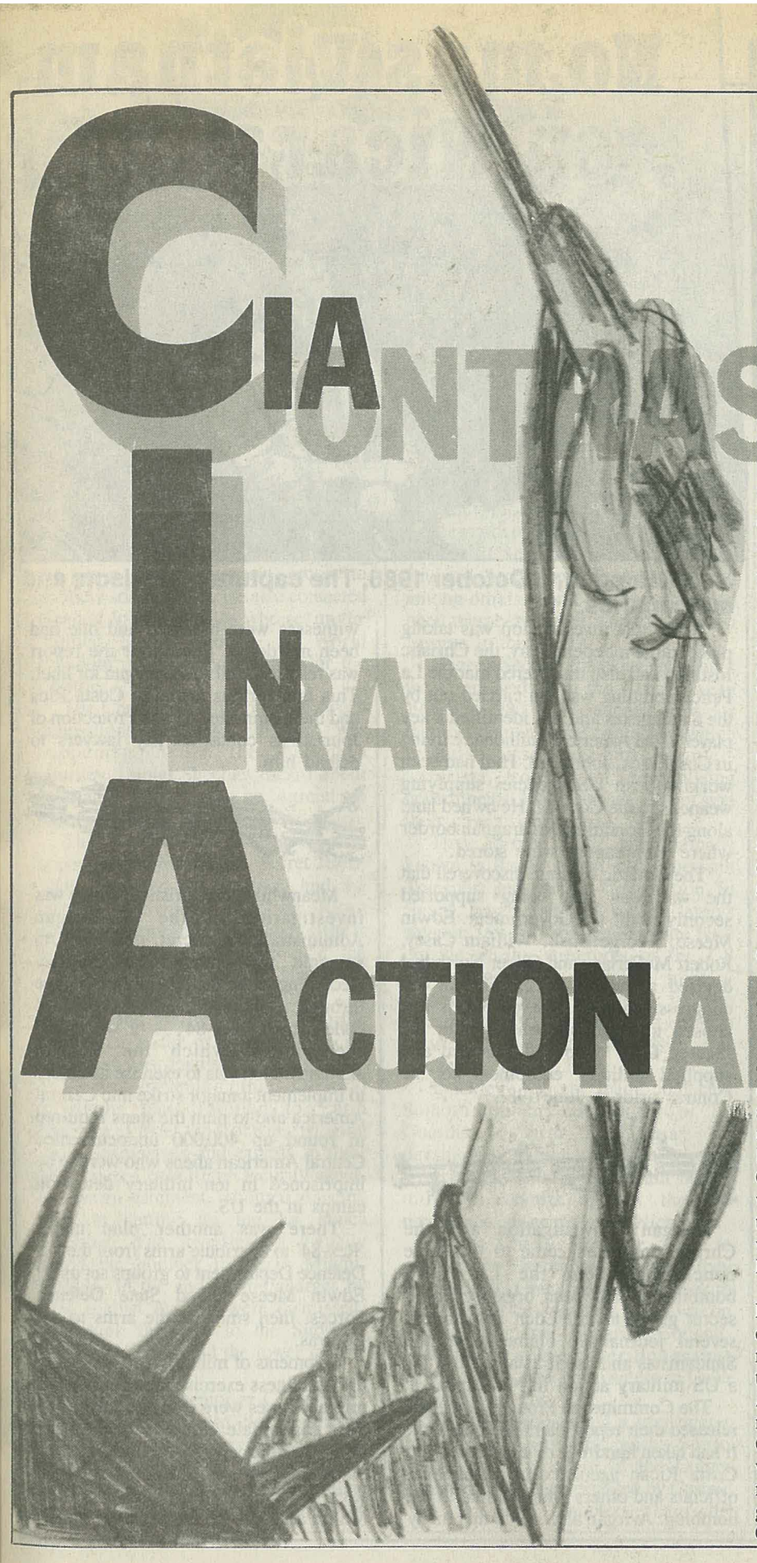
Having sat in the Royal Commission hearing of Kingsley Dixon for one and a half days we learned that we are fighting uphill all the way. The much prolonged debates on drugs, alcohol and suicide made us feel sick with despair.

I myself stated at one stage of the conference 'Why don't we put all this aside in desperation and give all our support to Mike Mansell, Len Culbong, Allan Cambell and the rest of the delegation to Libya'. If money was forthcoming from Libya or any other country to assist us in our plight — 'Why not?' We would then feel some relief and be enabled to do some of the things we want to do.

My wife and I are both Tasmanian Aboriginal descendants and proud of it. I stated in the press recently that I would visit Libya (if possible). That still stands. I just wish a lot more Australians could try to understand how we feel.

Athol Smith

CIA IN IRAN CONTRAS ACTION



The Iran-Contragate scandal has put the spotlight on secret CIA support for the Contra rebels, even after the US Congress had expressly forbidden this, secret arms sales and hostage deals with Iran were negotiated. But the public does not know the full extent of the scandal. An illusion has been carefully nurtured — that these illegal operations were a recent phenomenon and that Oliver North and John Poindexter were solely responsible. *Martin Peake* reports.

The covert CIA operations that make up the Iran-Contragate scandal started in 1959 when Vice President Richard Nixon set up a 'secret team' to conduct assassinations and coups against left-wing governments world-wide. When President Carter forced the team leaders to resign from the CIA, Pentagon and army in the late 1970's they continued their work outside the CIA, relying on embezzled profits from drug smuggling and US weapons sales for funding.

This group with its Mafia connections smuggled heroin from South-East Asia during the Vietnam war. Its leaders played a part in events, from the Bay of Pigs invasion of Cuba to the sacking of the Whitlam Government, from Watergate to Contragate.

In his latest book, *Veil: the Secret Wars of the CIA*, Bob Woodward identifies the key players in the Contra war. In June 1981, Preseident Reagan signed a classified directive authorising the CIA to finance and train the Contras and supply them with arms. This decision was made by White House staff, Edwin Meese, Richard Allen, William Casey, George Bush and Ronald Reagan. But who were the networks who implemented this policy? The Contra war had been waged since 1979, two years before Reagan financed them.

During the Senate hearings into the Iran-Contragate scandal, it was established that a team of senior ex-CIA, military and Pentagon officials had set up the Contra war early in 1978 with Anastsio Somoza. Operating from neighbouring Honduras, these bands of Contra rebels would strike out and attack villages, disrupt power supplies, mine roads, assassinate local officials and generally try to destabilise the Sandanista Government.

No más Vietnam en Nicaragua

Vietnam 20 September 1965

Reagan's administration funded the Contras openly between 1981 and 1984, when the US Congress formally barred any 'direct or indirect' aid under the Bolland Amendment (after the CIA was found to mining ports in Nicaragua and giving out assassination manuals to the Contras). The ban was lifted in 1986 but reintroduced this year.

From 1979 to 1981 the Contras had been funded by the 'Secret Team' — the same men who supplied them with arms in 1984-86.

. . . Nicaragua, 6 October 1986. The capture of advisors and mercenaries.

In December 1987 the Christic Institute, a public religious law firm, filed a law suit against the team under the United States Neutrality Act, for illegally funding the Contras. The Institute worked closely with a free-lance journalist, Tony Avirgan, who stumbled into the action in 1984 at a press conference called by the rebel Contra leader, Eden Pastora, in La Penca, Nicaragua, where a bomb exploded killing eleven people, four of them journalists.

Pastora had planned to denounce another Contra leader, Adolfo Calero, and his FDN Contra organisation. He was furious that the CIA was trying to destroy his own independent anti-Sandanista force based in Costa Rica.

Avirgan survived the blast but spent six months recovering. He then contacted the Committee to Protect Journalists and the subsequent investigation lasted eighteen months. At the time of the La Penca bombing, news releases blamed the Sandanistas. However the Committee identified the people they believed were involved — in fact they even discovered who the bomber was — a right wing Iranian, trained by Chilean dictator Pinochet's dreaded military police. His name was Amac Galil.

While this investigation was taking place, quite independently, the Christic Institute had also discovered that the La Penca bombing was not carried out by the Sandanistas and had identified a key player — an American millionaire living in Costa Rica, John Hull. Hull had been working with US agencies supplying weapons to the Contras. He owned land along the Honduran/Nicaraguan border where the weapons were stored.

The Christic Institute discovered that the war was still being supported secretly by the US Government. Edwin Meese, George Bush, William Casey, Robert McFarlane and Oliver North had devised a method to circumvent the congressional ban. Oliver North was chosen to establish contact with the 'Secret Team' who had financed and supplied military equipment to the Contras prior to June 1981.

Avirgan's investigation and the Christic Institute's came to the same conclusion about the La Penca bombing. It had been organised by a secret group to kill Eden Pastora and several journalists, blame it on the Sandanistas and use it as an excuse for a US military action in Nicaragua.

The Committee to Protect Journalists released their report blaming John Hull. It had taken hundreds of interviews with Costa Rican agents, drug smugglers, officials and others who assisted in the bombing. Avirgan also stated that many witnesses were harassed and one had been murdered. Soon after the report was released Hull sued Avirgan for libel. This is a serious crime in Costa Rica and the Committee for the Protection of Journalists contacted key lawyers to defend him.

Meanwhile, the Christic Institute was investigating the Reagan Administration's secret operation to smuggle weapons to the Contras. According to the Institute, this was done through a national readiness exercise code-named 'Rex-84', — a war game scenario in which the Reagan Administration was to exercise its ability to implement a major strike into Central America and to plan the steps required to round up 400,000 undocumented Central American aliens who were to be imprisoned in ten military detention camps in the US.

There was another plan under 'Rex-84' to distribute arms from the US Defence Department to groups set up by Edwin Meese called State Defence Forces, then smuggle the arms to the Contras.

Shipments of military hardware from the 'readiness exercise' and from other military bases were smuggled from the Fort Landerdale Hollywood Air Base down to Illopango Air Base in El Salvador, then shipped down to Costa Rica to John Hull's ranch, between March and May of 1984. Oliver North could not supervise the operation directly after 1984 so this was done by a private citizen, Rob Owen.

Owen, who worked for a public relations firm in Washington DC, also set up a Contra support group to publicly solicit funds. He also contacted General John Singlaubs who set up the 'United States Council on World Freedom' to raise more funds for the Contras.

The Christic Institute needed sworn depositions to prove all this was happening. When the Institute's attorney, Daniel Sheehan, heard about Avirgan's libal case, he agreed to represent him in the trial in Costa Rica.

The Institute saw the case as an opportunity to expose this 'Secret Team'. They disclosed the bombing and the insider involvment of Costa Rican agents working against their governments interests on behalf of the CIA. According to Avirgan, 'The judges eyes kept opening with amazement . . . Soldiers and the media came into the courtroom as the extraordinary secret operation was detailed'.

It was revealed that General Singlaubs had travelled to Latin America to meet the Contras, bringing plastic explosives and experts in their use. An ex-Costa Rican security agent, in a sworn statement, admitted assisting Hull in setting up the La Penca bombing. The investigators actually found the bomber living in Miami, Florida. In the end all the charges by Hull against Avirgan were dismissed. Hull took the case to the Supreme Court, which upheld the lower court's decision.

At this point a senior ex-CIA officer, who did not want to be identified, contacted the Christic Institute with crucial information about those responsible for covert operations, including the Bay of Pigs, operations in Vietnam, Chile, Australia, Iran and Nicaragua. The leader was Theodore Shackley, his assistant, Thomas Clines. Other members included Albert Hakim, Raphael Chi Chi Quintero, General Richard Secord and Eric Von Arbod among others. Some of these men had been members of the Anti-Communist League in the 1950's.

General Secord, Shackley and Clines were removed from the CIA between 1976 and 1980 by President Carter, for their conduct in secret operations which included assassinations, counter-terrorism, coups and destabilising governments. However they did not stop their covert operations

They formed a private company known as the Egyptian and American Transport and Service Corporation, in Egypt, where the CIA has its largest weapon stores. From this private base outside of the structures of the US Government, they supplied military equipment and finances to the Nicaraguan dictator Anastasio Somoza between 1978 and 1981 and again after the Senate ban in 1984.

Shackley's 'Secret Team' contacted Somoza's military commanders or 'La Guardia' to form the Contras. He persuaded them to form a new government in exile that could mount military assaults against the US recognised government in Nicaragua.

As the Christic Institute began to research the 'Secret Teams' history they learned that it went all the way back to 1959 when Vice-President Nixon was on the US National Security Council. Nixon set up a covert operation against Fidel Castro's new government in Cuba called 'Operation 40'.

In 1960 Nixon called a very secret meeting in Florida with Santo Trafficante, the leader of the Cuban Mafia who had been expelled by Castro. They set up a 'Shooters Team'who would assist with 'Operation 40' by assassinating leaders such as Fidel and Raul Castro and Che Guevara.

Trafficante was to train the hit men, who included Felix Rodriguez and Luis Pasada Karillo, who were recently discovered commanding the Illapango base from which weapons were sent to the Contras. Others in the team included Raphael Chi Chi Quintero, Rolando Martinez and Frank Sturgis. Quintero and Sturgis were caught during the Watergate break-in, working for Nixon to protect the 'Shooters Team'.

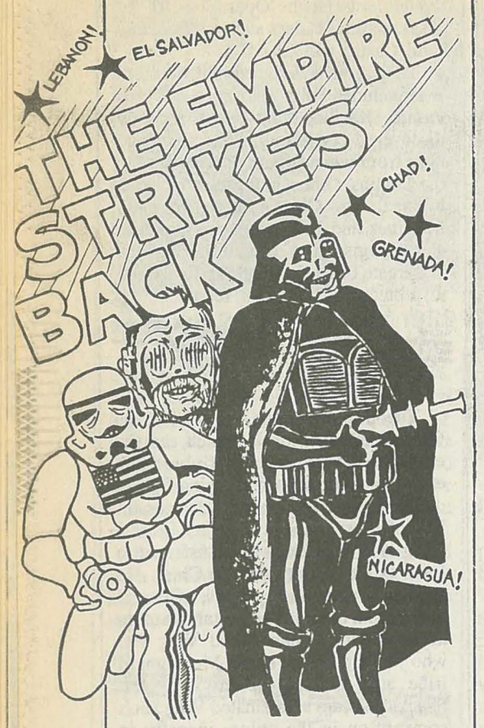
Theodore Shackley was chief of the CIA station in Florida which ran the entire covert war against Cuba using exiles from the ultra-right wing Batista dictatorship to launch the unsuccessful Bay of Pigs invasion.

In 1965 Shackley was transferred to Laos as the Deputy Station Chief. He brought with him Clines, General Secord and others. They established an alliance with a man called Vang Pao who was the Prince of the Montagnard tribe and a major opium smuggler. Shackley's team assassinated Vang Pao's competition in the opium industry in Laos allowing Vang Pao, by 1966, to rise to monopoly control.

In return, Vang Pao helped fund the assassination team. Shackley's operation was formalised in 1966. It was called the Military Assistance Group/Special Operation Group (MAG-SOG) or Joint Task Force for unconventional war. General John Singlaub supervised the assassinations. One of the young officers in Laos involved in the program was Oliver North.

They assassinated 100,000 non-combatant village mayors, book-keepers, teachers, clerks and other civilian bureaucrats in Laos, Cambodia and Thailand who were thought to be communists or potential communists.

During this time the ex-Cuban Mafia boss Santo Trafficante came to Laos to join the team and met with Vang Pao. By 1969 he had become the number one importer of China White heroin into the US. An army investigation later found that the bodies of US soldiers killed in Vietnam were being cut open, gutted and then filled with heroin before being flown back to the US. Special codes on the body bags enabled those receiving the heroin to identify the drug filled corpses.



Shackley was transferred to Vietnam as Chief of Station in 1969 where he and William Colby, former CIA director, set up the infamous 'Phoenix' program which carried out political assassinations of some 60,000 South Vietnamese civilians from 1969 to 1975. Shackley later ran operations against President Allende's socialist government in Chile and in 1973 returned to directing operations in the Far East, including Australia.

When the Whitlam Government won office in 1972, Shackley was seriously concerned. It was said he ordered the flow of CIA information to ASIO to be cut, but later rescinded the order. He did not want it known in Australia that the spy base at Pine Gap was run by the CIA — especially as the Pine Gap lease was due to be renewed in 1975 and could be revoked.

Shackley was worried that the 'delicate security and intelligence arrangements between the CIA and ASIO' would be breached. The Attorney-General. Lionel Murphy's raid on ASIO headquarters in 1973 did not help and soon afterwards Whitlam accused the CIA of funding the Liberal-National Party coalition.

Two days before the Whitlam Government was sacked Shackley sent an ultimatum to Frank Mahoney, acting director of ASIO, on security at Pine Gap:

> Is there a change of policy in this field? This should be regarded as an official demarche on a service to service link . . . The CIA feels everything possible has been done on a diplomatic basis nad now on an intelligence liaison link. They feel that if this problem cannot be solved they do not see how our mutually beneficial relationships are going to continue . . .

Mahoney sent this ominous telex on to Whitlam but it lay unopened on his desk, forgotten in the turmoil of the sacking.

By 1973 the 'Secret Team' realised that the Vietnam war would be lost and began diverting money from the opium trade and sales of stolen US army weapons to secret accounts in Australia. General Secord and Clines smuggled out suitcases of money to be deposited in the Nugan Hand Bank which they had helped set up in Australia. This was the base from which the 'Secret Team' moved finances from Vietnam to Iran. (After the collapse of the Nugan Hand Bank it was Clines who met Michael Hand at the airport in Australia to supervise his escape.)

By 1976 Shackley was Associate Director of the CIA and was in charge of assassinations of the Shah of Iran's enemies. Another member of the team, Edwin Wilson, was used as a go-between with Lybia, supplying explosives in exchange for information about terrorists trained in Lybia and sent to Iran, Latin America and the Philippines. Edwin wilson is now serving a 50 year gaol sentence in Illinois for the part he played.

Shackley tried to give his operation the tone of an anti-terrorist rather than an anti-communist program. Quintero would eliminate the left-wing trainees when they reached their destinations. The assassinations were authorised by William Buckley (later taken hostage in Lebanon).

Between 1976 and 1980, General Secord and Eric Von Arbod were running the US Foreign Military Sales Program in the Middle East. Von Arbod was a former 'Operation 40' member and was also involved in 'Operation Phoenix' in Vietnam.

Being responsible for Foreign Military Sales, they were asking the Pentagon to provide weapons to the Middle East countries at manufacturers cost, but they were selling the weapons for their much higher replacement cost. The difference skimmed off by Secord and Harkim and sent down to the Nugan Hand Bank in Australia. Several corporations were set up around the world, in Switzerland, the US, Central America etc., to launder the money.

The 'Secret Team' made the Contra connection in April 1978, sending Edwin Wilson to offer its services to the former Nicararguan dictator Somoza: five trained assassins at a price of $US80,000 a year plus $US250,000 expenses.

When Reagan, Edwin Meese, William Casey, Robert McFarlane, John Poindexter and Oliver North decided, in 1985, to undertake the secret sale of arms to Iran — it was again this 'Secret Team' to whom they went.

The La Penca bombing investigations have opened up a can of worms for the Reagan Administration. This 'Secret Team' still operates outside the CIA being funded by General Richard Secord. The assassination operations are run by Raphael Chi Chi Quintero and the men responsible for the operations are Theodore Shackley and Thomas Clines. The Christic Institute case is currently being heard in Miami, Florida.

This article is an edited version of a more detailed paper which discusses the involvement of the CIA in greater detail. Copies are available by writing to Chain Reaction, PO Box 530E, Melbourne 3001, or by phoning (03) 419 8700.

Martin Peake is with the Peace Education Unit of the Victorian Education Department.

TOO HOT TO HANDLE.

We hear daily reports about chemicals: contamination of food, accidents involving chemicals, people with chemical sensitivities, and links between chemicals and cancer. Many of these reports relate to the vast range of synthetic chemicals which are now part of our daily lives.

These new chemicals are now the basis of a huge range of industrial processes, and also are a major source of industrial wastes.

Some of these chemicals and their wastes are so dangerous that no acceptable disposal method exists and currently they must be securely stored. However huge quantities of this category of chemicals are already circulating in the environment and despite their potential to harm or kill humans in many cases they are still being produced.

We face a very difficult decision. We can either attempt to deal with the wastes from industrial sources or we can reduce the wastes at their source.

This decision has many implications. Can we continue to support a system which has produced substances which can be found in every living thing after only a few decades of their production? Can we accept the trade-off between reducing pollution thereby making the world a safer place to live and the loss of some industrial processes which produce many consumer goods?

There is no simple or single solution. The complex chemical world provides complex problems and we, as consumers of chemicals, are often not aware of the dangerous products and processes which provide us with the paraphernalia of modern society.

We must reduce the amount of chemical pollution which confronts us to a greater or lesser degree everywhere on this planet. And reduction must start at the source — we must not produce problems which we cannot handle.

This booklet has been produced to start to point out the size and nature of the problem and some possible directions for confronting the difficulties posed by the chemical industry. It is a problem so huge that even if all production of synthetic chemicals were to cease tomorrow, the residue problems would continue for decades, possibly even for hundreds of years.

A start on the reduction of chemical pollution will immediately make the world a better place to live and it is a task which must be shared by industries, governments, groups and individuals. This publication attempts to provide information and encouragement for that campaign.

OUR CHEMICAL ENVIRONMENT

Our environment can be described in terms of chemicals. Chemicals in air, water and food are essential to our survival. Our bodies have highly developed complex chemical processes which enable us to live in this environment. But chemicals become a problem when they are in the wrong place in the wrong amount, or when they are produced synthetically and our bodies and the environment have never encountered them before.

Until 1828, chemists thought that organic compounds were natural substances that could not be duplicated in the laboratory. But in that year, a German scientist called Wohler found by accident that synthetic urea could be produced from the elements of carbon, oxygen, hydrogen and nitrogen.

Chemists began to study the way carbon atoms and other atoms are held together. They learned to make many natural products in the laboratory and then began to make new synthetic substances in the branch of science which became known as organic chemistry.

The use of synthetic chemicals was accelerated by the world wars of the 20th century as resources were poured into research and development to find new sources of strategic materials or to discover new materials for military use. The largest of these research projects led to the development of nuclear weapons, but there were also discoveries in the areas of pharmaceuticals, fuels, explosives, plastics and other building materials. The war efforts resulted in discoveries made in laboratories being adapted for mass production. Other uses were found for these synthetic chemicals after the wars. For example some pesticides were discovered in nerve gas research after WWI, and the raw material for explosives, acetone, became widely used for rayon and other synthetic fibres.[1]

After WWII, the chemical industry took off and thousands of products utilising new compounds were produced. Billions of tonnes of these new materials were put into use. Chemical companies urged consumers to enjoy a 'better life through chemistry' and people were encouraged to accept a whole range of new products, to the extent that many of the things which are now part of our daily lives didn't exist in their current form forty years ago. One example is the synthetic detergents and washing powders which replaced soap as the major household washing product in the 1940s and 1950s. These new products were derived from the petrochemical industry and generally contained alkyl benzene.

Confidence in science and technology was shaken in 1962 when Rachel Carson's book *Silent Spring* alerted the public to the fact that DDT, one of the new compounds widely marketed during the 1940s and the symbol of human triumph over the insect world, could be found in organisms everywhere in the world. People began to question the consequences and implications of a 'better life through chemistry' as they became aware of the multiple impact of chemicals on human health, and on air, water, land and food quality.

It became obvious that exposure to some of these substances or products could cause adverse health effects ranging from eczema and respiratory disease to miscarriages, foetal anomalies, and cancers of many types. Medical and environmental scientists now estimate that as many as 90 per cent of human cancers are caused or exacerbated by exposure to hazardous substances.[2]

The wide range of industries using or producing hazardous materials suggests the dimensions of the problem. Hazardous substances are used or generated in the manufacture of pesticides, petrochemicals, plastics, paints, and pharmaceuticals, as well as in electroplating, metallurgy and mining processes. These hazardous chemicals can enter the environment in a number of ways: intentional (eg pesticide applications), incidental (airborne emissions from factories) and accidental (spills and leaks). The sources and means of environmental contamination are so varied that the impact is pervasive: air, soil and water are affected. Once released hazardous materials can be taken in by organisms and passed on in the food chain. Frequently the source and extent of exposure and the effects on humans, animals and ecosystems are difficult to identify or prove. Not all chemical contamination is spectacular but nonetheless we all face daily contact with dangerous substances which could have greater or lesser effects on our health depending on the amount and length of contact and our own biology.

For example exposure can come from:

- the home — household cleaning products, residues in synthetic fibres, fumes from paints, insecticides;
- food — pesticide residues, hormones and chemicals that the animal has been exposed to and food additives;
- the workplace — solvents, chemicals associated with photocopiers and other office equipment;
- the street/air — car fumes and petrol vapors, emissions from factories.

Women's Weekly 26 Jan 1946

Organic Chemistry

Organic chemicals are those containing carbon. Chemicals without carbon, such as metals, sodium chloride (salt) and ammonia are called inorganic. Carbon readily links with itself to form chains and rings in an impressive variety of organic chemical compounds. Carbon also has the capacity to bind in almost endless combinations with other elements such as oxygen, hydrogen, nitrogen and chlorine. In recent decades, scientists have learned to exploit the properties of carbon not only to recreate chemicals found in nature, but also to create entirely new chemicals not found naturally. It is because the organic chemical industry is the source of synthetic chemicals that it receives so much attention.

"Over seven million chemicals have been synthesised in laboratories — 75,000 are used in commercially significant quantities . . . 1,000 new chemicals are brought into the market each year."

The major function of the organic chemical industry is the transformation of raw materials from petroleum and natural gas production into the thousands of organic chemical products available today. This is why it is also sometimes known as the petrochemical industry.

Industrially produced organic chemicals have come to play a role in all other industrial operations. The production of organic chemicals is necessary for — and is often the major component of — pharmaceutical products, cosmetics, plastics, food additives, photographic film, clothing, agricultural chemicals, construction materials and automotive materials. Materials which are not themselves part of the organic chemical industry — steel, glass, paper, wood, concrete, ceramics — all rely on organic chemicals for their manufacture.

Substances found in nature are fabricated, extruded and moulded as they move through the industrial world to the consumer. But only manufactured chemicals are fundamentally transformed to different substances during the course of their industrial lifecycles. The skill of industrial chemists in customising these transformations to produce materials with 'desirable' properties has enabled the organic chemical industry to virtually re-shape the face of modern society with an abundance of synthetic materials, many of which were never available before. This also means that people are often completely unaware of the substances used to produce these synthetic products or the substances within the final product.

Organic chemicals are found in virtually every facet of daily life. More than fifty per cent of textiles produced annually in Australia are synthetic chemicals like polyester and nylon. From one to eight per cent of the weight of clothing is the organic chemical dye used to give the fabric its color. Whether synthetic or natural, all fabrics are treated with a wide variety of organic chemicals to impart properties such as flame resistance, anti-static behaviour and colorfasting.

Despite the size and influence of the chemical industry its dominance is almost imperceptible. Its growth has been enormous. In the United States alone, annual production of synthetic organic chemicals rose 15 fold between 1945 and 1985, from 6.7 million metric tons to 102 million tons, while global production increased nearly 36 fold during the same period from 7 million tons to 250 million tons.[3]

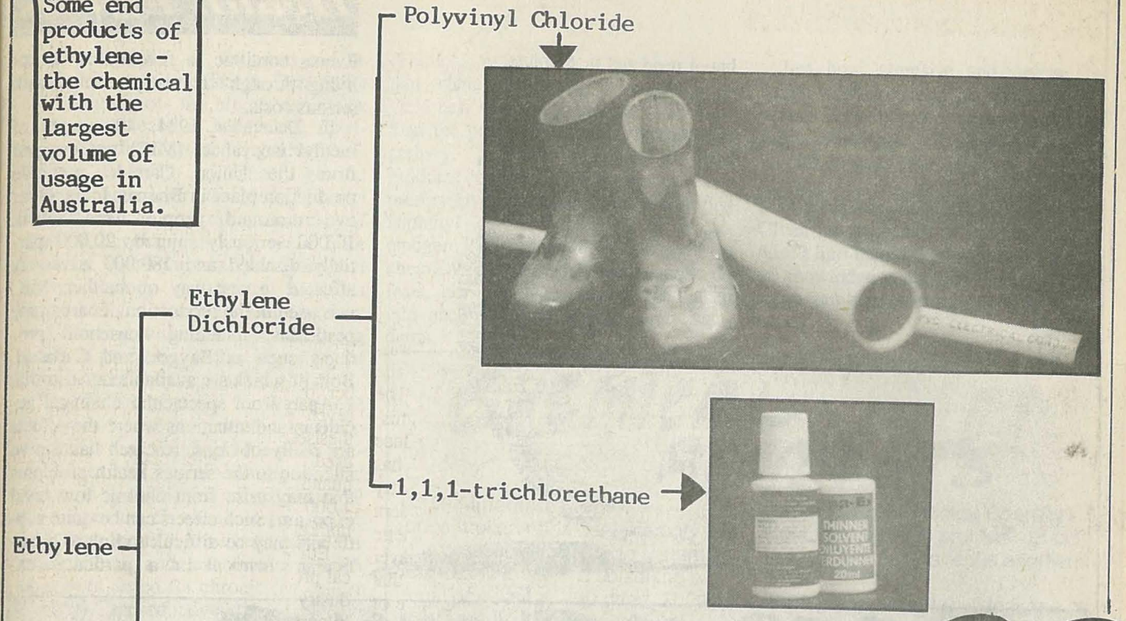
Unlike many other manufacturing operations, whose end products are usually immediately identifiable as consumer goods, the chemical industry's products remain largely unknown to the general public, but are crucial to a number of manufacturing processes. Over seven million chemicals have been synthesised in laboratories — 75,000 are used in commercially significant quantities. In addition approximately 1,000 new chemicals are brought into the market each year.

Ethylene is the largest volume chemical produced by the organic chemical industry — more than 250 million kilograms are produced annually in Australia (about 17 kilograms per person). It is a starting material for transformations into other organic chemicals and the list of final products that stems from ethylene includes aspirin, records, adhesives, pipes, floor tiles, toys, pesticides, flame retardants, pharmaceuticals, dry cleaning fluids and petrol additives.

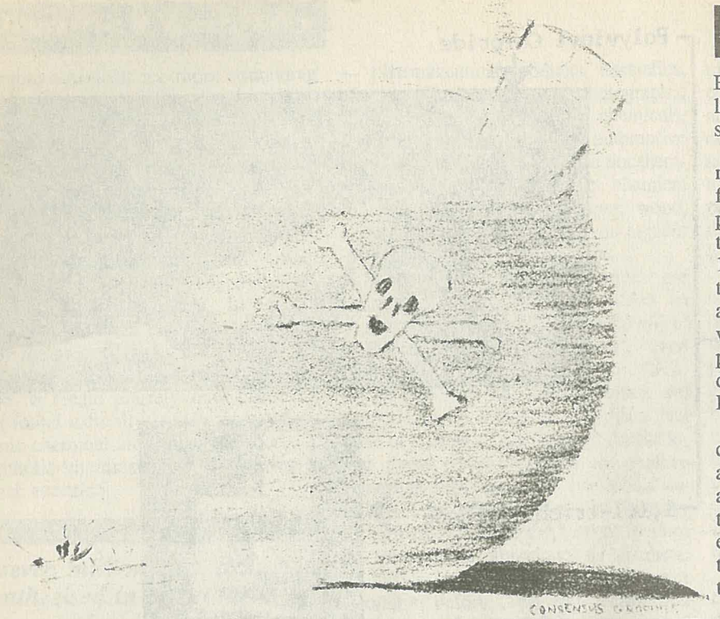
The chemical industry is the fourth largest manufacturing industry in Australia and directly employs over 50,000 people. Australia currently produces about 700 chemicals, imports a further 20,000 and there are over 200,000 brand names or formulated chemical products on the market.[4]

THE ORGANIC CHEMICAL INDUSTRY

Some end products of ethylene - the chemical with the largest volume of usage in Australia.



WHEN ORGANIC ISN'T HEALTHY



Health Effects

Events continue to reveal that 'better living through chemistry' comes with serious costs.

In December 1984, 40 tonnes of methyl isocyanate (MIC) gas escaped from the Union Carbide pesticide production plant in Bhopal, India. Over two thousand people were killed, 10,000 seriously injured, 20,000 partially disabled and 180,000 adversely affected in one way or another. MIC was used in the production of carbamate pesticides, including household products such as Baygon and Carbaryl. Both of which are available in Australia.

Apart from spectacular chemical accidents and situations where the effects are really obvious, research has drawn attention to the serious health problems that may arise from chronic low level exposure. Such effects can be quite subtle and may be difficult to link to a particular chemical or a particular exposure, especially as exposure can be long term and cumulative. Depending on circumstances the effects can range from an increase in headaches, dizziness, skin disorders and a general feeling of ill health to cancer, genetic damage and liver disorders. Effects such as cancer may take a number of years to develop, but may occur from exposure levels far less than those that cause obvious symptoms such as headaches and vomiting. Damage may be occurring without the person being aware of problems, in this way many of the effects of chemicals are insidious.

Despite the potential for widespread human exposure, most synthetic chemicals have received little or no testing for toxicity. No information on toxic effects is available for an estimated 79 per cent of the chemicals in commerce. Less than one fifth have been tested for acute effects, and less than one tenth have been tested for chronic (eg cancer causing), reproductive or mutagenic effects.[5]

In Victoria cancer strikes one in three people and kills one in six.[6] Much cancer today reflects events and exposures in the 1950s and 1960s. Production, uses, and disposal of synthetic organic and other industrial carcinogens were then miniscule compared to current levels, which will determine future generations' rates. There is every reason to anticipate that even today's high cancer rates will be exceeded in the coming decades.[7]

While concern can be focused on increasing cancer rates, this substantially underestimates the extent and scope of the health effects of the non carcinogenic pollutants which can induce other chronic effects such as neurological, respiratory, reproductive and immunological diseases. Research in this area is limited.

Even if scientists could thoroughly test each of the tens of thousands of chemicals in use, uncertainties would remain about their effects on human health. Whether through water, air, or food, people are typically exposed to more than one chemical at a time. Combinations of chemicals can pose different degrees of hazards than the same chemicals in isolation. It has been found that some chemicals in combination yield new substances that are more toxic than the parent chemicals, for example, carbaryl pesticide residues in food products combined with nitrites used as a preservative can cause N-nitroso methyl naphthyl carbamate which is a carcinogen. This is known as synergy. Few chemicals are tested for their synergic effects, nor are synergistic effects taken into account when setting safety standards.

Just how extensive and serious the health consequences of chemical exposure may become is impossible to judge. Since many toxic effects appear several decades after exposure to the offending chemical, the full implications of the chemical age will take time to realise. Given the thousands of chemicals introduced into the environment and the lack of knowledge about their health effects, some unpleasant surprises may lie in store.

SOBERING THOUGHTS

- Two hundred substances have been found in the United States drinking water, including 175 organic chemicals. 32 of these organics and five of the metals are known or suspected carcinogens.
- From 1983 to 1987 58 Beluga whales have been washed up dead along the shores of the St. Lawrence River, Canada. Autopsies have shown high levels of organic residues, including DDT and PCBs. In fact some of the whales have had enough PCB to be classified as toxic waste. PCB levels have been as high as 575 ppm and Australian and US regulations define anything with more than 50 ppm to be hazardous waste. It is estimated that only 350 Belugas remain thereby it is likely they will become extinct.
- Between 400,000 and 2 million pesticide poisonings occur world wide each year, most of them among farmers in developing countries. Between 10,000 and 40,000 result in death.
- At least 90 per cent of US residents have toluene, benzene, and chlorobenzene in their fatty tissue. Every sample investigated contained styrene, xylene, ethyphenol and dioxin. And 98 per cent were contaminated with HxCDD, one of the two most potent carcinogens yet evaluated by the US EPA. This study by the US EPA called NHATS has for 20 years been evaluating toxins in human tissue.
- A study of pesticides and PCBs in human breast milk undertaken by the State Chemistry Laboratory Victoria found that HCB and DDT were present in all samples, PCBs in 80 per cent and dieldrin in 97 per cent. Seventeen per cent of the samples for dieldrin showed ten times the acceptable daily intake levels for adults.
- Little or nothing is known about the toxicity of about two thirds of the best known chemicals, drugs and pesticides. There is enough information to make a partial assessment of the health hazards for only 34 per cent of 3,500 pesticides, 16 per cent of the 3,000 cosmetic ingredients, 19 per cent of the 8,500 food additives and 10 per cent of the other 50,000 chemicals used in commerce generally.
- A study by the Canadian Wildlife Service on chemical contamination in the arctic found a wide range of toxic chemicals in the flesh of polar bears, indicating that pollution is being carried to the arctic. Traces of PCBs, HCB, dieldrin, chlordane and DDT were found.
- In 1984, 422,500 tonnes of toluene, 30,000 tonnes of carbon tetrachloride and 35,000 tonnes of benzene were emitted to the air in the United States. Other studies indicate that similar quantities are discharged to both land and water.

CHEMICAL ACCIDENTS

1959 Minamata (Japan) — uncontrolled release of mercury by chemical companies into Minamata Bay leads to severe poisoning of local population. 400 dead, 2000 injured.

1973 Fort Wayne (USA) — Vinyl chloride is involved in a rail accident. 4,500 evacuated.

1973 Michigan (USA) — PCBs inadvertently mixed with cattle feed leading to widespread poisoning throughout the State. More than 30,000 cattle had to be destroyed.

1974 Fixborough (UK) — explosion at plastics plant, cyclohexane involved. 23 dead, 104 injured, 3,000 evacuated.

1976 Seveso (Italy) — explosion at Hoffman La Roche trichlorophenol plant releases a cloud of dioxin over surrounding communities. 900 people evacuated. Birth defects increased by 40 per cent in following year.

1979 Missassauga (Canada) — railway accident involving a train carrying butane and chlorine. The butane exploded, spilling chlorine over surrounding community, 240,000 residents evacuated.

1979 Love Canal (USA) — discovery of toxic wastes dumped 30 years earlier by Hooker Chemical Company leads to problems of birth defects and spontaneous abortions.

1984 Bhopal (India) — leakage at pesticide plant, more than 2,500 dead thousands injured and 200,000 evacuated.

1985 Footscray (Australia) — series of explosions at Butlers transport depot. More than 170 types of chemicals were stored on the premises and were released during the explosions.

1986 Basel (Switzerland) — fire at pesticide plant on the Rhine River results in between 10 to 80 tonnes of chemicals released to the river. 150,000 eels dead three days after.

1986 Canada — approximately 6364 kilograms of highly toxic chemicals — vinyl chloride, hydrogen chloride and ethylene dichloride — were released into the air by Dow Chemical company. The gases escaped when a broken instrument created a pressure build up in a vinyl chloride production unit.

1987 Ohio (USA) — a tanker carrying hazardous chemicals overturned and caught fire creating a chemical cloud which forced 2,000 people to evacuate their homes. The tanker was carrying phosphorous trichloride.

Past Management

During the last 10 to 15 years increased public perception of the risks associated with chemicals has directed attention to sources of chemical exposure and as a result to the unwanted products of industry — hazardous wastes.

The growth of the chemical industry and the wide ranging application of chemical products has resulted in a similar growth in the generation of hazardous waste. In the early days responsibility for the disposal of hazardous waste was left with the industries that produced the wastes and naturally they chose the most cost efficient manner of disposal. Little consideration was given to the long term environmental effects of disposal methods and their consequent effects on public health or the environment. Wastes were frequently pumped directly into river systems or the sea, or dumped in tips and quarries, where there was little study of leaching of toxic substances into groundwater, and little control of it.

Love Canal in the United States is one of the better known examples of the problems that hazardous waste can cause. In the 1920s a site of land was converted into a municipal and chemical landfill. In 1953, the Hooker Chemical Company, which then owned the site, sealed it with clay and sold it to the city. Later several hundred houses and an elementary school were built next to the site.

In late 1970, after prolonged heavy rains, chemicals from the abandoned dump began percolating through the soil into the yards and basements of homes. Trees and plants turned black and died. Hazardous chemicals collected in puddles. Children playing outside got chemical burns on their hands and faces.

The New York State Health Department found a disturbingly high rate of miscarriages and birth defects among area inhabitants. A large percentage are under observation because of high white blood cell counts, possibly early evidence of leukemia. On the site 82 different compounds have been identified, eleven of them suspected carcinogens.

Two hundred and thirty nine homes were evacuated and a $36 million cleanup began of the 21,800 tonnes of chemical waste that had been buried.

By the end of 1984 the US Environment Protection Agency (EPA) had identified more than 20,000 hazardous waste dump sites throughout the United States and estimated that the total could be much higher. The United States EPA claims that it costs an average of $8.1 million dollars to clean up one site.

In Australia, the effects of our past management of hazardous waste have not been as dramatic. However, as in other countries prior to 1970, industrial wastes in Australia were disposed of to municipal refuse landfills, on to industrial land and discharged into groundwater bores with little regard for potential adverse environmental effects. There are numerous sites around Australia that have been used for this purpose. There has been little effort to identify the sites, let alone assess their impact on the environment.

In the 1970s State Governments began recognising the potential hazards of past practices and introduced some controls on the disposal of industrial and hazardous wastes. In Victoria this meant that disposal of liquid waste was limited from most municipal tips although they continued to accept some solid wastes. A privately operated waste disposal site at Tullamarine was established for the disposal of liquid wastes, which was essentially a controlled landfill with limited treatment facilities. Similar approaches were taken in the other states. Unfortunately these newly established waste disposal sites have become environmental problems of their own.

Efforts to control hazardous waste continue to the extent that these days there is a booming hazardous waste industry and continual paper activity within government departments on the issue. Nonetheless the waste issue is not resolved and the implications are now becoming major issues of public concern in Australia.

HAZARDOUS WASTES

Where does it come from?

The bulk of hazardous waste comes from industry as the unwanted by-products from the manufacture of consumer and industrial items. Hazardous wastes are those products which can harm people, wildlife and plant life. They may be toxic, irritative, corrosive, flammable or explosive — all characteristics which make hazardous waste too dangerous to be disposed of directly to the environment.

Hazardous waste can pose short term acute hazards such as toxicity by ingestion, inhalation, or skin absorption; or corrosivity and the risk of fire or explosion. It can also create long term environmental hazards, including chronic toxicity upon repeated exposure, carcinogenity, resistance to detoxification processes such as biodegradation, and the potential to pollute underground or surface water.

The term hazardous waste conjures up visions of drums or an observable substance, however hazardous waste can be microscopic particles emitted from factories to the air, or gases, liquids or solids. As a result the effects of hazardous waste are not always noticeable. In some cases you can see black smoke rising from the chimney of a factory, or an oily substance floating on the surface of a river, however in many cases there are no real smells or substances to see.

Once in the environment hazardous waste is transported via air or water and people can be exposed to the waste products by eating, breathing, drinking, skin contact with things that have been contaminated or by direct contact through work or living near a waste producing industry.

POLY VINYL CHLORIDE (PVC)

Polyvinyl Chloride, commonly known as PVC, is one of the world's most widely used plastics. It is used for pipes, floor coverings, footwear, cables, records, bottles, building and packaging materials.

In 1835 Henri Regnault, a French physicist and chemist, heated ethylene dichloride with alcoholic caustic potash and produced vinyl chloride, the vinyl monomer (VCM), which at room temperature is a colorless inflammable gas. In 1872, Baumann observed that vinyl chloride polymerised to a solid when sealed glass tubes containing the monomer were exposed to sunlight. However it wasn't until 1937 that Schoenfeld in the United States demonstrated that vinyl monomer could be polymerised at an economic rate. Initially vinyl chloride was synthesised from acetylene and hydrogen chloride. In the 1960s ethylene became the major feedstock for PVC manufacture.

The current practice for PVC manufacture is to react ethylene with chlorine to form ethylene dichloride which is decomposed at high temperatures or 'cracked', to vinyl chloride and hydrogen chloride. The hydrogen chloride is then either combined with acetylene to produce more vinyl chloride or oxidised with ethylene to form ethylene dichloride and in turn, vinyl chloride.

Polyvinyl chloride is then produced mainly by a process in which VCM in the form of a stirred suspension or emulsion in water is polymerised in the presence of an initiator which causes the VCM to polymerise. The resultant PVC is available in the form of a white powder which softens at about 80°C. By adding various substances a range of products can be made varying from soft, flexible products to hard tough materials. The degree of softness is regulated by liquid chemicals called plasticisers. In the hard tough form no plasticisers are used and this hard PVC is used for rigid sheets and pipes. The soft PVC products with plasticisers are used for raincoats, shoes, garden hoses and toys.

PVC may contain traces of VCM which can leach into materials, such as food, which are stored or packaged in PVC containers. VCM is also released when PVC is burnt but possibly more significant is that dioxins are produced from the burning of PVC.

Imperial Chemical Industries (ICI Australia) began production of vinyl chloride monomer in Australia in 1950 at its Botany plant.

Vinyl chloride monomer is a substance that has definitely been linked to the rare form of cancer, angiosarcoma of the liver, and is suspected of causing the same type of cancer in other parts of the body. Workers exposed to vinyl chloride monomer can also suffer from skin sores, blood circulation disorders, clubbing of the fingers, and spleen disorders. It is also suspected that VCM causes liver disorders.

One unwanted product from PVC production is hexachlorobenzene (HCB) which is highly toxic, very difficult to degrade and fat soluble. Large quantities are stored at ICI's Sydney chemical Plant (Botany) and it helps ICI maintain its position as Australia's largest generator of intractable waste. Currently the HCB is stored in 200 litre drums in a protected building where it is regularly inspected by the NSW State Pollution Authority.

How much is there?

There is neither consensus nor concrete knowledge on worldwide production of hazardous waste because it is defined differently by different countries. However, one estimate states that in 1984 between 325 and 375 million tonnes of hazardous waste were generated worldwide, with approximately 90 per cent from industrialised countries.[8]

Similarly, exact figures on hazardous waste generation in Australia are not available. The bulk of hazardous waste is generated in Victoria and New South Wales and both States produce comparable quantities. Victoria produces 35 million tonnes of industrial waste each year, of which 80,000 to 90,000 tonnes is defined as hazardous waste which requires specialized treatment.[9]

Of this hazardous waste requiring treatment there is currently no environmentally acceptable disposal facilities for approximately ten per cent of the waste. Therefore these wastes are known as 'intractable' wastes. It is intractable wastes that are of most concern despite their relatively small quantities.

Intractable wastes include chlorinated hydrocarbons which, because of the strong carbon-chlorine bond, are very stable and persist in the environment for many years. Their hazards include toxicity, mutagenic and carcinogenic effects. Their resistance to biological degradation leads to a propensity to accumulate in the food chain and as a result these chemicals can pose serious environmental and health effects even when released in very small quantities. They include DDT, Polychlorinated biphenyls (PCBs), Hexachlorobenzene (HCB) and solvent residues.

Unfortunately the effects of these particular chemicals were not discovered until they had been in use for many years. It was then found that they had accumulated in the food chain and traces of them could be found in almost all species of animal even in isolated areas. Prior to this discovery these chemicals had been widely used for a number of purposes and large amounts of wastes containing these chemicals had been indiscriminately dumped at municipal waste sites, disused quarries and released to waterways, and as a result have become dispersed throughout the environment.

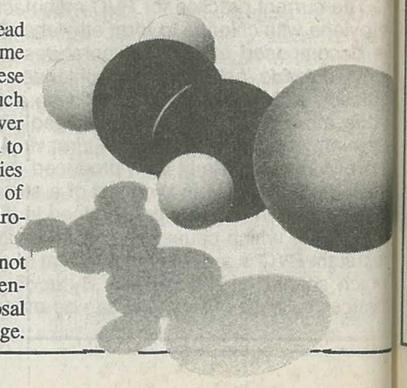
Once the effects of this widespread contamination were documented, some restrictions were placed on these chemicals. The production of some such as PCBs were phased out, however others such as DDT were still applied to agricultural land and some industries continued to produce large amounts of wastes containing chlorinated hydrocarbons.

Where identified these wastes are not allowed to be disposed of to the environment and with no suitable disposal method they have been put into storage. This has been the major way of dealing with intractable wastes in Australia for the last decade.

Storage was initially considered a short term intermediary step. However no disposal option has been developed although some wastes have been shipped overseas for disposal in high temperature incinerators in France and United Kingdom at a cost of up to $5,000 a ton. In 1982, the ocean incinerator vessel *Vulcanus* visited several Australian ports and 4,660 tonnes of liquid intractable wastes were disposed on board.

In 1985 a NSW report estimated the known stockpile of intractable waste in Australia at 7,800 tonnes and increasing by 950 tonnes per year.[10] This report has become accepted as the basis for estimating amounts of intractables in Australia even though it was limited to primarily considering PCBs and HCB. It did not list the amounts of chlorinated organic solvents or contaminated soils from old landfill sites, figures which are essential for planning the destruction of all of the intractable wastes in Australia.

The recall of DDT and dieldrin following the ban placed on their use in 1987 has increased the stockpile. ICI continues to generate wastes at its Botany plant. PCBs coming from old electrical transformers need to be disposed of as well as soil and drums from the tidying up of old contaminated sites. Old landfills must be investigated because it has been found that chemical reactions can occur within landfills producing further chlorinated hydrocarbon products.



HOW TOXIC IS TOXIC?

Industry and government officials try to reassure us by talking about chemicals in parts per million or parts per billion as though such small levels are perfectly harmless. A comparison of 11 parts per million to an 11 ounce needle in a tonne of hay can sound quite small. However such concentrations of some chemicals can be quite hazardous.

One part per million of a substance means that there is one milligram of that substance for every kilogram of body weight. For example, a dose of one part per million for an adult weighing 59 kilograms would equal 59 milligrams.

Consider it in terms of the common aspirin where the average tablet contains 325 milligrams of active ingredient. Two tablets would be approximately the equivalent of 11 ppm in a 59 kg adult. This dose can be enough to stop pain and reduce fever but doctors do not recommend that you take an aspirin every day, or that you give the same amount to a baby as you would take yourself.

Breathing air or drinking water that is contaminated to 11 ppm can be a constant exposure. Depending on the substance 11 ppm could be very significant — even dangerous — and certainly not just a needle in the haystack.

CHLORINATED HYDROCARBONS

The most significant thing about chlorinated hydrocarbons is that carbon combines directly and strongly with chlorine. The carbon-chlorine bond does not exist in nature.

One implication of this synthetic bond is that chemicals containing the carbon-chlorine bond will not be easily degraded and can not readily be broken down by microbial and biochemical processes. Such compounds have the longest known half lives in soil and water ecosystems and are now found in every mammal and every human's fatty tissues from one end of the earth to the other.

Also, the unusual biochemistry of the bond suggests why so many chlorinated hydrocarbons are being found to cause cancer. These compounds are completely foreign to normal bodily processes and thus mechanisms for detoxification do not operate.

If chlorinated compounds are burnt at low temperatures — for instance around 500°C — significant quantities of highly toxic dioxins are produced.

Examples of chlorinated hydrocarbons include:

Ethylene dichloride: Also known as 1,2-Dichloroethane. Its major use is in the production of vinyl chloride monomer and is also the starting point for some chlorinated solvents. It is also used as a petrol additive, fumigant, solvent and metal degreaser. Health effects include nausea, vomiting, liver and kidney damage, central nervous system depression and it is a suspected carcinogen.

Vinyl chloride: see page 9

Carbon tetrachloride: CCl_4 is variously used as an industrial solvent, raw material for fluorocarbon manufacture, grain fumigant, component in fire extinguishers and dry cleaning. Carbon tetrachloride is toxic by inhalation of its vapor and is known to cause liver and kidney damage. It is a carcinogen in laboratory animals and a suspected human carcinogen.

Perchloroethylene: also known as tetrachloroethylene. Widely used in dry cleaning applications, as an industrial solvent and textile processing. It is a central nervous system depressant causing headache, tremors, nausea and vomiting, fatigue, unconsciousness and death.

Polychlorinated biphenyls (PCBs): see page 23

Chlorobenzenes: are used in the production of numerous pesticides including DDT, as industrial solvents and in their solid form as mothballs and room deodorant blocks.

DDT: otherwise known as dichloro diphenyl trichloroethane. DDT is a non-specific insecticide used for a variety of agricultural and public health purposes. Essentially non-biodegradable in the environment, DDT is present in virtually all foods and living things. A suspected carcinogen, the chronic toxicity of DDT is increased by its persistence and accumulation in body fat at each level of the food chain. DDT was banned from all uses in Australia in 1987.

Dieldrin: used as an agricultural pesticide and for domestic termite control. Dieldrin is acutely toxic and also poses serious chronic hazards, it has been identified as a carcinogen in animals and has been associated with birth defects and spontaneous abortions.

2,4,5-T: was a key component of Agent Orange, one of several defoliants used by the United States in Vietnam. 2,4,5-T is inevitably contaminated with dioxin. It is used extensively as a herbicide in agriculture, urban weed control and to clear large land tracts. Animal studies indicate that increased birth defect rates and male infertility are associated with 2,4,5-T. It is also a suspected carcinogen. Workers involved with 2,4,5-T have reported chloracne, liver disorders, neurological changes and fat metabolism disorders.

Dioxins: a family of 75 closely related compounds, the most notorious is TCDD. Dioxins have never been manufactured deliberately, having no uses in their own right. However they occur as an inevitable contaminants of some manufacturing processes. They are also produced by the burning of chlorinated compounds. TCDD dioxin has been considered the most toxic of man made substances.

1,1,1-trichloroethane: also known as methyl chloroform. This is a non-flammable solvent and is widely used in the engineering industry as a solvent and in domestic products such as liquid paper. The chemical affects the central nervous system and can lead to kidney damage.

"Increasing recognition is being given to the fact that many treatment technologies, in solving one waste management problem, merely create others."

LANDFILL

A landfill is an area where materials are basically put into holes in the ground and covered by dirt or in some cases concrete or other materials. There are two types of landfills: municipal landfills and 'secure' hazardous waste landfills. Both types pose a serious threat to the environment and public health, because both leak into the surrounding environment. Water and chemicals will eventually seep through all soils including so called impervious clay, at different rates depending on the type of soil.

Municipal Landfill

This type of landfill is primarily used for household garbage and for some industrial wastes. Although household garbage sounds perfectly harmless, it isn't. It includes plastics, solvents, drain cleaners, cleaning agents and aerosol cans, and all contain different types of hazardous chemicals. Since municipal dumps were not designed to handle such wastes they tend to leak sooner than 'secure' landfills and, more importantly, monitoring is often not done to test for leakage, therefore chemicals can escape for years before being discovered.

Secure Landfill

A secure landfill is used specifically for the disposal of hazardous waste. At one time it was believed that this type of landfill would contain chemicals forever in an earthy vault, but this theory has since been proven incorrect. In fact it has been clearly documented that wastes will move out of the landfill and into the environment at some time in the future. These landfills are generally built by digging a large hole, lining the hole with clay or a plastic material, then depositing the wastes and covering the site with a cap made of plastic or clay. When properly designed, these sites contain a monitoring system to detect leaks and a collection system to collect wastes that begin to move from the primary site.

A secure landfill is not a suitable method of disposing of hazardous waste. Secure landfills at best only slow down the flow of wastes into the environment, they do not prevent it.

BIOLOGICAL

Biological treatment processes are commonly used for degrading organic wastes although this approach has not been used in the past for intractable wastes due to their resistance to biodegradation. However recent research has indicated that it may be a feasible option. It has been found that certain naturally occurring fungi are capable of breaking down chlorinated wastes.

According to Professor Waid who has undertaken such research 'the fungi are not likely to present threats to humans or the living environment and unlike many types of physical or chemical treatment, there should be no residual adverse environmental effects of the fungal process. Such fungi, therefore may have a considerable potential for the in-situ treatment of organic substances present in hazardous waste mixtures. Also it may be possible to develop bioreactor systems in which these fungi could degrade large volumes of concentrated intractable organic wastes under controlled conditions.' (Professor Waid 1987)

Also, ICI is currently funding a $100,000 research project at Monash University to genetically engineer a bacterium to eat HCB.

BURN, BASH OR BURY?

Treatment and Disposal

Treatment of hazardous wastes, on or off plant sites, is an extremely common means of industrial waste management. Treatment practices, such as incineration, chemical decomposition or biological treatment, destroy some of the hazardous materials present in a waste, converting them into innocuous substances like carbon dioxide and water. Some treatment practices (particularly for metal wastes, which cannot be destroyed) simply convert the form of the waste, for instance, removal of metals from waste water concentrates them into sludge, which then awaits further disposal.

A huge amount of research has gone into developing and finding ways of treating and disposing of wastes and there is much competition and debate within the waste industry of the merits of various methods. Despite this level of research the perfect treatment option has not been found and landfill has remained the major method of waste disposal.

NSW, Queensland and Victoria have or are proposing to develop liquid waste treatment facilities to reduce the amount of liquid waste being deposited to landfill. However such facilities are still dependent on landfill for residual wastes and are not suitable for the treatment of intractable wastes.

High temperature incineration is the next most commonly discussed treatment alternative — and many see it as the only viable means for the disposal of intractable wastes and even as the preferred option for all organic wastes.

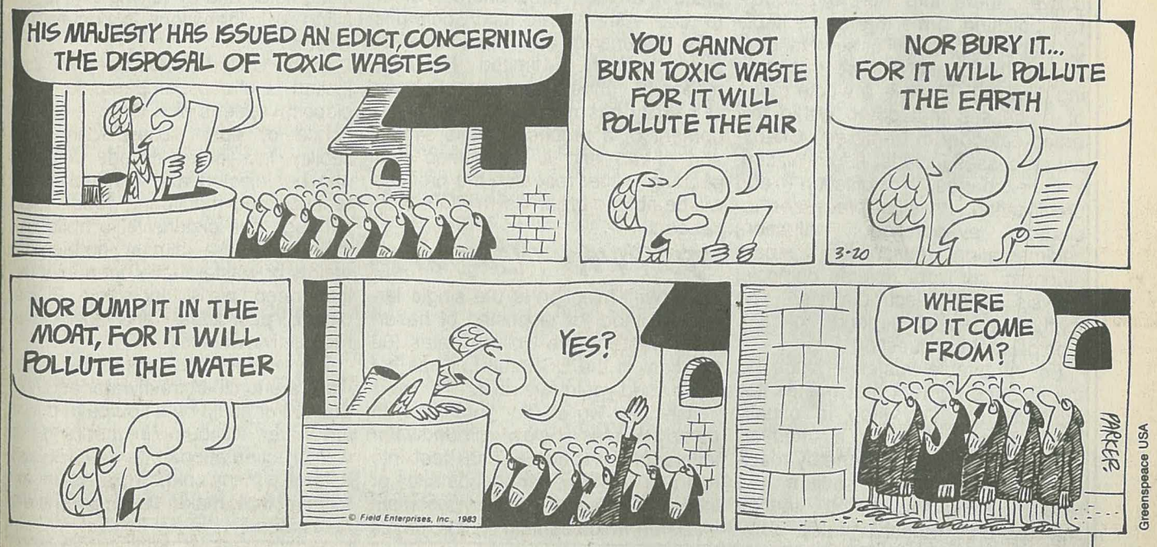
However despite a number of proposals to establish a high temperature incinerator all for a number of reasons have been withdrawn. ICI Australia is the largest producer of intractable wastes in Australia and has been the most affected by the lack of facilities to treat such wastes. As a result ICI has developed mechanisms to recycle a large portion of its liquid intractable wastes, halving their generation as a result. Nonetheless they still generate large quantities. Following the failure of negotiations to establish an incinerator ICI decided that incineration was not socially or politically feasible. Since then ICI has committed resources to investigate further recycling of their solid wastes and to bacterial biodegradation.

Likewise the lack of facilities for

OCEAN INCINERATION

Incineration of liquid hazardous organic wastes on ships has beer practiced since 1969, in 1982 such a vessel came to Australian ports. The incinerator ship consists of liquid storage tanks and a liquid injection combustion chamber, with none of the air pollution control devices associated with land based incinerators. Acid gases are supposedly neutralised by the sea water and air.

Incineration at sea can only dispose of liquid wastes and requires increased handling of the waste and thus increases the risk of spillage. There are also is an increased likelihood of transport accidents. Ocean incineration is generally seen as an unacceptable means of waste disposal.



other types of wastes has resulted in other companies developing their own on-site treatment measures.

However increasing recognition is being given to the fact that many treatment technologies, in solving one waste management problem, merely create others. Air pollution devices or liquid waste treatment plants prevent or limit wastes entering the air and water, but then toxic ash and sludges constitute hazardous solid waste problems requiring attention. Solid wastes in landfills can become water pollution problems, evaporation from ponds and lagoons can turn solid or liquid wastes into air pollution problems.

It is clear that our ability to generate waste is far ahead of our current ability to treat and dispose of it. And despite increasing attention to the disposal of hazardous waste, it is still routine in many forms: hazardous chemicals are regularly emitted to the atmosphere, discharged to waterways, or buried in landfills. Generally this is permitted by regulatory agencies when the quantities of waste are presumed to be small enough so as not to present a hazard to the environment or public health. But it also occurs because of the continuing absence of standards and regulations affecting many chemical discharges.

Remedying the legacies of past mismanagement is only the first step in addressing the hazardous waste dilemma. Unless the wastes currently produced are better managed, new threats will simply replace old ones, committing society to a costly and perpetual mission of hazardous chemical cleanups. A number of countries offer valuable lessons in improving industrial waste management, although few, if any, have adequately tackled the issue of controlling the total volume of waste generated. Without concerted efforts to reduce, recycle, and re-use more industrial waste the quantities produced will overwhelm even the best treatment and disposal systems.

"Without concerted efforts to reduce, recycle, and re-use more industrial waste the quantities produced will overwhelm even the best treatment and disposal system."

TREATMENT METHODS

The objective of physical or chemical treatment of hazardous wastes is to convert them into non hazardous, non polluting forms that are suitable for disposal to landfill or sewers, or to reduce the quantity of waste requiring disposal. There is a whole range of processes that come within this broad category of treatment. Chemical processes include: neutralisation, ion exchange, oxidisation and precipitation. Physical processes include: evaporation, filtration, sedimentation, flocculation, steam stripping, sorption, reverse osmosis, dialysis and electrodialysis. The method adopted depends on the type of waste in question.

For intractable wastes — since it is the chlorine content that makes it a problem, the first step is usually dechlorination. This is a chemical process which can be done by reacting the wastes with sodium, the resultant products being sodium chloride and non-chlorinated compounds depending on the type of waste. The reaction needs to take place in an inert atmosphere in order to reduce fire hazard risk. Sodium is very expensive and application of this approach is limited. However research undertaken at Sydney University has resulted in the development of a process that is simple and cheap and it is claimed that pending further research the process will be able to break down PCBs 100 per cent.

DEEPWELL INJECTION

Deep well injection is the single largest method for disposing of hazardous waste in the United States (60 per cent of the US total) but has not been used yet in Australia.

Injection wells are supposed to pump wastes below groundwater levels, often 1000 — 7000 feet into rock, usually either sandstone or limestone. These formations contain air pores which contain liquids, gases or both. The theory is to pump the wastes into these pores without fracturing the rock by maintaining just enough pressure to displace the existing fluids and by relying on the existing rock formations to contain the wastes.

In the United States deep well injection is cheap compared to other disposal options plus there is an absence of post closure care and liability, lack of restrictions on what can be injected and minimal maintenance and monitoring costs. Thus although it is expensive to build further costs are almost nothing. A variety of wastes have been injected into deep wells, including PCBs, dioxin, pesticides, and low level radioactive wastes.

The major risks posed by deep wells are to clean freshwater aquifers that are or could be a source of drinking water. Although in theory deep well injection appears to be harmless there are many unknowns and uncertainties that make them potentially disastrous.

TO BURN OR NOT TO BURN

INCINERATION

Incineration is a process which reduces waste by burning. Incinerators generally consist of a combustion chamber where wastes are consumed on moving grates at temperatures ranging from 400 — 1600°C, a secondary combustion zone for consuming combustible gases, and flues or stacks that release gases and suspended particles.

The burning of hazardous wastes is very different from burning wood, paper or glass. The wastes must be carefully separated and the contents defined, otherwise the burning efficiency will be lowered, resulting in increased air pollution. Special attention must be directed to four factors:

1) temperature
2) residence time — the length of time the wastes are burned
3) turbulence — the mixing of the wastes with oxygen
4) types of wastes being burned

This last factor affects all other factors. If the material being burned is not identified the other factors cannot be properly established. Each of these factors must be finely tuned together —and maintained at the established values — to yield maximum combustion and optimum incineration (optimum operating conditions). The greater the chlorine content of the wastes, such as PCBs or dioxin, the more difficult it is to achieve optimum operating conditions.

For intractable wastes the temperature must be greater than 1200°C — thereby the term high temperature incinerators. Those intractable wastes which have no disposal option and are often proposed for treatment in a high temperature incinerator are:

- chlorinated hydrocarbons
- pesticide wastes
- aromatic hydrocarbons
- chlorinated solvents and their residues

High temperature incineration has become a popular method of destroying these types of wastes and is in use in a number of countries. Other disposal methods exist for other organic chemicals but some argue that incineration is the preferred method for all organic chemicals. However there are some disadvantages.

Products of Incomplete Combustion

During the incineration process it has been found that Products of Incomplete Combustion (PIC) can develop — new compounds not present in large quantities in the waste feed. Some are more toxic than the original compounds being burned.

PICs can occur in several ways. Firstly they may develop when not all of the waste is exposed to the necessary temperatures for destruction. Dioxin is a product of the incomplete combustion of PCBs. Secondly some chlorinated hydrocarbons can produce intermediate species that are more stable than the molecules of the parent chlorinated hydrocarbons. Examples of PIC that have been identified are benzene, chloroform, tetrachloroethylene, and napthalene as well as formaldehyde, phosgene, dioxins and furans, and these were only a fraction of the chemicals present in the stack gases. The exact nature of how PIC are formed and therefore mechanisms to control their formation during the incineration process is unclear.

These products of incomplete combustion are either captured by pollution control devices or released direct to the atmosphere. If captured they must still be disposed of and as noted previously some of these products are more toxic than the original waste from which they arise. If released to the atmosphere they can lead to health and environmental problems, particularly given the high toxicity of some of these compounds even in very small doses.

Disposal of Residue Wastes

A popular misconception is that incineration actually constitutes a method of destruction. However, it actually reduces and converts the original waste into residues in different forms in need of separate disposal. Incinerators leave about 70 per cent gas and 30 per cent ash, of which about 10 per cent is fly ash and the remaining bottom ash. Exhaust gases should be scrubbed with water to prevent air contamination, leaving hazardous waste water and ash.

If operated properly high temperature incinerators can achieve destruction and removal efficiency (DRE) of 99.99 per cent and greater. However this still leaves a small percentage of wastes that are released to the air. This amount can be significant given the nature of the chemicals. For example, 20,000 tonnes of wastes burnt at a rate of 99.99 per cent would result in .01 per cent or 2 tonnes being dispersed to the environment.

Economics

High temperature incineration is extremely expensive with high capital and running costs. Australia does not have enough hazardous waste to make two incinerators commercially viable. Even the economics of one incinerator are dubious especially if there are real attempts to reduce waste volumes. Although the current stockpile of stored intractable waste could be dramatically reduced by high temperature incineration it is safer to reduce these wastes at the source. Once an incinerator is commissioned the incentive to reduce hazardous wastes at their source is considerably lessened and the incinerator will compete with efforts at recycling. There will be a vested interest in maintaining a steady flow of hazardous wastes to the incinerator to keep it commercially viable.

WASTING RED TAPE

Regulations

During the upswing in the use of synthetic chemicals very few controls were placed on their production, transport, or end use. In the 1960s risks associated with these new compounds became obvious and a need for regulatory measures was evident. It was acknowledged that a uniform approach to regulation must be undertaken given the international nature of the chemical industry, the huge trade in chemicals and the expense of evaluating the effects of chemicals.

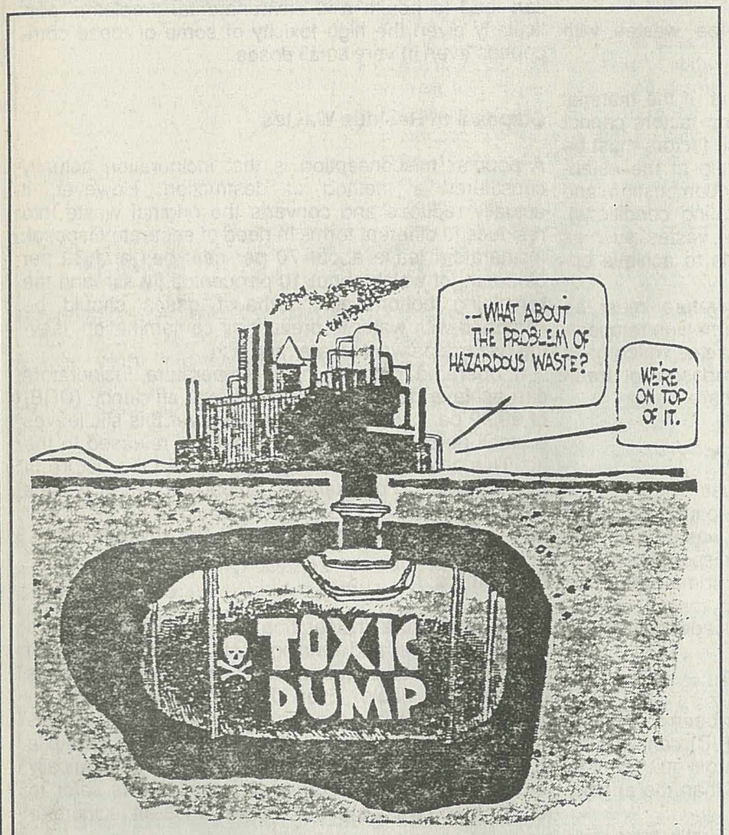
Historically the disposal of hazardous waste was primarily a local government responsibility until the 1970s when State Governments undertook some legislation to control hazardous waste. There is little federal legislation and currently industrial chemicals are not subject to any national legislation. At a State level industrial chemicals are controlled to a greater or lesser degree through a wide range of legislative and administrative structures.

However regulating the industry has not proved easy largely as a result of its size, the number of products and lack of information on uses of chemicals. And as a result regulations affecting hazardous waste reflect the general standards for the regulation of chemicals — standards are confused, conflicting and often inadequate.

This has been recognised by both the Federal and State Governments and over the last ten years a number of reports, studies and proposals have been considered and while the recommendations have remained fairly consistent, the regulations are still inadequate.

In 1982 the House of Representatives Standing Committee on Environment and Conservation investigating Hazardous Chemicals in Australia issued its first report before it was due rather than wait for the full term of the inquiry on the grounds that the inadequacies of current procedures were regarded by the Committee as serious enough to warrant a separate and earlier report. The report stated:

> 'Despite the many announcements and the development of codes by Governments and industry over the last decade there has been little improvement in the control of hazardous waste by the Commonwealth and most State, Territory and local Governments. The problem requires urgent action by Governments to identify and quantify wastes and ensure they are safely stored, treated and disposed of.'[11]



The report also stressed the need for a national waste management strategy which would incorporate mechanisms for identifying wastes, checks on the movements of wastes, provision of appropriate facilities and a demonstration to the community of the effectiveness of the strategy.

In 1983 the Australian Environment Council (an inter-government council comprised of Commonwealth, State and Territory Minister responsible for the Environment) issued a report called the *Management and Disposal of Hazardous Industrial Wastes*. Again this report stressed the urgency of the need for a national strategy for hazardous wastes and the need for a consistent approach throughout Australia.

The requirements for a national strategy were a 'cradle to grave' approach which involves the monitoring of hazardous wastes at all times throughout their life cycle to ensure that wastes generated are appropriately stored, transported and treated or disposed of. This requires comprehensive controls on the production, use, transport, storage and disposal of wastes.

For this to occur they suggested the need for:

- identification and measurement of hazardous wastes
- notification, reporting and audit procedures
- preparation of a comprehensive database
- procedures for updating waste stream estimates
- promotion of waste reduction, recovery and exchange
- permit and compliance procedures for production, use, storage, transport and disposal of wastes
- development of a comprehensive system and management framework.

The report also stated the need for accurate information on the types and quantities of hazardous waste in Australia and stated that this information was essential for the successful management and control of hazardous wastes.

> 'At the heart of this framework will be the system set up to monitor the generation and movement of hazardous wastes. Without the ability to obtain effective information and control of all hazardous wastes the national strategy is in danger of becoming merely a notional strategy, and will not proceed into the next stage, that of becoming a blueprint for implementation.'[12]

In June 1986 the Australian Environment Council adopted *National Guidelines for the Management of Hazardous Wastes*. This was not a formal strategy for implementation and the guidelines are not binding on State Governments but represent common objectives for action agreed by all of them. Despite this agreement the States when they have adopted recommendations have used different standards and many of the recommendations have not been implemented at all. The Commonwealth still has no legislation affecting hazardous wastes even though the 1982 report stated that 'if State Governments fail to introduce effective waste disposal strategies by 1985 the Commonwealth [should] legislate to control hazardous wastes to the fullest extent of its powers.'[13]

While changes have been made, the situation has not much improved. There is still no uniform classification scheme for hazardous waste, there is lack of information and conflicting controls on the generation of hazardous waste, and its transport, storage and disposal. Efforts at national co-ordination and standards for hazardous wastes have clearly been ineffectual and administration and regulations by State Governments have been ad hoc and subject to interdepartmental wranglings.

All reports whether at Federal or State levels on hazardous waste management have in varying degrees stated that minimisation is a preferred option, yet political and financial resources to support source reduction are almost non-existent. And government action when it occurs has focused on treatment options. Investigation of source reduction possibilities could substantially alter any necessary treatment or disposal options.

Treatment and disposal issues should be considered in the light of the source reduction and recycling policies that are to be developed. Disposal options need to be based on the assumption that successful waste minimisation programs will be implemented. If a minimisation policy will significantly reduce waste volumes it is absurd to spend vast amounts of money at the same time on treatment and disposal facilities that can only be justified if these facilities deal with large amounts of waste over a very long time.

VICTORIAN HISTORY

1970	• Environment Protection Act established which provided for environmental control in Victoria. The Act itself only provided a broad framework, with specific policies and regulations enacted under the Act providing the detail of environmental control.
1972	• Tullamarine Liquid Waste disposal site established.
1973	• Environment Protection Authority (EPA) introduced waste discharge licenses.
1979	• Preston municipal tip ceased acceptance of liquid wastes.
1980	• State Government asked the EPA as a matter of urgency to to devise a strategy for the disposal of intractable wastes.
1981	• The EPA arranged for a shipment of PCBs to France for a trail burn. Opposition here and abroad prevented the trial from taking place. • EPA released 'Draft Strategy for the Disposal of Intractable Wastes in Victoria' which recommended a secure landfill and storage facility be established at Avalon and that evaluation continue regarding high temperature incineration.
1981	• EPA released the feasibility study of 'Incineration Facilities for Industrial Liquid Waste Disposal'
1982	• Avalon site rejected • Minister for Conservation asked the EPA to provide a blue print for future hazardous waste disposal. • Ocean incinerator ship Vulcanus incinerated chlorinated hydrocarbon wastes and PCBs off the Australian coast.
1983	• Chlorinated wastes sent to the United Kingdom for high temperature incineration at Rechem plant.
1983	• Harpers Waste Disposal Services commenced medium temperature incineration of oils and solvents in Coburg.

1984	• Shipments overseas to United Kingdom continue for PCB wastes. • The Melbourne and Metropolitan Board of Works (MMBW) established an Industrial Waste Division. • EPA released 'Towards an Industrial Waste Strategy for Victoria'.
1985	• Caldwell Connell Engineers contracted by the EPA to do a desk study on industrial waste generation in Victoria. • EPA released the 'Draft Industrial Waste Strategy for Victoria' for public comment. • Environment Protection (Industrial Waste) Act is passed. This gave increased regulatory powers to the EPA and empowered the MMBW to establish industrial waste storage, treatment and disposal facilities.
1986	• Consultants contracted to investigate appropriate technology available for treatment of industrial waste and to provide recommendations on the most appropriate treatment system for Victoria's industrial waste. • MMBW initiated community consultation for the siting of an integrated waste facility which would include a high temperature incinerator. • Cleanaway announced their intention to stop operations at Tullamarine at the end of 1987. At the same time they increased disposal charges by 110 per cent.
1987 May	• MMBW dropped plans for a Victorian high temperature incinerator and joined with the Federal and NSW Government in establishing a Joint Taskforce on Intractable Wastes to consider a national solution to intractable wastes.
June	• MMBW announced its intention to proceed with plans for establishment of a permanent liquid waste treatment facility. This facility would not be designed to treat or dispose of intractable wastes.
November	• MMBW reported significant downturn in generation of liquid waste requiring treatment off-site. This is attributed to the 1986 increase in disposal costs at Tullamarine.
November	• Minister for Water Resources announced that a liquid treatment plant operated by the MMBW would be established in the Shire of Melton.
December	• Joint Task Force on Intractable wastes called for public comments, expected to release its report in May 1988.
1988 January	• MMBW took over operation at Tullamarine. $3.5 million is allocated towards the establishment of a temporary liquid waste treatment plant.
April	• EPA released its Draft Waste Minimisation policy.
May	• MMBW withdrew its plan for a liquid waste treatment facility at Melton due to public opposition.

Source Reduction

It is quite clear that not producing hazardous waste is preferable to any other waste management strategy. Source reduction highlights the real issue — it is the generation of hazardous waste that is the major problem, not its disposal.

Source reduction offers a number of advantages:

- total waste load on the environment is reduced
- resource conservation is encouraged
- less waste facilities are needed
- less regulatory measures are required to ensure that hazardous waste is properly treated and/or disposed of
- a safer working environment is created
- consumer safety is increased
- producers often benefit from direct cost savings.

"Despite its advantages source reduction is not yet a serious pursuit. It is at the top of every hierarchy as a theoretical goal b practical consideration and implementation are postponed t vague future."

Source reduction represents a nearly universally endorsed best option for waste management, yet in all industrialised countries it is employed to an almost insignificant extent. The pursuit of readily available source reduction options can lead to increased industrial efficiency while substantially reducing pressures to pursue inappropriate waste handling methods. Despite its advantages source reduction is not yet a serious pursuit. It is at the top of everyone's hierarchy as a theoretical goal but practical consideration and implementation are postponed to a vague future.

REDUCE IT, DON'T PRODUCE IT

In 1984 the United States Congress declared it to be national policy that wherever feasible, the generation of hazardous waste be reduced or eliminated. Yet the Environment Protection Agency's 1988 budget request for waste minimisation totalled only $398,000 - 0.03 per cent of the EPA's total budget and less than was spent in 1986.[14]

Many companies have shown they are fully capable of reducing their waste at the source by altering manufacturing processes or creating substitute products that meet the same demands. In fact it has been demonstrated that these changes have resulted in greater profit margins for some companies. If producing hazardous waste is caused by industrial economics, then reducing it at the source must be shown to be economically desirable. And it is.

A United States research group, INFORM, studied in detail source reduction techniques employed by 29 organic chemical plants. They found that, despite the cost savings that could result from source reduction measures, such initiatives were only being applied to less than one per cent of the total wastes generated. Not one plant had methodically assessed its entire operations with the aim of achieving overall waste reduction.

However the study did not conclude that waste reduction was not feasible rather it found that:

- in virtually every instance where plant managers looked for opportunities to save costs by applying source reduction techniques they found significant ones
- many measures taken for specific processes achieved greater than 80 per cent reduction in the waste produced
- few measures required to reduce waste required sophisticated technology, in fact many of the measures were simple changes in operational practices.[15]

The Institute for Local Self Reliance, also from the United States, found similar results with its case studies illustrating that:

> '. . . pollution prevention and waste minimisation are already technically feasible and have been implemented in many industrial sectors. The reductions in wastes produced ranged from 20 per cent to 98 per cent. Additionally some firms have reduced the degree of hazards of their wastes so that they no longer produce or release any hazardous wastes.
>
> Payback periods for these waste minimisation investments range from immediate to five years. Concomitantly, since each firm is producing and releasing fewer hazardous pollutants, they have reduced the hazards to their workers and to the environment. As a result, these firms will experience fewer long term waste liability and victim compensation claims.'[16]

If source reduction is so worthwhile even without Government support why hasn't it been further utilised? Companies reacting to increased pollution controls focus, like government regulators, on the proper handling of the waste to ensure that environmental concentrations don't reach 'harmful' levels. Some even appoint environment managers whose focus is handling wastes while they generally have no control on how the plant is actually operated. As a result the people who can effect waste reduction are not involved.

Most plants may be aware of their wastes and conscious of the need to comply with applicable regulations, but most do not know what specific activities give rise to what quantities of hazardous wastes. Without knowing the sources of the wastes it is impossible to take action to prevent them.

SOURCE REDUCTION METHODS

The safest way of handling toxic wastes is avoiding them in the fist place. There are a number of ways this can be done.

Product substitution — replace the toxic material in a product with a non-toxic alternative which yields little or no toxic waste. For example, substitute a water based paint for a solvent based paint containing benzene.

Input substitution — shift to less toxic input or alter input to generate less hazardous waste output from the same product.

Process modification — lower hazardous waste output from the same product and same types of input through redesign and improved housekeeping, for example check filters, gaskets, pipes, temperature and pressure regularly. Retrofit plant by installing more efficient closed loop equipment such as solvent vapor recovery systems.

Source segregation — isolate residues of industrial production at every stage instead of combining in one huge vat. Such residues often can be reintroduced into the production process without losing their potency.

Recycling wastes — is simply re-using waste materials or extracting valuable material from a waste stream. Many chemical compounds thrown into disposal sites today could be recycled or used by another industry. This can be operated through a Waste Exchange System which consists of establishing a referral system so that one industry who needs to rid themselves of a particular chemical can find another industry who can use that chemical. The old saying of one person's trash is another person's treasure certainly is the basis of this system.

INFORMATION

Knowledge is a pre-requisite to developing an effective waste management program or for developing a source reduction program. Information is essential on the amounts and types of wastes produced, from what processes, the industries involved, current methods of disposal and the costs involved to ensure that wastes are correctly handled, transported and disposed. Without this information source reduction and control of hazardous waste is extremely difficult if not impossible.

This information is also necessary for the protection of public health and to reduce the risks associated with accidental and routine exposure.

Unfortunately this sort of information is not available in Australia. For example, in 1986 the Melbourne and Metropolitan Board of Works (MMBW) contracted a consultancy firm to investigate waste generation levels in Victoria. They found that given the information available that they could only estimate the waste stream allowing for a plus or minus 25 per cent margin and information did not provide for a detailed analysis of waste streams or of the processes from which it arose. Again they commented on the need for such information -'the development of an effective and economic waste treatment and disposal system depends on the establishment of an accurate and reliable model of the waste stream.' (Camp, Scott and Furphy, *Aqueous Technology,* 1986, Volume One, pp 3-1.)

Likewise the lack of information on chemicals became apparent after the Bhopal accident — following the accident it took the US EPA several weeks to determine the locations of methyl isocyanate (MIC) production and storage in the United States.

Waste audits are the most comprehensive way to gather an accurate data base on both usage of chemicals and wastes generated by industrial processes.

The audit identifies, for each individual process happening within the plant, all specific activities that generate wastes and the amounts generated. The identification of specific sources of hazardous waste allows plants and process managers to determine what operational changes can be made to reduce wastes.

For audits to be successful the following are needed:

- All sources and quantities of wastes produced by a process must be accounted. Therefore there is a need to determine exact amounts of chemicals going into a process, created or destroyed in the process, delivered in the product from the process and wasted whether to air, water or as a solid. If the amount of wastes identified does not equal the difference between the amount of the chemical entering and leaving the process the auditor knows that other sources of the waste must exist.
- The chemicals tracked should include all chemicals used not just those subject to regulatory control.
- Chemicals need to be tracked in both the process and non process areas of the plant. Source reduction often results from changes to storage, shipping, receiving and transfer of chemicals.
- Audits are best performed by people with knowledge of the specific operations and practices of the particular plant.

Having collated the information from the plants activities auditors are then able to weigh up costs involved with specific processes and determine the viability of source reduction changes.

Chemical companies often argue that that they cannot disclose such information on chemicals due to need to maintain 'trade secrets'. However the public needs and has a right to information on chemicals and their risks in both the community and workplace. At the very least information should be made available on chemicals that are emitted to the atmosphere, are acutely hazardous, and/or are known to cause cancer, birth defects or are teratogens.

According to INFORM most firms start to consider waste reduction techniques when the more common waste treatment and disposal options on which they relied become inadequate, due to regulatory or economic considerations. Therefore they concluded that regulatory measures which involve economic considerations or incentives are more likely to be effective in leading to waste reduction than regulatory measures dictating that particular technological approaches be employed or setting levels of waste reduction to be achieved.

Likewise the Institute for Local Self Reliance found that the main motivating factors that led industry to adopt source reduction techniques were:

'1) environmental regulations mandating stricter effluent guidelines

2) rapidly increasing costs of previously inexpensive waste disposal approaches such as landfilling

3) enactment or potential enactment, and enforcement of regulations pertaining to joint and several liability, worker and citizen right to know laws, and victims compensation.'[17]

It is clear that enormous potential exists for waste reduction initiatives due to the problems hazardous waste poses to human health and the environment, and the problems associated with disposal. Several factors are essential to the development of this potential:

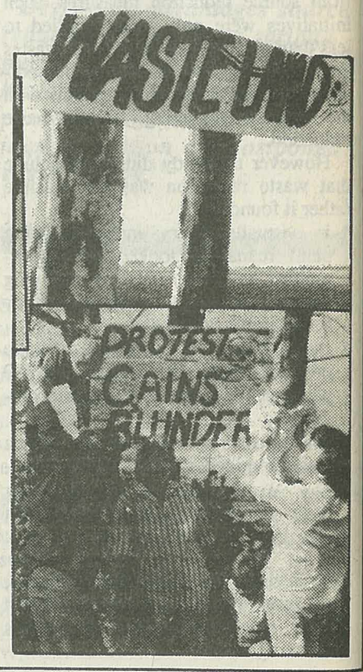
- data on hazardous waste sources, and information exchange on the viability of source reduction methods
- study of all aspects of the production process with input from the people who handle or regulate wastes
- recognition that no single mechanism by itself creates effective source reduction.

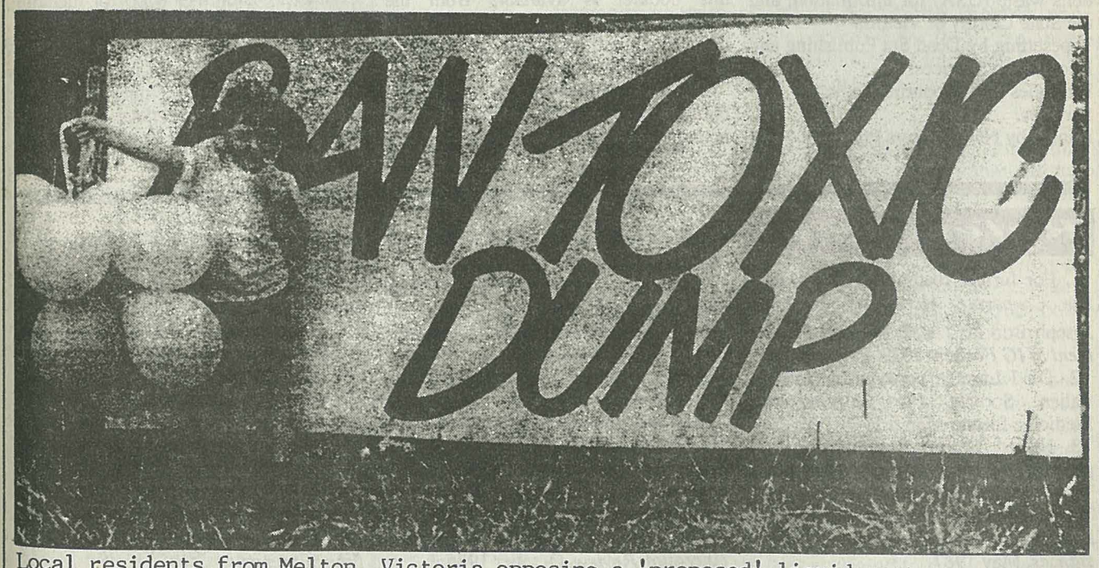
Source reduction requires strategies that deal with the production process itself, examining where wastes are generated and how they can be reduced. Industry needs to take more responsibility for the societal costs and risks associated with their products. Substances should only be used after they have been proven safe rather than being restricted by Governments after it has been shown that they cause unacceptable harm. This differs markedly from the current situation where treatment and regulations focus on the industry's end products.

Governments and industry have stated that source reduction is the top of their waste management priorities. Yet government, industry and some environmentalists have focused on the disposal and destruction of hazardous wastes. A number of groups around the world are taking up the issue and rather than waiting until the waste is created and leaking into the environment community action groups are looking to stop the production of hazardous wastes at the source. This approach is sometimes known as 'soft chemistry' and is gaining increasing recognition. Lois Gibb, founder of the Citizens Clearinghouse for Hazardous Wastes (USA), says:

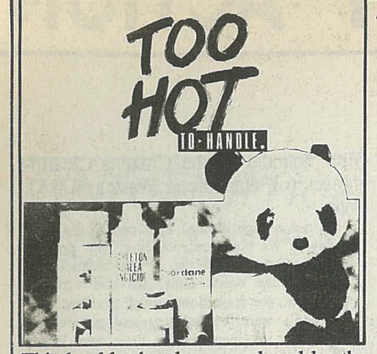
> 'It's not a pipe dream. This can all be done today. If we combine recycling, new production methods and the use of new technologies to clean up waste sites, we can virtually eliminate our hazardous waste problem. But we can't wait for industry and government regulators to accept this on their own. It will take tough community action and citizen pressure.'

". . . and rather than waiting until the waste is created and leaking into the environment, community action groups are looking to stop the production of hazardous wastes at the source."





Local residents from Melton, Victoria opposing a 'proposed' liquid waste treatment facility - the proposal has since been dropped. (May 1988)



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The FOE Bookshop has a range of books on hazardous chemicals so come in and browse or write for a catalogue.

Or if thats not enough the FOE hazardous chemicals campaign meets regularly and you can become involved. Contact FOE on 419 8700 for meeting details.

Or get in touch with the Environment or Conservation Centre in your State. Contact your local member of Parliament who should have details of hazardous chemicals in your area.

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POLY CHLORINATED BIPHENYLS

The term PCBs is an abbreviation for polychlorinated biphenyls. These are a large group of synthetic compounds formed by the chlorination of biphenyl and having the chemical composition $C_{12}H_{10-n}Cl_n$ in which n is greater than 2. The term PCBs is also used to define mixtures, including wastes, which contain chlorobiphenyls in a quantity greater than 50 parts per million.

PCBs are clear, pale yellow liquid, semi-solid or solid substances, their consistency increasing with their chlorine content. PCBs are extremely inert chemicals, for example they are stable at temperatures up to 862°C. Their fire retarding properties meant that they became widely used in the electrical industry mainly in electrical transformers where they are circulated inside to keep the unit cool. However they were also used in adhesives, paints, printing, inks, fire retardants, carbonless copy paper, hydraulic fluid and a range of plastic goods, as well as fluorescent lights, air compressors and air conditioners.

PCBs were first synthesised in the 19th century and commercial production of PCBs began in 1929 by the US company Monsanto.

In 1943 the New York State Department of Labor published a report on outbreaks of chloracne, dermatitis and deaths due to liver damage amongst workers handling equipment containing PCBs and similar compounds. However the use of PCBs was not widely questioned until the 1960s. In 1966 Swedish chemist Soren Jensen announced that he had identified a group of organochlorine compounds that was accumulating to toxic concentrations in nature. Following this discovery PCBs were found to be present in most ecosystems throughout the world.

Then in 1968 many Japanese residents of the island Kyusha developed what they called 'yusho' — rice oil disease. They suffered from bone deformities, jaundice, loss of memory, eye discharge, skin discoloration and a host of other ailments. It was discovered that PCBs used as an coolant had leaked and contaminated rice oil.

Following these events in the 1970s manufacture of PCBs ceased in several countries including the United States, United Kingdom and Japan, and controls were placed on their use and disposal. However it is estimated that 181,000 tonnes of PCBs are currently still in use in the EEC and it's rumored that France and Spain still continue to produce PCBs. (New Internationalist March 1986)

However prior to the stop in production over one million tonnes of PCBs had been produced in the developed countries. Unfortunately much of this tonnage has been disposed direct to the environment through emissions from manufacturing plants, dumping of PCB wastes into rivers and landfill sites and by atmospheric dispersion of PCB particulates from uncontrolled burning of wastes. As the compounds are very stable and resistant to natural breakdown, they can accumulate in the environment and in wildlife. The process of bio-accumulation has resulted in humans being exposed to PCBs through food intake and especially through consumption of fish.

Australian Usage of PCBs

PCBs have never been manufactured in Australia but were imported up to 1980. The table below gives an idea of the amounts of PCBs imported into Australia during the 1970s. However these figures are for bulk PCBs and it is unknown how many PCBs were imported in manufactured goods.

Usage of PCBs in Australia 1971 to 1980 (Tonnes imported[a])

1971 — 400 tonnes[b]
1973 — 160 tonnes
1975 — 300 tonnes
1977 — 13.5 tonnes
1978 — 32.5 tonnes
1980 — none

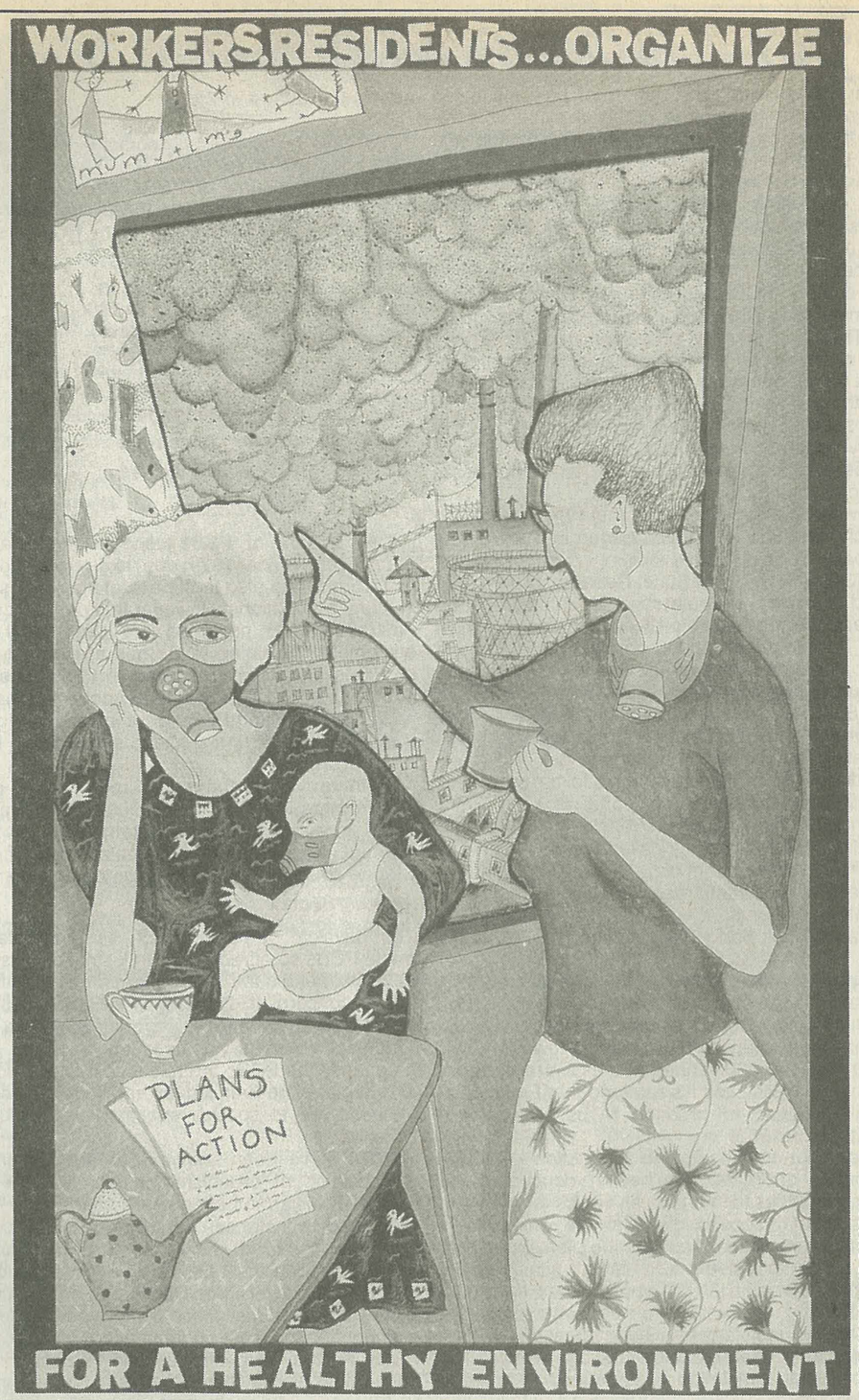
The amount of PCBs used in Australia declined dramatically since 1975 due to import and handling restrictions, and also to the use of substitutes for PCBs in many applications. However that does not mean that Australia's PCB problems are over. Most electrical equipment containing PCBs has a extremely long life, so PCBs are still in use in some transformers. Unfortunately before 1972 most PCB containing material had no label stating that PCBs were inside therefore people unaware of the potential hazards may dump PCBs into water or landfills.

Furthermore it is common to retro-fill PCB containing transformers with substitute fluids, this practice can result in serious cross contamination of the new material. Disposal of the new material may then lead to a future source for PCBs to enter the environment.

Health Effects

The physical properties such as great stability that made PCBs so attractive for industrial purposes are the same properties that make them an environmental and health concern. In the body they build up in the fatty tissue and show virtually no tendency to be excreted. When fat reserves are used up — ie. by dieting or pregnancy the PCBs are released into the bloodstream and damage the liver, kidney and thyroid gland. Unborn foetuses are at special risk, their tissues being very sensitive.

PCBs have been shown to affect the growth and reproduction of organisms at all levels of the food chains. The harmful effects to humans have been well publicised in instances where large scale contamination has occurred such as with the residents of Fukuoka Japan in 1968. However information on the effects of low level chronic exposure are not consistent. It is in this area that there is the most concern as the majority of people are contaminated to some degree by PCBs. A study of pesticides and PCBs in breast milk undertaken by the State Chemistry Laboratory Victoria found that PCBs were present in 80 per cent of the samples.



KATE BREAKEY AND DEBORAH KELLY. 1987.

The Campaign Against Nuclear Energy (CANE) in South Australia had a long and important history as part of the anti-nuclear movement in Australia. In this edition of *Chain Reaction* we have two articles which cover some of the issues surrounding the 1987 closure of the organisation. The authors also address some of the things which made CANE so valuable and suggest some areas where there was room for improvement. The specific points raised relate to CANE, but there are many political organisations where some lessons may be learned from the CANE experience.

~~CANE~~ is dead - why?

***'Cane is dead — why?'* was first published in *Third Opinion*, the newsletter of the NSW Movement Against Uranium Mining. Clare Ralfs and Penny Miller were two of the people involved in the official closure of the Campaign Against Nuclear Energy in May 1987 and they write of some of the issues surrounding that event and look to future anti-nuclear work.**

On Sunday May 10 1987 around sixty people met in Adelaide to mark what was for many of us the end of a political era. We shared our experiences, told stories and relived the memories, all captured on video, of Honeymoon and Roxby. It was also a time to reflect on our political past and to project a new political future.

In its 'heyday' four years previously, CANE had a membership of over a thousand, ran a cafe, a bookshop and a full time office. During its 12-year history, CANE organised three major anti-nuclear actions: the first ever occupation of a uranium mine at Honeymoon in South Australia in 1982 and the first and second Roxby Downs blockades in 1983 and 1984.

CANE also planned many local actions and always maintained a high profile on uranium mining. We called for an unqualified end to the uranium mining and nuclear power industries. Direct actions, rallies, school talks, media events, dances, book stalls, badges, t-shirts, stickers and graffiti were all part of our creative expression and desire to stop the industry.

CANE worked with unions, women's, peace and Aboriginal groups and political parties. There was also a strong sense of being part of, and accountable to, a national and international movement. In the last years, people who made up CANE worked hard to use and develop consensus decision-making, the collective process, skills sharing and task rotation. We adopted the strategies of non-violent civil disobedience.

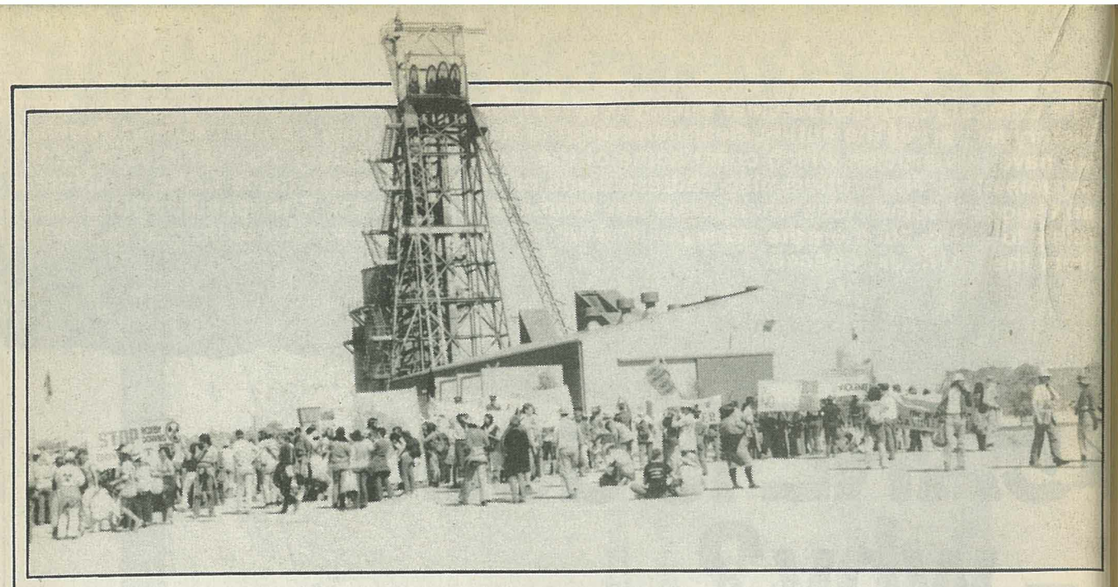
Activists in CANE have struggled long and hard at uranium mines, on the streets, in their workplaces and within themselves. We celebrate those years, those people, those struggles and those lessons.

But in April 1987, after two years of battling to pay debts and fill office rosters, 25 people including three founding members agreed CANE was no longer a viable organisation. Meanwhile, Roxby moves into yellowcake production, exporting from Port Adelaide's Nuclear Free Zone as early as 1988. Regrettably, we haven't stopped uranium mining.

Still, we believe that CANE's demise does not mean defeat or failure. CANE's closing reflects a time of change and the need for new and different ways of challenging the uranium industry. We feel CANE's loss of momentum was because its structure was too centralised and that people's expectations were such that we would only fulfil them by becoming a bureaucracy. And we didn't want to do that.

The immense political impact and diversity of activities between 1982 and 1984 particularly, were inspiring but simply not sustainable. Firstly, the expectation that CANE would or should be responsible for generating this political energy became a suffocating burden. As a result, many people left the organisation, often disillusioned or critical or simply tired and 'burnt out'.

The history of CANE provides many valuable lessons. We've certainly learnt a lot from our time with CANE and we continue to use those experiences in our present political and personal lives. Nontheless, the decision to fold the organisation is equally valuable in that it leaves the way clear for new and equally creative responses to the uranium industry. We came to the realisation that the structure of CANE was no longer effective as a means to carry on the work that we felt was important. If structures are a hindrance, rather than a support for our work, then they can and should be discarded. There is no point maintaining an unused office, filing cabinets and a phone. As



well, CANE barely functioning was an easy target for dumping frustration. Things like: 'Why aren't there more people involved?', 'Why aren't you doing more?', 'Why aren't you doing this?' This kind of unhelpful criticism is unfortunately thrown at many organisations. Rather than simply allowing people to 'CANE bash', we closed CANE so people could create something more positive.

For us to progress now, we need a form of 'organic politics' that is based on the knowledge and appreciation of the natural rhythm of growth and decay. And specifically, how social movements rise and fall. This means leaving behind some of the political practices and attitudes common in Australia that were also present in CANE:

- The mentality that big means better
- Centralised hierarchical structures
- Single issue campaigns
- The lack of trust that allows us to fall prey to the competitive and destructive blaming of fellow campaigners.

These practices promote speediness or the 'too busy' syndrome and ultimately lead to burnout. Both of these states of being are constant points of friction and tension among activists and it also contributes to making organisations inaccessible to new members. When we are pressured, we're more judgemental and less flexible. Our nuclear-free world can't be founded on these attitudes. Our commitment is then to build and develop political practices that reflect our vision of an environmentally harmonious, co-operative, just and nuclear-free world.

With CANE's closing, we knew that no group was monitoring Roxby, even though some individuals were and are still keeping an eye on the mine. Letters from overseas and interstate requesting information kept arriving in the now empty office and in our private letter boxes. We talked with activists in the Coalition for a Nuclear Free Australia network about what to do and agreed there was a responsibility to monitor Roxby and make information available to other groups. This was the least we could do.

We are about to employ a Uranium Information Coordinator, who will be paid to spend two to three days a week researching uranium mining in South Australia. It is not a campaign position and will only collate, research and distribute information to whoever wants it. This way we hope to encourage many groups to respond and oppose uranium mining.

We are not asking them to respond in any particular way, but simply what's most appropriate for them. We are not asking them to drop other issues. Instead, we are proposing that the uranium issue be integrated into other activities and campaigns. This is all part of our desire to see anti-uranium activity based on: decentralised responsibility; cooperation between individuals, groups and social movements; and work that is sustainable.

So far, church groups, trade unions and environment groups are involved. The position will be overseen by a steering collective comprised of a member of each of these groups.

The idea is not to create a new organisation. We don't think this is appropriate. Rather, we prefer to see a diversity of groups and activities locally, nationally and internationally. Up-to-date information is crucial in any campaign and this is what the new position will provide. There is ample room for many different forms of action. We don't need to belong to the one organisation to respond and influence the nuclear industry. In fact, the nuclear industry and the police state are generally less equipped to deal with a multitude of skilled and informed small groups actions than one large action, for example, the small action campaign at the 1984 Roxby blockade. There is strength in diversity and difference.

If we learn to respect and value our differences, we can learn to respect each other as activists. And we'll find cooperation and strength that is truly powerful, is not false nor forced unity. Our struggle for a nuclear-free world is courageous, but long. Our diversity and difference can be an advantage rather than a hindrance.

For us, the future after the national Roxby blockades and the intense activity within CANE is about being creative and flexible and not entrenched structures or dogmatic ways of thinking. We need times of evaluation as much as we need times of activity, just as we need both winter and summer. This is the context in which we see the closing of CANE, as a transformation of political energy, not a failure. CANE is closed but we know there are many people still equally determined to close Roxby down.

Clare Ralfs and Penny Miller were members of the Campaign Against Nuclear Energy and both held positions in the organisation at various times. They wish to acknowledge the assistance of other ex-CANE members and thank them for their ideas.

Non-violence can be lethal – why CANE died

***'Non-violence can be lethal — why CANE died'* is in part a response to the first article, and in part an alternative view on the structures which underpinned CANE and many other political organisations. Ally Fricker raises a number of points to consider about consensus, non-violence and the strategies of the anti-uranium movement.**

The survival of the ALP's anti-uranium policy was crucial for the political left. The overturning of the policy signalled the left's defeat. It was here in South Australia, home of the world's largest uranium deposit, where Labor's uranium policy was truly tested, and it was here that a strong anti-uranium movement was most needed.

The article, 'CANE is dead — Why?' does not do justice to the movement which struggled for many years to combat the development of SA's second era of uranium mining. I would therefore like to respond to the very limited viewpoint of its authors, Clare Ralfs and Penny Miller.

CANE in Adelaide was effectively dead long before its formal burial in May 1987. From the period following the 1983 blockade of Roxby Downs it was increasingly ineffectual and could not respond to massive traumas and developments in the nuclear industry such as the meltdown at Chernobyl and the proposed introduction of food irradiation into Australia.

CANE lacked any clear sense of direction and was incapable of providing leadership to the tens of thousands of people disillusioned with both State and Federal Government policies on uranium and nuclear issues.

The Ralfs and Miller article takes no cognizance of the fact that CANE did not exist in a political and social vacuum. For two people claiming a long association with the organization, their appraisal offers remarkably little insight, but instead turns into a justification for the funding of an Uranium Information Co-ordinator to monitor Roxby Downs — Ralfs and Miller have been involved in an appeal to raise $10,000 to fund the job — something which they were incapable of doing while CANE was still in existence and with all the apparently burdensome paraphenalia of office, files and telephone at their disposal.

The main point which the article would seem to be making, is that the structure of CANE was not appropriate. It says, 'We came to the realization that the structure of CANE was no longer effective as a means to carry on the work that we felt was important. If structures are a hindrance rather than support our work, then they can and should be discarded'. As a trenchant critic of CANE's method of work I could not agree more, but rather than discard the structures, it seems the organisation itself had to go!

The dominant position in CANE, in its final years, was a commitment to consensus decision making (non-decision making), non-violent philosophy and separatist feminism. These attitudes and the attempts to put them into practice, led to a proliferation of portfolios, or collectives, often of no more than a couple of people each, lengthy and indecisive meetings, anti-leadership rhetoric, a spurning of experienced people — a CANE newsletter on consensus distributed in 1984 said 'beware of experienced people' — and a cold-shouldering of people who did not fit into the dominant mould.

Clearly the practice of consensus and non-violent philosophy became far more important than stopping uranium mining. There was seen to be a direct link between male-female relationships, CANE's internal organisational structures and the development of powerful global conglomerates, such as the nuclear industry. Consensus was meant to engender mutual trust in its participants, forge agreement where there are often genuine differences and to combat sexism, manipulation, centralism and hierarchies — the very things, which according to Ralfs and Miller, were still entrenched in CANE when it folded.

Consensus was perceived as somehow ultra-democratic, superseding the need to be organised, coherent or the need to vote. In practice consensus confuses criticism with personal difference, stifles debate, ridicules articulateness and allows the most undemocratic of all practices, the right of an individual to 'block consensus' i.e. for one person to stop an entire group's decision.

When the practice of various theories becomes more pressing than the issue, in what is supposed to be a broadly based single-issue organisation, then almost certainly the end of the road for the organisation is not far out of sight.

The 1970s was a period of relatively vigorous social movements in Australia. There was a deepening awareness of what ecology was — the Radical Ecology Conference held in Melbourne in 1975 produced some excellent discussion and papers which have probably not been substantially advanced upon — the Green Bans of the NSW Builders' Labourers were recognised internationally as breaking new ground in trade union and social movement collaboration; the Aboriginal Land Rights movement gained recognition and led to substantial legislation in South Australia; the women's movement was very active and exploring many different directions.

It was in this atmosphere that CANE developed and became a meeting point for people from the alternative and ecology movements and the left. (Previously the left had mostly regarded concerns for threatened species and outrage against environmentally destructive technologies as purely bourgeois pre-occupations and diversions from the real issue of economics).

Strider, an ecologist and activist who lives in the Northern Territory said in one of his many papers that the left railroaded the growing ecology movement. Probably the preponderance of CPA (Communist Party of Australia) members in the leadership of CANE throughout most of its history,and the directions in which they took it, would prove Strider's point.

To demonstrate that point I will relate a small incident. At the end of 1982, Karl Rossel, a West German journalist at the time working with CANE, and myself, called a one day conference to discuss the wider environment movement and the function and role of the various groups within it in South Australia. I believed that such a wide ranging discussion and exchange was long overdue and I had been endeavouring, without success, to get the SA Conservation Council to convene such a meeting for some time.

My position at the time was, and still is, that the uranium issue is just one of many crucial issues within a wider movement and that people have to recognise each other's area of work without necessarily claiming priority for their area or issue. Furthermore there was then, and still largely remains, a need to provide an analysis and a vision which will allow us to do more than simply respond to each new environmental onslaught as it arises.

The occurence of the conference was seen as a threat and a distraction by some of the leading comrades in CANE, who were presumably worried that we were suggesting that the nuclear issue or uranium mining was not the only issue of the day. They seemed to reel away from a point of view which says that nuclear technology is not simply an aberration but that there are deep problems with modern technology which require a rethinking of much of traditional Marxism.

One leading activist in CANE for many years was so alarmed at the day's proceedings that she claimed that we had just witnessed the historical demise of the anti-uranium movement. A mere two years later it seemed her prophecy was to be fulfilled. (The conference was not set up to try and steer CANE from its stated objective of opposition to the nuclear fuel cycle, but to put the anti-uranium mining movement in the perspective of a wider movement and debate.)

By the beginning of the 1980s the sting had gone out of most of the social movements and the ALP was agonising over the uranium issue as it prepared to go to the polls in Victoria (which was to declare itself a nuclear-free State), South Australia and Federally.

Don Dunstan was Premier in South Australia until 1979 and held an increasingly anti-nuclear position, which was strengthened by his tour of nuclear installations in Europe in January 1979. One month later he retired due to physical collapse.

Because of the massive uranium deposits here in South Australia, and the perceived economic benefits expected to flow from them, a strong anti-uranium organisation was crucial. Clearly there was going to be a lot of pressure to bring any opposition undone and no doubt that pressure played a role in causing Dunstan's illness and premature retirement from politics.

During much of this period CANE was preoccupied with the wrong strategies and it took considerable and persistent pressure to get it on the right track. Alternative energy displays and bike rides around the city were the order of the day, while all the time the mining companies were gearing up and the Right of the ALP was chipping away at the party's good uranium position.

In spite of Dunstan's position, many companies were given exploration leases, and drilling rigs were working away across much of the State and sending sample cores to the Adelaide suburbs for analysis. CANE was in existence for several years before it really began to focus on the promoters of the nuclear industry in Australia — the mining companies and their collaborators in governments. Likewise CANE was also slow to develop tactics that would in any way stir people to become involved or worry policymakers.

It was not until 1982 that CANE finally committed itself to the use of direct action when it supported the call for a demonstration at the Honeymoon uranium minesite; a call to action which came primarily from groups outside Adelaide.

After the Roxby Downs Blockade in 1983 I asked one of the CANE organisers (also a CPA member) why they had waited so long to take direct action. The reply was that prior to then the people had not been ready for it!

More often than not the leadership of CANE acted as a dampener on the movement rather than initiating strategies and actions which would develop a momentum. How much of this was due to the inherent conservatism in the CPA, how much due to deliberate manipulation and how much due to the personal cautiousness of movement bureaucrats who inevitably move to dominant positions, is hard to say.

But certainly all factors have been operating throughout CANE's history and continued to do so during the period with which Ralfs and Miller were more familiar.

Another preoccupation within the organisation, which tied up resources and energy, and again kept the main focus off the issue of uranium mining, was the push to create suburban nuclear free zones (NFZ's). In an appeal to CANE in August 1981, I wrote, 'On the NFZ issue we must keep in mind the very different nature of eastern state local governments which tend to be political-party based and those in SA which are not. When NFZ campaigns begin as genuine grass roots residents' actions I think it is well deserving of back-up support from CANE i.e. by supplying leaflets, stickers, speakers, etc. Beyond that it would be left very much to the local people and not be seen as a major campaign for CANE. The declaration of a NFZ must be seen as a gesture and not as an end in itself — that end should be to stop the mining and processing of uranium'.

A couple of months after writing the letter to CANE, I was told by a rank and file member of the ALP in Melbourne, that the push by Labor controlled Councils in Victoria for NFZs was a deliberate measure to keep the contentious issue of mining itself in the background. CANE could not see that its strategies were playing into the hands of the ALP Right and that as a means of challenging the mining companies NFZs were as good as useless.

The futility of the NFZ campaigns still continues in some parts of Adelaide. As recently as May 1987, thousands of dollars were spent conducting a survey asking candidates in local government elections what their views were on nuclear issues in their local area, and trying to get meaningless signs erected in suburban streets.

When tackled about this process the people involved in these NFZ campaigns tell me that this process is 'empowering' people. Never have I known so much 'power' to be so invisible.

In the early 1980s the proposed deployment of Cruise and Pershing missiles in NATO countries was creating a massive upswing in the nuclear disarmament movements across Western Europe and by 1983 the peace movement had virtually eclipsed the much more militant anti-nuclear power movement. Australians, as derivative as ever in these matters, followed suit, and the call went up for 'Peace and Disarmament', for Peace North, South, East and West, for Peace Parks and Punks and finally Peace Minutes. The movement grew numerically and suppressed any debate on foreign policy and the nuclear fuel cycle.

Many anti-uranium activists moved across to the peace movement and those who did not expended large amounts of time and energy trying to win the peace movement to a better position vis a vis uranium mining. Notably the peace movement had a particularly weak position on uranium mining in SA where it mattered most.

Once again the anti-uranium movement seemed to play straight into the hands of the ALP Right by losing sight of its main opponents (the mining industry) and joining forces with the peace movement, whose lowest common denominator slogans and strolls on Palm Sunday would upset no-one, least of all the ALP.

Pursuing strategies which wasted resources and did not confront the real problem; the use of tactics which hindered rather than developed activism; and the limited grasp of the nature of the ecological crisis by the Left, who so often held influential positions in the movement; have all played their role in inhibiting the growth of a mature and strong anti-uranium movement. However, at no time in its history was CANE as inaccessible and incapable of dialogue as it was in its final years.

It was then that consensus, and all the paraphenalia that it implies, was elevated to a super, anti-hierarchical process capable of transforming competitive society.

There was much confusion and hypocrisy about non-violence, the other side of the consensus coin. Left, anti-nuclear and peace activists, who supported the Sandinistas and other armed revolutionary struggles, were caught between the use of passive resistance as a practical tactic in situations of civil disobedience or physical confrontation, and the process of turning middle class pacifism and fear of one's own physical harm, into a lofty and moral ideal.

Attempts to define 'violence' floundered and people no longer knew if getting angry, writing grafitti or simply raising one's voice was any longer permitted. So much priority was given to promoting the non-violent nature of the movement and its activities that even the slightest gesture made out of line could be pounced on by the media to undermine the movement or expose hypocrisy. The fence shaking episode at Honeymoon is an example of how the media turned this preoccupation with non-violence back on the movement.

Somewhere in the middle of all this dedication to non-violence, (role-playing, workshops, etc.) the violent nature of the nuclear industry became increasingly obscured.

Likewise attempts to run mass meetings along consensus lines at the Honeymoon and Roxby actions were a total farce and should have been rejected by the movement immediately. Consensus was adopted in the hope of making meetings more accessible and friendly. But it has become a monster which is debilitating and destroying organisations so effectively that it deserves a thorough investigation.

Consensus probably more than any other factor destroyed CANE in its final years.

Meetings run on consensus lines tend to break up into myriad smaller meetings, thus duplicating proceedings and exhausting people needlessly. The method discourages participants addressing the whole gathering (making speeches is quite forbidden) and because everyone is expected and encouraged to contribute all the time, there is a lot of repitition and people speaking for the sake of it. This results in long meetings, and ironically, the necessity for rigid time keeping of speakers.

Such meetings inevitably have enormous difficulty in reaching decisions — in fact reaching a decision is such an achievement that I have actually seen people jumping up and down in glee and clasping each other in satisfaction and relief.

Leadership and prominence (being up front) and even articulateness are eschewed in this environment. The fact that certain individuals remain dominant and de-facto leaders is largely denied.

Traditional meeting procedure and most democratic practices, including voting of course, have been thrown out the window — there are no appeal systems with consensus. What is claimed as a super democratic process turns out to be the opposite.

Ralfs and Miller do not tell us in their article how the structures which they say hindered CANE operated. They refer to 'centralised hierarhical structures', but offer no description, and then, quite remarkably they refer to 'single issue campaigning' as a problematic attitude in CANE and one which should be abandoned! One can only wonder why they joined CANE in the first place.

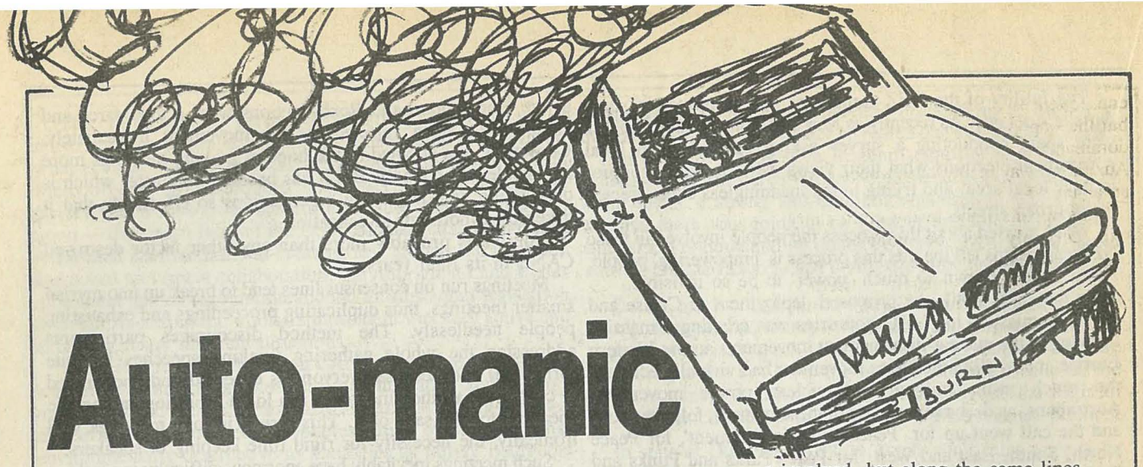
The authors also complain about the 'suffocating burden' of CANE being expected to generate campaigns, etc. Critics of CANE were labelled as personally oppressive, and this attitude is reflected in the article. People who asked legitimate questions about CANE's inactivity and lack of direction are accused of 'dumping frustrations'. Again the most basic of questions needs to be put: why have an organisation if it is not willing to initiate campaigns, etc?

But irony is forever present. CANE, in spite of the authors' implications, repeatedly acted as though it was the sole legitimate mouthpiece and expression of anti-uranium sentiment in South Australia. CANE activists tried to stop other people from addressing the media, washed its hands of the vigil groups which remained at Roxby and Honeymoon, and publicly distanced themselves from activities they did not endorse e.g. the Canberra National Rally and spontaneous groups such as the Nomadic Action Group.

Now the remnants of CANE want people to cough up $10,000 to monitor Roxby. (Uranium Information Co-Ordinator — No thanks!)

I should like to close by congratulating the people who remained at centres such as Maree and Andamooka, and while monitoring the situation at Roxby as closely as possible, were largely ignored by CANE and unacknowledged by Ralfs and Miller.

Ally Fricker was an organiser with Friends of the Earth in Port Pirie in South Australia's mid-north and later a member of CANE. She would like to thank Bob Lamb for his contribution in the writing of this article.



Auto-manic

The motor car is the common denominator in a number of debates that are currently underway in our community. Despite bearing the responsibility, either completely or at least to some degree, for a number of very serious problems we're facing, amazingly there's been virtually no debate that gets to the heart of the matter. The car's position in our society seems as entrenched and unchallenged as ever. For a while anyway, its exhaust pipe can breath easy! *Bob Fuller* takes a brief look at the issues and the way the individual debates have been conducted, and points out how the real culprit escapes attention.

First of all, we have the high profile coverage in the media on motor car accidents. This always seems to come to a head around Christmas time, when daily we get the 'score' — how many of each other we've managed to kill. The figures are trotted out with such boring regularity that they make no impact at all.

Last year, around Australia, 2,752 people died on the roads — over five times the number who died in Vietnam. Remember how outraged we were about that. Perhaps we should be comforted by the figure. At least it was the lowest number since 1963! But what about the cost?

Each death, according to the Federal Office of Road Safety, costs the community $450,000. Road accidents overall cost us a staggering $5.7 billion.

Its well worth putting this figure in some context to see what our priorities are. The Federal Government in its last budget, of which it was so proud, spent $250 million on establishing the Family Allowance Supplement, saved $200 million in 1988-89 by abolishing the CEP programme and saved $100 million by cutting some people off the dole. The cost of road accidents is, in fact, a bit more than the whole of the federal education budget.

And what sort of solutions are suggested to curb the road carnage. Such things as improved driver education, improving driver skills and outlawing drink driving. Part of the medical profession even sees wearing crash helmets in cars as the answer. Never is there any suggestion of limiting car ownership, or their use, or replacing them with safer and cheaper alternatives.

The debate on Australia's declining reserves of crude oil is also creeping into our newspapers. Take for example, the catchy slogan put out by Esso. 'The less we have in Bass Strait, the more we'll be in Dire Straits'.

We are told in their advertisement that 'Bass Strait oil kept eight out of ten Australian cars on the road in 1985, it'll keep only six out of ten in 1988 (no cause for celebration there) and only two out of ten in 1996'. By that year, they (Esso) estimate the oil import bill will rise to perhaps $3 billion — fifteen times its current level.

The solution for Esso is simple — lower their company tax rate and they'll do the rest by finding more. Other commentators aren't quite so sure about that, and so their solutions are a bit more involved, but along the same lines.

At last years ANZAAS conference, for example, a Dr. Elesfrom, having warned of the cripling effect of importing half our oil in the 1990's, suggested developing the massive Shale oil deposits of Queensland. The cost to keep our beloved motor cars on the road would be over $10 billion, and would see 'the biggest civil engineering project mankind (his sexism, not mine) has ever undertaken'. There would, he admits be a bit of a 'problem' disposing of the waste — enough daily 'to cover an area of metropolitan Sydney to a depth of one metre'. Add to this, the amazing quantities of water that are required, and we'll create ourselves quite an environmental nightmare. And that's to add to the one that the cars are contributing to in the first place.

Which brings us to the so-called greenhouse effect. The carbon dioxide content of our air is increasing at about 0.5 per cent per year, and its mainly due to the burning of fossil fuels — oil products, coal and gas. Carbon dioxide and water is what you get in the exhaust of a car under ideal circumstances. In practice we get all sorts of other pollutants as well — nitrous oxide, hydrocarbons, lead and carbon monoxide — which are also having a serious effect on the air quality in our major cities. People in Melbourne, for instance, get warnings over the radio on some days, advising us not to use our cars unnecessarily. There's a cost attached to this pollution — estimated in 1974 in the USA, for example, to be $1.6 billion.

The climatic changes being predicted for Australia due to global warming are now being openly discussed. Changed agricultural production; rising sea levels, more frequent floods and droughts, and tropical cyclones occurring further southward are among them. The Commission for the Future has launched a 'project' to raise public awareness of the consequences of the greenhouse effect, but the unpopular subject of ending the dominance of the motor car in the Australian way of life hasn't been given an airing.

Raising this issue in the community will certainly not be popular. The Swedish equivalent — the Secretariat of Future Studies — apparently tried to debate the subject some years ago, and even the progressive Swedes were horrified at the idea of doing without their Volvos. So what sort of reaction could we expect if it was suggested that the Holden become an endangered species.

The desire to own and drive a car obviously involves more issues than that of covenience. Kenneth Boulding described the emotional motivation to car commuting beautifully. 'The automobile, especially, is remarkably addictive. I have described it as a suit of armour with 200 horses inside, big enough to make love in. It is not surprising that it is popular. It turns the driver into a knight with the mobility of the aristocrat and perhaps some of his other vices. The pedestrian and the person who rides public transportation are, by comparison, peasants looking up with almost inevitable envy at the knights riding by in their mechanical steeds. Once having tasted the delights of a society in which almost everyone can be a knight, it is hard to go back to being peasants'.

Whether we can be gently persuaded to see the error of our ways or whether we'll have to be forced to change are unfortunately not the only possible scenarios, The thought of not having personalised power transport may be so frightening to the majority, that the problems will be either ignored or patched up at huge cost to the community. But there is evidence of hope that the broad mass of people will change, given the opportunity.

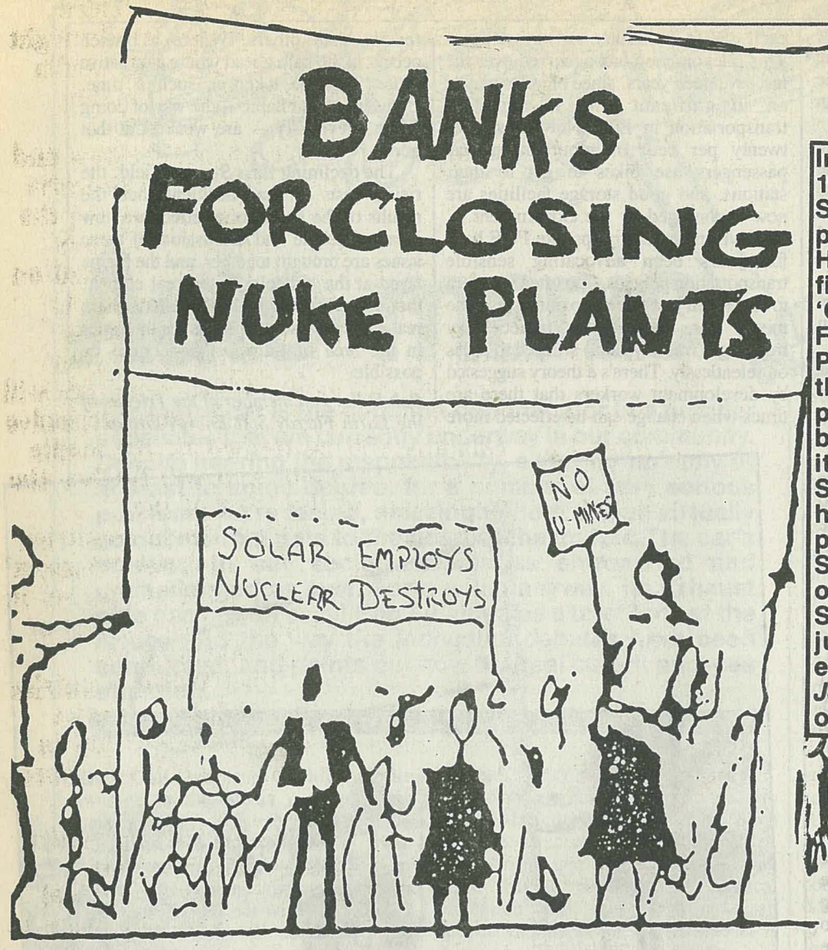
Fifteen years ago, Toronto was a city operating very much in the typical US style — basically developed around the motor car. By adopting a deliberate policy to move away from this kind of model, a different kind of city has emerged. It has a vigorous centre and subcentres linked by up to seven different types of transit systems. As a result, although it has two to three times the population density of Australian cities, it functions with 62 per cent less road per person than Melbourne and Sydney, and use of public transport has increased 44 per cent, while our own record shows a decline between 1960 and 1980.

In Japan, there are apparently about two and a half million bicycles parked each day at commuter railway stations. This phenomenon has occurred over the last seventeen years, since bicycles played an insignificant role in Japanese transportation in 1970. Nowadays, over twenty per cent of suburban railway passengers use bikes to get to their stations, and good storage facilities are now encouraged by the Government.

Environmental groups like FOE have for years been advocating sensible transportation policies. Too often we seem to have been just talking to ourselves. The motor car and all its unnecessary trappings (freeways etc.) seemed to press on relentlessly. There's a theory suggested by development workers that there are times when change can be effected more readily than others. Where a branch occurs in the path ahead where alternative routes may be taken is such a time. Convention and habit — the way of doing things previously — are weakest at that point.

The declining Bass Strait oilfield, the rising costs of road accidents and the results of the greenhouse effect are now areas of debate and discussion. If these issues are brought together, and the blame layed at the 'wheels' of the real culprit, then the climate could be created where real and long lasting changes for the better in the area of transportation could be possible.

Bob Fuller is a member of the Friends of the Earth Fitzroy Soft Energy Group.



In the last days of January 1988, the main owners of the Seabrook nuclear power plant, Public Service of New Hampshire (PSNH), officially filed for bankruptcy under 'Chapter Eleven' of the US Federal Bankruptcy law. PSNH owned 35.6 per cent of the Seabrook nuclear power plant and had sunk $US2 billion, about 70 per cent of its assets, in the plant. Seabrook was originally to have been a twin 1150Mw pressurised water plant. Seabrook-2 has now been officially cancelled, leaving Seabrook-1, at $US5 billion, just about the most expensive plant in the US. *John Hallum* gives a history of the plant.

The Seabrook reactor was built on the coast of New Hampshire, near the border of the state of Massachusetts, some of whose power companies held shares in it. So close in fact, was Seabrook to Massachusetts, that a substantial portion of Seabrook's 10 mile radius 'Emergency Planning Zone' (EPZ) was actually within the state of Massachusetts — a fact that was to cause enormous problems later on when the state of Massachusetts refused to cooperate in drawing up emergency evacuation plans for the plant, making it effectively unlicensable.

It was the inability of the owners, Public Service of New Hampshire (PSNH), to get Seabrook licensed and operating, coupled with the massive cost of the plant and the reluctance of state regulatory bodies to allow PSNH and other owners of the plant to charge customers for it, that ultimately drove PSNH to bankruptcy. But PSNH isn't the only power company in the US to be in such a position. The Long Island Lighting Company (LILCO), owners of the stalled Shoreham plant, are in a similar parlous financial position, while the consortium owning the River Bend plant in the south of the US is also in a difficult position.

The PSNH bankruptcy has been a long time coming. It was predicted that PSNH (and possibly LILCO) would see bankruptcy as early as 1984, but PSNH has teetered on the brink and been reprieved so often as to make an observer increasingly cautious about making predictions. Perhaps the final blow came as an indirect result of the 19 October 1987 stock market crash. Prior to the crash, banks and finance companies were ready, maybe reluctantly, to bail out PSNH with a line of credit here, underwriting for a bond issue there — but since the crash, the banks and finance companies themselves face difficulties.

Opposition to Seabrook was strongly manifested in 1976-77, when a series of massive site occupations and other protests took place, spearheaded by the Clamshell Alliance. Opposition at first didn't affect the pro-nuclear government of the State of New Hampshire but the New Hampshire public utility commission has proved increasingly unwilling to give PSNH exactly what is says it needs to avoid bankruptcy. Regulatory authorities in Massachusetts have always been critical of the project, and have pressured Massachusetts utilities to get out of it — with mixed success. Finally, commercial operation of the plant has been stymied by the emergency planning issue.

The first serious financial problems however, started to surface before the evacuation and licensing issue raised its head. In 1984, when much construction still had to be done, escalating construction costs resulted in a management reshuffle, and a new company, 'New Hampshire Yankee' was formed to complete the plant. PSNH and Seabrook were only reprieved from financial disaster when the New Hampshire Public Utility Commission approved a new bond issue worth $US425 million at 17.5 per cent interest, in order to raise construction funds and to pay interest on money raised for previous construction funds. Just how parlous the situation was then, was demonstrated when PSNH pleaded that delays in the New Hampshire Public Utility Commission's approval of the bond issue would lead to PSNH bankruptcy there and then. Ironically, it has been PSNH's inability to repay the interest owed on this bond issue that has led to its current bankruptcy.

Following the New Hampshire PUC's ruling, the less sympathetic Massachusetts Public Utitlity Commission ruled that Seabrook plant was too great a risk to ratepayers, and that all risks should be borne exclusively by shareholders. The Commission has also stated 'It's fairly clear that the outstanding technical issues will be routinely resolved, but that's where the good news stops. The underlying obstacles toward full power operation are basically still there: Evacuation, and Massachusetts Governor Dukakis'.

The final blows came on 17 December 1987 and 7 January 1988. On 17 December the Midatlantic National Bank sued PSNH for default on the 15 October 1987 bond issue, and on 7 January the IBJ Schroder bank sued for PSNH's failure to make payments on $US800 million worth of 'unsecured debt'. The Midatlantic National Bank had sued on behalf of 1004 bondholders owning bonds with a 17.5 per cent rate of return. This was the 425 million issued in 1984.

The PSNH bankruptcy will have effects that spread throughout the US. Immediately vulnerable is LILCO, the owner of the Shoreham plant, which has yet to obtain a full power licence. River Bend and Grand Gulf are other vulnerable plants. Certainly, PSNH's bankruptcy serves to rub the noses of the investment community in the economic hazards of going nuclear. And it leaves the obvious question of who, if anyone, will operate Seabrook. Massachusetts utilities will be pressured more than ever to drop out of the project, and that just doesn't leave very many wouldbe investors in a going-cheap, never-used nuclear plant.

John Hallum is a reseasrch officer with FOE Sydney and a regular contributor to Chain Reaction.

Crisis, whose crisis?

by Piergiorgio Moro

In recent times the plight of Third World people has been widely brought into our living rooms through media coverage of calamities such as the Ethiopian famine. This served to awaken our humanitarian feelings and events such as the Band Aid concerts were organised to raise money for the starving masses. Millions of dollars were given but these events focused on the natural causes of the famine, ie drought, oversimplifying the issues involved and leaving the impression that as soon as the rains come, life will return to normal. Thus each successive calamity will be treated by the media as 'an act of God' and will further the impression in the West of the hopelessness of Third World countries.

Unfortunately this alienates 'Western' people from the problems of poverty in the world and leads to two strands of thought on what should be done.

One view sees Third World countries as primitive, overpopulated societies which have always been poor, that in these economic times we cannot afford to help them.

The second view also sees the Third World countries as primitive, but asserts that their problem is cultural backwardness and we can help them to 'civilise' and 'develop' by giving our technology and know-how. This article aims to show how both of these views are misleading as they are based on an Eurocentric, ahistorical and technocratic model of the world.

To fully appreciate the existence of widespread poverty in the Third World one must go back to the Middle Ages and the subsequent rise of European domination. Until the fifteenth century there existed around the world societies at least equal to those in Europe. They were either formally structured and imperialistic, such as the Incas of South America or the Songhai Empire in West Africa, or based on more loosely knit cultural groups, such as the American Indians or the Australian Aborigines.

Europe at this time was in the midst of great instability as feudalism was begining to crumble. The merchant class had begun to assert it's supremacy over the feudal lords, due to their more flexible economic base, and acvtively sought to further monetise the European economies so as to increase their share of wealth and power. Concurrently they sought to expand their markets and sources of raw materials. This led them to finance exploratory expeditions, such as that of Columbus which 'discovered' the Americas, which attracted much attention for gold and silver, and East Asia for spices. These discoveries brought about the breakdown, if not destruction, of indigenous institutions and culture and began the social and economic marginalisation of local populations as well as enriching the European merchant class even further.

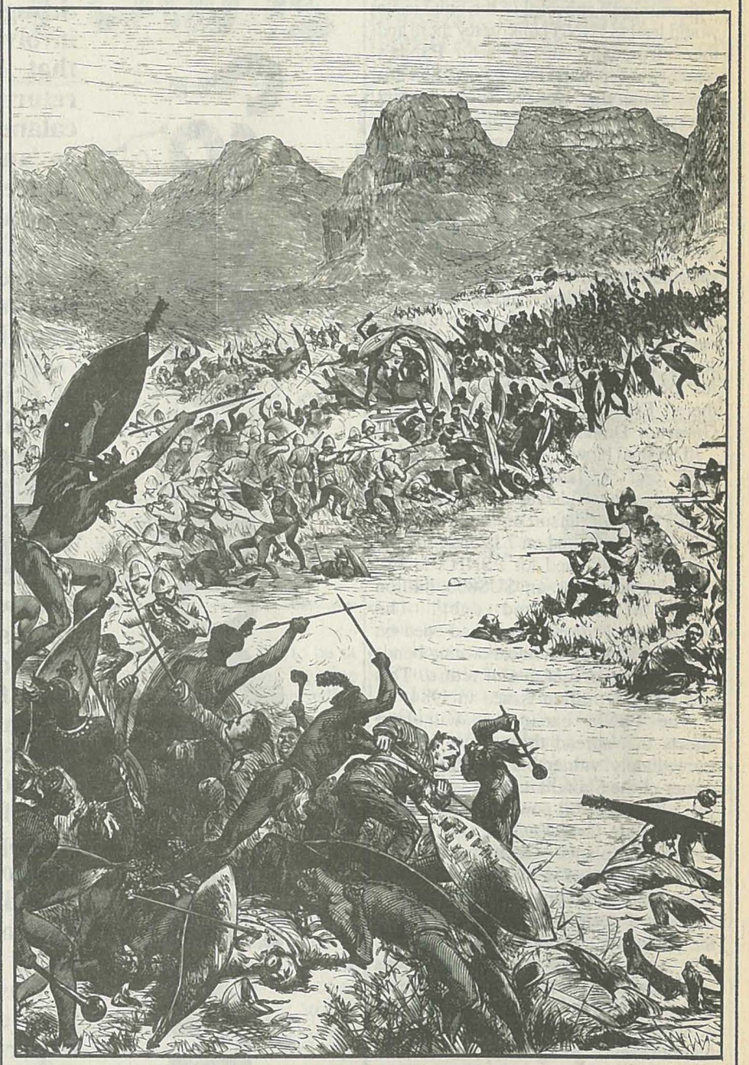
The growth of European cities increased the demand for agricultural produce. This in turn stimulated the formation of agricultural plantations in the newly founded lands. Due to local conditions the Americas were seen as best for growing sugar and cotton but suffered from a shortage of labour. Since Europe did not have a surplus of labour, the ruling classes looked elsewhere. This led to the start of the Atlantic slave trade which had a haemorrhaging effect on the social, political and economic development of Africa.

The term 'trade' is a misconception since the capture of slaves was through trickery, warfare, banditing and kidnapping. Any goods exchanged went to the local elite and were of little value since they were usually luxury items such as alcohol and cheap jewellery, or means of destruction, such as rifles. Considering that slaves were mainly able-bodied men and women and that up to 100 million died or were enslaved, the full extent of destruction can only be imagined.

The demand for food products by the urban population of Europe also led to the internationalisation of agriculture. By the eighteenth century a variety of crops were being extensively grown outside their ecological boundaries to satisfy the needs of the European capitalists for cheap and reliable supplies. One of the outcome of this 'agricultural imperialism' was the break down of existing relationships between the indigineous populations and their environment, to the detriment of both.

Eventually as economic domination proved inadequate in fully satisfying the needs of Europe's burgeoning industrial capacity, the political subjugation of these distant lands became necessary. This heralded the colonial era where through sheer military force European Governments imposed foreign state structures, based on European models, on the people of Africa, Asia and America. A quantum leap in the pace of destruction of indigineous peoples occured as the new social order was often incompatible with the old.

One of the first steps of the colonial states was the imposition of taxes on each and every individual in the colony. Since this had to be paid in cash it forced peasants to grow cash crops, which were then sold to in order to raise the tax-money, or to sell their labour and work in plantations. This arrangement not only boosted the production of agricultural products but also further moneterised the local economy creating new markets for European manufacturers and undermining the traditional 'moral' economy which was based on kinship and family ties more than monetary gain.



Zulu attack on the 80th regiment at Intombi River during the final British drive to capture the Zulu capital at Ulundi. Wood engraving based on a sketch by Lt. L. W. R. Ussher, 1879. (The Granger Collection, New York)

Other steps taken to assert control included international stagnation in some areas so as to provide labour pools for more productive regions of the colony and the use of 'freed' labour for the constructing the infrastructure of the colonial state.

To legitimatise their domination the colonial states began a process of cultural change whereby the local cultures and institutions were downgraded. They were labeled primative and backward while Western ideals were upheld as the way forward. This was achieved mainly by the imposition of a Western education system and co-opting local elites to share some of the power and prestige that Western materialism could give.

The gaining of independence by most countries after World War Two did not lead to a more equitable society because of two major factors. Firstly, colonial states had undergone a long period of domination by imperialism and had developed structures of production and distribution that were export orientated and subordinate within the world capitalist system. This was reinforced by the existence of co-opted local elites who, having gained from the Western system, maintained the status quo. Therefore a large bureaucracy was needed to oversee the system and a large military force was favoured to keep law and order and maintain power in an increasingly unstable social order.

Paying for the 'good life' required international cash and the elites were forced to continue exploiting the forests, the land and their own people. Independence was not the dawn of a new era but merely the transfer of power from a foreign concern to a local elite.

It is in this context that we must view Third World countries today. The problems that they face are the legacy of the imperialist era dating back hundreds of years. The destructive practices which began then continue today, often in the name of 'progress' and 'development', while modern technology has only served to speed up the destruction.

The repercussions of these policies are there for us all to see with poverty, disease, malnutrition and social unrest endemic over much of the world. Environmentally this has resulted in wide spread deforestation, loss of biological diversity, massive soil erosion and wide spread pollution. The poorer people, due to their economic marginalisation, are the ones most affected, whether it be peasants on the tidal islands of the Ganges delta, the forest people of the Amazon Basin or the villagers in the denuded hillsides of Indonesia.

A stark reminder of how unjust the system has become was seen in West Africa in the Sabel famine of 1968-74 where 100,000 people perished, severe malnutrition became endemic and millions of stock were lost. Between 1970 and 1974 the Sabelian countries exported $1.5 billion worth of agricultural produce — three times the value of all the cereals imported into the region to alleviate the famine. Ships brought in relief supplies and then departed with stores of peanuts, cotton, meat and vegetables for the markets of Europe. This situation is not isolated but the product of a system geared to fulfilling wants on the basis of the highest bidder and not on need.

Our economic, political and social systems are the underlying cause of the poverty that effects so much of the worlds population. Conversely, our present affluent society is not a 'gift from God' but the result of hundreds of years of exploitation of the worlds resources and our fellow human beings. It is not a mistake that poverty wasn't eradicated after World War Two or that the wholesale forest destruction has not ceased but a calculated choice made by the few for the benefit of the few. The following illustrate the attitudes that our ruling elites hold:

Let us remember that the main purpose of American aid is not to help other nations but to help ourselves. — Richard Nixon 1968

To give food aid to countries just because people are starving is a pretty weak reason — Dan Allerman, US National Security Adviser 1974

Although the problems facing us often seem insurmountable we must realise that it took hundreds of years for this system to evolve. Efforts to build a more equitable world will also take time. Nevertheless change can happen, even against overwhelming odds, as Nicaragua has shown. So long as people are willing to work together, we are going to have a chance to transform our Western society to one which is non-exploitative, community based, self-reliant and environmentally concious.

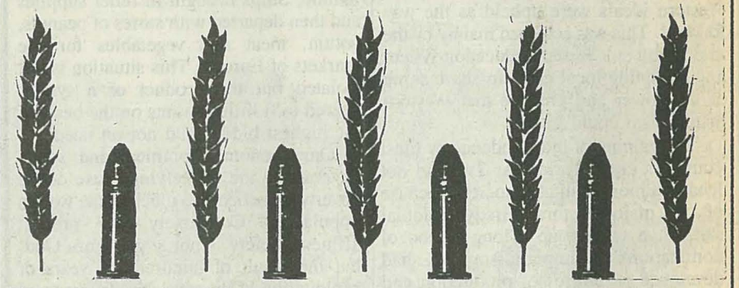
Piergiorgio is a member of the One World Collective, a group working to spread as far as possible an alternative view of development.

DEVELOPMENT OR DISARMAMENT: Australia's role

Australians live at the bottom of one of the largest areas of need in the world: the Asian sub-continent. The 'poverty belt' of our region stretches from North and South Yemen and Afghanistan eastwards through South and East Asia. Two of the most populous countries in the world, China and India, and a large proportion of the world's poor are in our region.

Australia in 1988 is a country in which three million people, 800,000 of them children, are living below the poverty line. Almost a quarter of those aged between 15 and 19 are unemployed. The point is familiar and need not be laboured beyond fingering the rise in profits and the fall of real wages. While corporations profits rise, real labour costs drop. In 1986 BHP was able to announce profits of $A1,000 million; Mr Holmes a Court doubled his assets to $600 million in one year and profits reached highest levels in 20 years. The pension for an elderly couple is still $187.30 per week and unemployment compensation still $104.75. Yet Australia is still a country with almost 32,000 millionaires, one for every 550 people.

There are two aspects of Australia's present political economy which are even more relevant: one is Australia's commitment to supply arms to the region, the other is the decreasing assistance for overseas development. In this article, **George Venturini** ***concludes his discussion of development, disarmament and survival begun in*** **Chain Reaction 51** ***with a look at Australia's role.***



Throughout Asia, defence budget increases have been higher than overall budget expansions. Military growth consumes the same share of resources as in all industrial countries, where average per capita income is about ten times that of Asia.

While military expenditure increases, Asia remains one of the centres of world poverty. With the exception of Brunei, Japan and Singapore, Asian countries — even the acclaimed newly industrialised countries — remain low in the socio-economic rankings of nations. In 1982 the average GNP for developed nations was $US9,227; for East Asia it was $1,180 and for South Asia, $250. The number of school age children per teacher in the developed nations was 25, for East Asia it was 43 and for South Asia, 84. The infant mortality rate was 54 per 1,000 live births for East Asia and 116 for South Asia compared to 16 for the developed countries.

The Australian Connection

In this sea of want Australia has acted as if it were not part of the region, as if it could withdraw at any time because some great and powerful friend would help it in time of need. It has also been instrumental in the expansion of the superpowers arms race into the Pacific Ocean.

To understand this growth of military activity one must understand the economic policies that the arms race is designed to protect. The Asia-Pacific region has experienced phenomenal economic growth and it appears that the world's financial centre of gravity is moving to the Pacific. The United States and Japan, as the major markets for the region's exports, provide much capital investment and technology for the production of consumer goods using the relatively cheap labour of Asia. Australia, New Zealand and — across the Pacific — Canada, are the primary producers, providing stable political climates for long-term investment in minerals and energy development, as well as production of agricultural commodities such as wheat and meat. The less developed countries of South East Asia (and Latin America), as well as providing cheap labour for manufacturing, offer ample agricultural resources and a low paid rural workforce. Overall, the situation leads to the accumulation and expropriation of capital from the developing countries to Japan and the US.

The economic dynamism of the region highlights the importance of certain trade routes, particularly those between the US and the countries of the Association of South East Asian countries — originally Indonesia, Malaysia, the Philippines, Singapore and Thailand and more recently Brunei, ASEAN, South Korea and Japan. The protection of these routes as well as of the oil supply from the Middle East to the North West Pacific and of the United States sea routes through the Indian Ocean, the Straits of Malacca and the South China Sea, is seen as a vital military objective.

In the defence of these interests Australia acts not as a member of the region but as a client state of distant powers. It has allowed itself to become part of a net of military bases with other client states such as South Korea, Japan, the Philippines and, on a second line of defence, Guam and the Marshall Islands. The defence of these areas is seen in Cold War terms — served by the maintenance of the 'Soviet threat' myth.

The pursuit of this policy has often required violence against the will of the people. For example, and until recently, development within the Philippines has emphasised the production of export food crops although many within the country are ill-nourished. The massive protests which followed were quelled by military means and the establishment of militarism as a sustaining force and influence in all the countries institutions — political, economic, administrative and judicial.

Life itself becomes militarised, reshaped in the simplistic terms of the Cold War. Should protest become so strong that the political leadership and stability of the country is threatened, Cold War fears are aroused and foreign intervention becomes a possibility, a threat, a likelihood.

Australia has played a small but important part in this process. Instead of exercising caution and counselling restraint, particularly on the American 'ally', Australia has taken the role of the local police.

Militarily, Australia has enabled the United States to concentrate its naval forces in the South China Sea and the North Pacific by concentrating its own naval presence in the South Pacific. Economically, Australia has assisted the American policy of 'strategic denial'. When, in 1974, it appeared that the Soviet Union might assist Tonga to build a new port, Australia quadrupled its economic aid to that country. And when the independent Kiribati signed a fishing agreement with the Soviets, Australia was very quick in manifesting its displeasure. Apparently there is not much joy in dealing with the Soviets, despite the fact that they are Australia's fifth largest export market!

Troubling our Neighbours

Beyond this activity as minor partner of the United States, Australia abets Asian militarisation by aiding highly militaristic governments with appalling human rights records — such as that of former President Marcos.

Within the Australian Budget there has always been room for what is referred to as the Defence Co-operation Program. Taking the last five years — those of the Keating budgets — the official statement in 1983-84 was that 'a variety of bilateral contacts . . . have been developed as a practical expression of our interest in regional security and to promote contacts with government and defence force of countries with which we share strategic interests.' While the Program is modest compared to that of the Soviet Union and the United States, it is nevertheless a good indication of why the money is given, for what, and to whom.

Last year the Program included 'assistance in the form of loan and advisory personnel, equipment and training and study visits in Australia' by Papua New Guinea Defence Force personnel, 'projects to improve [Indonesia's] defence support capabilities as well as contribute to national and economic development', 'advisory assistance' to Malaysia and Singapore, and a rather broadly described 'range of activities . . . in the Philippines and Thailand.'

	1983-84 Actual	1984-85 Actual	1985-86 Estimate	1986-87 Estimate
Papua New Guinea	16.4	16.0	20.1	21.7
Indonesia	8.9	10.0		
Malaysia	5.7	5.6		
Singapore	1.6	1.3		
Other	12.9	12.4		
TOTAL	45.6	45.3		

TABLE 1: Budget Outlays for Defence Co-operation Program. (In $AMillion)

Leaving aside Thailand which has been moving from one militry dictatorship to another for decades, under the Program Australia provided the Philippines with DART electronic small-arms designed for guerrilla and urban warfare training. During 1982-83, 112 Filipinos trained at Australian military colleges — as many as were trained in the United States at the time. There is no question that such trainees were used in propping up the Marcos regime and in human rights violations.

Assistance to Indonesia has involved 'patrol boat, Sioux helicopter, survey and mapping, communications and electronics, Nomad aircraft maintenance and riverine craft projects as well as advisory assistance and training' — in which one should read the survey and mapping of Irian Jaya, Maluku and Kalimantan (North Borneo). The suppression of Papuan nationalism in West Irian and the intervention in the Portuguese territory of East Timor are thus facilitated by detailed Australian produced maps.

Successive Budget Statements have not changed the emphasis of the Program, just increased the amount of maney provided. It is not much, but it shows where the heart is. This is the result:

	1984-85 Actual	1985-85 Actual	1986-87 Actual	1987-88 Estimate
Papua New Guinea	16.0	19.1	22.9	23.1
South Pacific	5.6	8.0	13.1	15.9
ASEAN	23.0	22.3	17.9	18.7
Other regional Activities	0.2	0.5	0.3	0.3
Training Equipment and Facilities	0.4	0.3	0.4	0.4
TOTAL	45.3	50.1	54.6	58.3

TABLE 2: Budget Outlays for Defence Co-operation Program. (In $Amillion)

The table could be more complete, but this is not possible because of a rearrangement of the catergories. The following table takes these recent changes into consideration:

Artful statistical work has thus permitted the hiding of the distribution, last revealed in the Estimate of Expenditure 1985-85 for the Defence Department as follows:

Papua New Guinea	$16.0m
Indonesia	$10.0m
Malaysia	$5.6m
Thailand	$4.3m
Vanuatu	$1.6m
Solomon Islands	$1.4m
Philippines	$1.4m

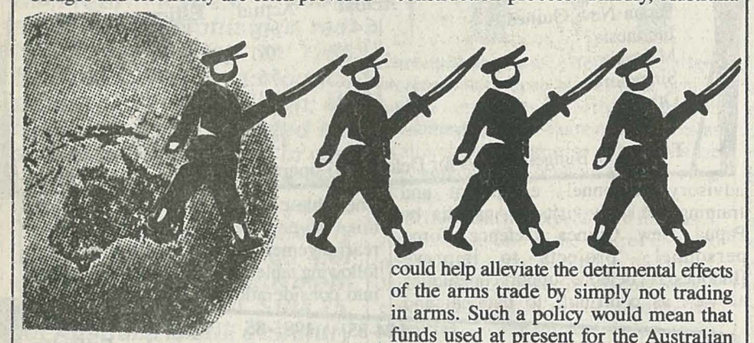
The last figure shows that, way into 1986, the Australian Government was supporting the Marcos regime through the Defence Co-operation Program.

In the 1987-88 Budget '[an] allocation has been made for training, professional exchanges, consultancy assistance, together with combined exercises and equipment based projects in ASEAN countries'.

Aiding 'Our Men'

The Australian presence in Asian countries is not limited to the Program. Australian aid is also designed to maintain friendship with governments which are friendly to our ally, the Reagan Administration.

There is no government to government aid to desperately poor countries such as Vietnam, which is seen as too pro-Soviet. We may sell to the Soviets and their friends, but we cannot assist those friends. Aid which is provided to some of the ASEAN countries is seen as supporting development strategies which do not necessarily assist the poor. Roads, bridges and electricity are often provided



with an eye to aiding military programs. An example is the recently completed Australian-built highway system in the Philippine province of Zamboanga del Sur. While of debatable economic benefit to local villagers, this highway gives the Philippine Armed Forces greater access to a region where consolidated opposition forces exist and operate.

In addition, the Australian Government uses aid as a sweetener for commercial deals. For instance, under the so-called Development Import Finance Facility (DIFF) plan an aid component may be added to a financial package supporting a commercial bid. BHP — the Big Australian — has received $A11.6 million of aid money as a DIFF sweetener for a commercial tender to establish a cement works in southern China. Such use of aid money — apart from the obvious considerations — has a capacity to distort the development process as well as to distort international trade. Nevertheless, in the 1985-86 Budget, the DIFF allocation increased by 28 per cent to $A16 million.

Changing Direction

Instead of allowing itself to be used to retain allegiance to the Reagan Administration by other Asian and South Pacific countries, Australia could help in the resolution of the North-South crisis. Alone it may not do much, but it may certainly begin by ceasing arms export trade with the Third World. Australia is not even economically dependent on such a trade. It could be stopped with very little disruption to the economy and without causing unemployment.

Secondly, Australia could convert existing military production into the production of civilian goods. For instance, during times of low demand for government-produced military aircraft a factory has been used to produce bus bodies which require a similar construction process. Thirdly, Australia could help alleviate the detrimental effects of the arms trade by simply not trading in arms. Such a policy would mean that funds used at present for the Australian Defence Co-operation Program could be redirected into civilian programs for domestic and overseas economic aid. That would be just the beginning: ceasing to do harm.

Converting swords into ploughshares may seem more difficult now that many countries have become dependent on arms production. Australia is not in that position; there is no 'military Keynesianism' here. There is no-one to believe that the arms race is necessary to the economy. Conversion of military facilities is not the only form of conversion taking place. Every day conversion occurs throughout every economy, by changing production lines, closing a certain plant or mine, through take-overs followed by asset stripping — in all sorts of ways. If anything, military conversion should be easier because it will be centrally controlled rather than subject to the vagaries of private industry.

We need not be concerned about being original, establishing 'a first'. Indeed, we could not. In 1977 Sweden and the other Nordic countries proposed that the United Nations examine the relationship between disarmament and development. The UN General Assembly accepted this proposal at its first Special Session on Disarmament in 1978. In 1982 the General Assembly requested member states to take further steps on a national level to follow up the report prepared by a group of governmental experts in the years 1978-81. A grand Swedish lady chaired that group: Mrs Inga Thorsson. In July 1983 the Swedish Government authorised the Minister for Foreign Affairs to appoint a special expert to study certain aspects of the relationship between disarmament and development, and in September 1983 Mrs Thorsson was appointed. Her report *In pursuit of Disarmament — Conversion from military to civil production in Sweden* appeared a year later. 'Although some people will find the idea of preparing for disarmament futile and unrealistic', she wrote in the preface to her two volume report, 'I am still convinced that others will agree with me that new paths have to be tried in the search for progress in disarmament. The present study — as well as the UN report — have struck a positive and optimistic note. Both are based on the belief that reason will ultimately prevail in global deliberations on issues which might decide the fate of mankind. To me, optimism and trust signify something more than just wishful thinking. Such an attitude, based on a moral imperative, has proved to be a strong motive for political action, felt widely around the world, in East and West and in North and South. It is a human response to the threats to our survival.'

Dr Venturini is a Friend of the Earth, was a senate candidate for the Nuclear Disarmament Party in the December 1984 election and during the International Year of Peace participated in and read papers at the United Nations Conference on Conflict Resolution and Peace Studies at the University of the South Pacific and International Conference on Higher Education and the Promotion of Peace at Chulalongkorn University in Thailand. He has maintained an active interest in the issues of nuclear power, disarmament, development and survival.

Conferring peace

The Philippines, reluctant host of two of America's largest military bases, was also the site of the Fifth Nuclear Free and Independent Pacific (NFIP) Conference, November 10-15, 1987. *Donald Goertzen* attended the conference.

Meeting in Manila, the nation's capital, 52 delegates from abroad were joined by 55 foreign observers, staff and resource people; a 13 member Philippine delegation; and a 38 member local secretariat drawn from several of the Philippines' anti-nuclear, anti-bases, human rights, womens', tribal and militant people's organizations. The delegates debated resolutions and action proposals, joined a locally organized protest rally in front of the US Embassy, engaged in much song and dance, and strengthened their ties and regional unity.

As one of its 'action proposals' the NFIP conference declared January 26, 1988 as an 'international day of mourning' to commemorate the last day the indigenous people of Australia were allowed the freedom of their land 200 years ago.

NFIP delegates committed themselves to staging rallies in front of Australian Embassies on January 26 to protest the 'illegal occupation' by Europeans of Aboriginal land, 'which commenced on January 26, 1788'.

A committee is also being established by the NFIP to raise funds to support the travel costs of indigenous peoples fro n throughout the Pacific to an Indigenous Peoples Conference in Australia during 1988.

The NFIP movement is further sponsoring a letter writing and telegram campaign to Bob Hawke totally opposing the 'celebration' of 200 years of oppression of Aboriginal people, the violation of the human rights of Aboriginal people as set out in the Universal Declaration of Human Rights, and the refusal of the Australian government to complement the land rights of Aboriginal people.

Finally, the NFIP conference demanded that the Australian Government recognize the sovereignty of the Aboriginal people as the original occupants of the Australian continent.

The conference also recognized that the presence of US military bases and nuclear weapons in Philippine territory and the continuous dominance and interfering by the US in the political, military, economic, and cultural life of the nation constitute the 'biggest hindrance to the peoples of the Philippines' struggle for national sovereignty, freedom, justice, democracy, and peace'.

The resolution urges President Aquino to immediately implement the nuclear weapons free provision of the new Philippine constitution and calls for the immediate removal of the US military bases and suspension of all foreign military aid to the Philippines. Further, it opposes US participation in Aquino's 'total war policy' and the current US military build-up in the Philippines.

The use of Aeta (tribal) lands for the US military bases is also denounced in the resolution. The social costs of the bases, particularly drug trafficking, the proliferation of prostitution and the spread of AIDS are also condemned.

The efforts by Filipinos to oppose the use of the US bases for US wars of aggression overseas and the people's quest for a negotiated peace based on justice and equity are also supported by the resolution.

Also on Philippine issues, Senator Wigberto Tanada stated in his formal welcoming address on 10 November that he supported the NFIP movement's 'mutually supportive efforts to integrate movements for Pacific independence and for a nuclear free and demilitarized Pacific'. Tanada presently has a bill pending in the Philippine senate calling for enforcement of the constitution's anti-nuclear provisions.

A sense of celebration pervaded the conference and the few free times were accented by music making and festiveness by those who had earlier debated resolutions in the conference hall. The

capacity of some delegates to engage in articulate multi-lingual debate all day, watch political videos all evening, hit the town all night and then start over again after breakfast was truly amazing.

This was the first time that the network had convened since the 1983 meeting in Vanuatu. The agenda was packed and the days were long. The conference proper was preceeded by steering committee meetings and the Indigenous Peoples' Caucus at a beach resort a few hours from Manila.

The Indigenous Caucus reaffirmed the concept that 'one of the concrete ways to win the struggle for a Nuclear Free and Independent Pacific is to achieve the independence of Kanaky, Tahiti-Polynesia, West Papua and East Timor'.

The issues of political independence, land tenure, and indigenous peoples' rights are seen as directly related to the work of making the Pacific nuclear free. While conference relations were apparently not as strained as in some previous meetings, tensions between those who relate primarily to the 'nuclear free' agenda and those who express themselves primarily in terms of independence struggles and indigenous peoples' movements did sometimes surface.

The deliberations on the Fiji coup and indigenous Melanesian people's rights was one of the more potentially volatile discussions. A considerable amount of time was allowed for people to express their views. However, some delegates felt that the conference did not have enough information on the Fijian situation.

Ethnic, or Melanesian Fijians, are becoming a minority in their own country. There have been fears that their rights are not sufficiently protected by the constitution. The newly installed government of Colonel Rabuka promises to keep 'Fiji for the Fijians'.

Jone Dakuvula, an ethnic Fijian and a member of the Fiji Anti-Nuclear Group came to the conference from his present home in Aotearoa. He argued that the new regime is merely 'using' the race issue. 'Maybe a third of the Melanesian people support the coup, a third are confused, and a third oppose it.' Dakuvula further stated in an interview that the Indo-Fijians, who constitute slightly over half of the population, have seen their rights taken away by the new regime: 'Sabbath laws are strictly enforced on Sundays even though most of the Indo-Fijians are Hindus. 'Sabbath laws' charges Dakuvula, 'are a virtual Sunday curfew'. Rabuka, a Methodist lay minister, is behind the laws.

Indo-Fijians are mostly poor descendants of indentured servants brought to Fiji during British rule. A minority of Indo-Fijians arrived much later and constitute a major part of Fiji's commercial class.

Owen Wilkes, a peace researcher and resource person from Aotearoa argued that there was considerable support for the first of the two Fiji coups (May 1987) from the US. However, Wilkes maintains that 'while the US was a kind of lubricant, I don't think it was the catalyst.' He doubts, however, that there was any US involvement in the subsequent coup of September 1987. Both coups were lead by Colonel Rabuka and the last one seems to have left the country under full military rule.

The Kanak delegation which represents groups working for Kanaky (New Caledonia) independence from France, offered one of the first and strongest denounciations of the Fiji coup in spite of their common Melanesian heritage.

The NFIP resolution on Fiji condemns military coups in Fiji as a way to achieve political power and condemns military dictatorship as a way to exercise power. It further condemns political, cultural, and religious repression; collaboration between the military forces of Pacific states with those of France, the USA, and Indonesia: and the repression of NFIP activists, political parties, and trade unions.

The resolution endorses the strengthening of ethnic Fijian rights in the constitution and also sympathizes with the Indo-Fijian situation under a repressive regime. The conference resolution demands that the current regime in Fiji restore full civil rights to all Fiji citizens.

Some delegates, representing indigenous peoples who have seen their cultures undermined, lands taken away, populations decimated, and nations destroyed, were reluctant to condemn outright recent events in Fiji. However, rather than block the resolution they chose to abstain from voting.

In another resolution the right to self determination by the Kanak people is recognized and France's 'militarization of Kanaky' is condemned.

France came under further attack for testing its nuclear weapons on Muruora and Fangataufa Atolls. The 'struggle for the indigenous peoples of Tahitii to recover their sovereignty' is also supported by the NFIP movement.

Independence for West Papua (Irian Jaya) is called for in one of the conference resolutions. West Papua is presently occupied by Indonesia. The Indonesian dictatorship is also condemned 'for its genocidal war and occupation of East Timor'. The regime of President Suharto occupied East Timor, a former Portuguese colony in 1976.

Long hours of debate and occasional times for singing did not constitute the whole of the NFIP conference. 'These people are activists', explained one local secretariat member, 'they know that the movement exists primarily in the streets.'

'You've got to get those bases out', shouted Boone Schirmer to a crowd in front of the US Embassy. More than half of the conference participants joined a locally organized rally of over 300 people on 13 November. Schirmer, a life-long peace activist representing the American 'Campaign Against the US Bases in the Philippines' said that maintaining the bases would result in many more Filipino and American deaths. He also insisted that by hosting the US bases the Philippines is intervening in the Persian Gulf War. 'More than half of the supplies for the American forces there are channeled through the bases', contends Schirmer.

Heny Koha, an indigenous delegate from Aotearoa thrust an index finger at the embassy and yelled, 'I know you're listening, so listen to this: get out, out of the Philippines, get out of Asia Pacific.'

Singing, drama, speeches, and expressions of solidarity such as the exchange of flags and banners marked the embassy rally.

Before closing the conference the delegates called for the inclusion of sea-based Intermediate range Nuclear Forces (INF) in the recent disarmament treaty negotiations betweeen the US and the Soviet Union. This would have transformed the Global Double Zero (long and short range INFs in Europe and Asia) into a Global Triple Zero agreement.

The conference ended with folksinging and dances from throughout the world that went on until dawn. On 16 November several delegates joined 'exposure trips' to the communities near the US naval and air bases as well as the now defunct Bataan nuclear power plant.

The NFIP movement is alive and well, from Japan to Aotearoa and from the shores of Asia to North America.

Part of this article originally appeared in Call for Peace and Prosperity, *the official publication of the Nuclear Free Philippine Coalition. The author, Donald Goertzen, is a regular contributor to the publication.*

REVIEWS

Video

Cold Comfort: Australia's Nuclear Responsibilities. A joint project of Open Channel Co-operative, Community Education Publication Association and Infomation. Released December 1987.

Reviewed by **Paul Di-Masi**

Amid continuing revelation of the diversion (or 'reflagging') of Australian uranium for environmentally damaging, politically destablising and often illegal uses comes the release of a video on this very subject: the use, and abuse, of our uranium.

Cold Comfort runs for 50 minutes and is divided into four parts. It has been designed especially for use in schools and community groups. It can be used as a single resource or as part of a teaching package in conjunction with the widely acknowledged book *The Nuclear Environment* and The Nuclear Environment Poster (also designed for school and community use and both available from Friends of the Earth Bookshop, Fitzroy). *Cold Comfort* can be used at year 10 but is especially appropriate for year 11 and 12 students. Curriculum areas of use could include science, english (HSC option work particularly), politics, peace studies, environment studies, social studies, geography (uranium mining), and history (nuclear weapons).

The video is an incisive and well paced contribution towards a better understanding of the issues that attend on the decision to continue our exports of uranium. It looks at the simple mathematics of economic return from such exports and balances these against the complex costs: costs that include the despoilation of the fragile wetlands around the Kakadu mine in the Northern Territory; the dangers of the transport of nuclear material; the health risks to millions of people from nuclear reactor leaks and meltdowns; the impossibility of safely storing radioactive waste for up to 250,000 years and the nexus between uranium for power generation and plutonium for weapons production.

As one of the scientists interviewed in *Cold Comfort* states, issues such as these are: ' . . . political not scientific . . . danger and safety is a matter of what you are prepared to accept'.

Cold Comfort clearly sets out, in human terms, what risks our political masters are accepting . . . on our behalf. It is an excellent contribution to the nuclear debate and a very useful resource for teachers and community groups dealing with nuclear issues. The video includes valuable Australian content, especially its recently declassified Maralinga footage and the sections on the Kakadu and Rum Jungle uranium mines. It also has an extensive section on reactor safety and gives detailed coverage of the Chernobyl disaster in the Soviet Union.

A well produced and carefully researched video, *Cold Comfort* uses clear graphics, arresting images and simple (though never simplistic) narration to chart the local and global consequences of the decision to export Australia's uranium. It is highly recommended to all those who are interested in examining Australia's role in the nuclear fuel cycle and particularly to teachers broaching nuclear and peace issues in the classroom. For further information contact the Australian Filim Institute at 47 Little Latrobe Street, Melbourne 3000, Phone (03) 662-1944.

A Polish child is given iodine medication after the Chernobyl meltdown.

Paul Di-Masi is a secondary school teacher, at present working at Broadmeadows High School. He is co-editor of A Peace of the Action, *an annotated bibliography of peace education resources recently published by Friends of the Earth.*

REVIEWS

Books

Perestroika: New thinking for our country and the world by Mikhail Gorbachev. Collins London 1987, $29.95 (Hardcover)

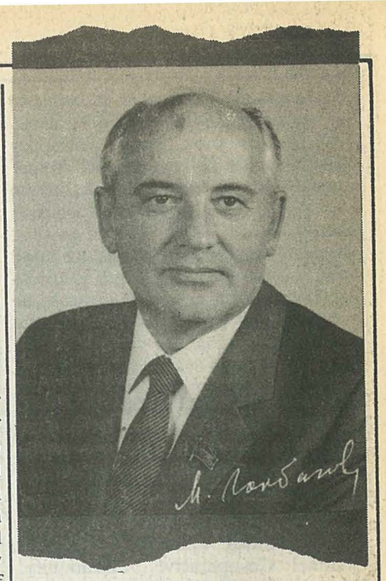
Reviewed by **Gerry Harant**

People with concerns for this planet's future find events in the Soviet Union of absorbing interest. On the negative side, the Soviet Union, a superpower covering one sixth of the world's land, holds one end of the thin string precariously supporting the nuclear Damocles' sword now hanging over humanity's head. It is also the country responsible for the worst nuclear accident so far, and a known large scale polluter.

However, there are positive sides. There is no doubt that many of the country's priorities are ahead of capitalist aims, and its civil liberties, by and large, are no worse than those of the US which suports the world's most reactionary regimes and their torture chambers and death squads, or, for that matter, Australia, which creates hell on earth for its blacks and whose print media are far more effectively controlled than those in most so-called totalitarian countries.

Most important, the USSR is the first and largest country which claims to have implemented socialism, a system which refuses to allow the major means of production to be in the hands of individuals or private corporations. The profit motive is supposedly absent, and economic growth is an optional factor. In contrast, capitalism is based on the notion of growth: after all, the profits generated in one year have to be invested profitably the next, and so on. A permanent state of zero or negative growth would spell the end of capitalism.

It is difficult to see how anyone with environmental concerns, let alone with concerns for a less competitive, less technologically centered and more humane society can support capitalism as a system; and while socialists have been at pains to



ram home the alternatives presented by the preferred versions of their respective groupings, sceptics have had to point out that existing models of socialism have also been competitive, technologicaly centered and frequently totally inhuman, and that their environmental record is as bad as that of capitalism and less subject to scrutiny.

No wonder 'green' socialists like myself are desperately hoping for the day when at least one socialist country starts deviating from the now firmly established 'road to socialism' and comes up with a political analysis which is not in terms of the needs of technological society, but in terms of the needs of people. Let me say from the outset that, sad to say, *Perestroika* (Restructuring) by Michael Gorbachev does not offer such an analysis.

You may well agree that the reforms listed in the book (which is undoubtedly the work of a committee) are necessary to rescue the Soviet economy from stagnation. According to reports, they are being implemented, at least for the moment, with unprecedented vigour. However, the reforms themselves are by no means novel. Every new Soviet administration, particularly those of Kruschev and Breshnev, started off by rallying against bureaucracy and waste, and by devising methods of dealing with these problems. These reforms have never worked.

The reason why is not explored in the book, which never admits that previous Soviet attempts existed. Nor do the Prague spring of 1968, or even the current 'Market Socialism' experiments in Hungary as much as rate a mention.

Approving mention is made, however, of the New Economic Policy (NEP) introduced by Lenin in the early post-revolutionary period when the Soviet state was threatened by famine and industry and operating at one twentieth of pre-World War II levels. This policy reinstated small scale capitalism and foriegn investment. According to *Perestroika*, it was the only way to go.

However, there were disenting voices at the time. In 1922, Alexandra Kollontai led a group called the Workers' Opposition, which trenchantly criticised the notion that factories could only be run either by the old capitalists or by party cadres who had little industrial experience. Remember the old slogan 'All power to the Soviets (councils)' said Kollontai, and let the workers have a go at running the workshops. No, said Lenin, I have to crank up the economy, there's no time for mucking about. No matter how accurately Kollontai described the demoralisation of workers by the NEP-men waxing wealthy at the expense of the people, Lenins 'reforms' went inexorably on, with Stalin not far behind.

It may well be that *Perestroika* has not reinvented the wheel, but the skids, because it is precisely what the NEP put under any notion of industrial democracy administered from below. It is a sad fact that after 70 years of 'socialism' grassroots industrail democracy has yet to be tried in any advanced socialist economy.

Restructuring as suggested in the book amounts to reforms from above, and the book admits it, while expressing the pious hope that ordinary people will join in. I admit I don't have nightmares in which the Soviet bureaucrats are dashed to an early grave after chain-sawing off the limbs on which they have sat for so long, any more than I have visions of Australian middle managers doing the same. At best I can see the fat cats displaced by (temporarily) lean and hungry hounds.

The book is rich in terms like cost-accounting and quality control. It also suggests reduction of the central apparatus by another decentralised one, which, for the time being, will work alongside the old, suggesting that the future will bring us two bureaucrats where previously we had only one. Admit all this 'decentralisation', quality control is to be achieved — yes, you've guessed it — not by firing up workers enthusiasm on the shop floor, but by an army of centralised inspectors half of whom, going by my own experience, probably won't be able to distinguish between a micrometer and a g-clamp.

The chapter dealing with women is revealing. Soviet women, it is said, have now achieved full equality with men. (Under the principle of Glassnost, or openess, Soviet women are now permitted to laugh at such statements. I doubt if they will.) The problem we face, says the book, is to once again intergrate women into their traditional tasks of housework, and we are going to entrust this momentous task to new Womens' Councils created for this purpose.

Some Western observers, even those who normally pan the USSR, have found much of value in the book, probably because it convinces them that East or West, capitalist or socialist, the world and its problems are much the same everywhere, and that, sooner or later, the USSR will look just like any other industrial country. God (or Karl Marx) help us, they may be right.

So while the new wind in the Soviet Union may blow away some of the international nuclear strom-clouds and create a new version of detente, don't hold your breath for major social change.

Oh. I forgot. No-one can quibble with the chapter on the environment. It doesn't exist.

Gerry Harrant is a member of People for Nuclear Disarmament.

That Long Silence by Shashi Deshpande, Virao Press, 1988 $14.95

Reviewed by **Caris Macdonald**

Is this a worthwhile book to read? A women writing about one women's relationships with her family, her husband, her independence and her fears, is not a novel topic by any means. However, *That Long Silence* presents a relatively new slant on this theme, as it is centered around an educated, but still traditionally-minded Indian family in Bombay. It is an intensely personal account of one women's realisation of her own independence, and one of how this will inevitably effect her life, within a culture that is yet to allow women the rights and ackowledgment of equality that they may have 'achieved' in the West.

What may appear at first to be a lightweight stringing together of trivial details becomes an intriguing thread that is woven into the personality of the main charecter, Jaya.

The novel also provides glimpses of more traditionally conforming women, such as Jaya's grandmother and older female relatives. The picture one recieves is a strange mixture of accepting submissiveness and totalitarian authority — although only within the home, never in public.

That Long Silence is refreshingly honest and unpretentious. I would recommend it to be read by anyone, but especially women.

Caris Macdonald is a member of the FOE Fitzroy Bookshop collective.

Prospectus for a Habitable Planet by Dan Smith and E.P.Thompson. Published by Penguin Books, 1987. $12.95

Reviewed by **Gisela Gardener**

Prospectus for a Habitable Planet is a collection of essays in four parts written by European peacmakers of some repute and published just before the May 1987 United Kingdom elections. I felt very sad reading writer's hopes that some of the necessary changes may soon begin. Thatcher's and Kohl's re-elections were depressing for anyone working for social change and Mary Kaldor's point may now be even more relevant; 'there is a sense of despair about penetrating (choice of language, Mary!) their political concsciousness. It is this insensitivity to the global interest that presages global disaster.'

Nevertheless, strategies are put forward to work towards survival and this book is a testimony to the increasing sophistication and political maturity of the European peace movement. Hard detailed work has gone into the writer's analysis and political strategy.

It charts the development of the Cold War, the strengths and weaknesses of the superpower blocs and the economic and political relationships between the First, Second and Third Worlds.

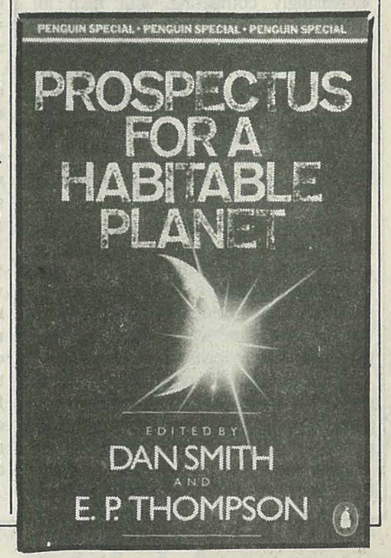
Kate Soper's essay on the personal is political sits comfortably amidst careful explanations of and strategy for de-alignment (the dissolution of the East/West blocs, the reunification of Europe and Germany and autonomony and democracy for the Third World).

The book will do wonders for the 'Bloc thinking' of many of us in the Southern hemisphere and to make us ask ourselves which countries and images pop up in our heads when we think of 'Europe'. Europe is not the EEC, the EEC is *half* of Europe.

You might feel that Europe is not of that much interest to you in any case. *But* the essays offer an internationalist strategy for survival, set out in point form in the Afterword. It is extremely relevant to our region because we are conditioned and used by the super-powers much as the Europeans are. All of us need to develop better policies towards the Third World (especially if the Third World is within our boundaries).

Dan Smith's essay is the most accessible analysis and concise history of the Old and New Cold Wars that I have seen. It explains the place and function of Star Wars, it includes a balence sheet on the 'success' and 'failures' in United States terms of the New Cold War and looks at a number of options for the future. He knows that: 'To be implemented, visions need political programs. . .'

Throughout the book suggestions are made that can be taken up by many different groupings in society on a variety of levels; no one truth is given, a Rainbow Alliance is not formed. Caesar Voute, for



REVIEWS

example, argues in great style but in a difficult, culturally rather inaccessible essay that Europe is 'ambigious', it's many cultures including the non-European ones, will be successful in building a 'peace infrastructure'.

'. . .any effective group or culture in Europe which ceases to exchange with other cultures at all levels will disintergrate into an incestuous seediness and begin to produce monsters. Nationalism is one of the early symptoms.'

I can only think of our Coca-Cola sponsered celebrations and feel that much of the thought in this book will help us to continue to encourage the survival of the planet.

Gisela Gardener has been active in the European peace movement and participated at Greenham Common. She is now active in the peace and feminist movements in Victoria.

Hypatia's Heritage; A History of women in science from antiquity to the late nineteenth century by Margaret Alic, Women's Press Ltd, London, 1986, $14.

Reviewed by **Linden Gillbank**

Although in modern times women are increasingly competing with men for scientific jobs, the history of western science is, in general, a history of the activities of men. However, despite various attempts to maintain it as a male preserve, the world of science has never been completely woman-free, . . . at times almost, but never completely. This is one of the very few books to focus on women in science.

Hypatia's Heritage charts the involvement of women in science from the earliest human societies until the time when Marie Curie was beginning to unravel the mysteries of radioactivity. Who were these women, who ranged from food gatherers to physicists.

In pre-agricutural society they were the gatherers, the preparers and preservers of plants for food and fibre. Using medicinal plants, women were also the healers. Thus in these early societies, women were the first botanists and still are in those societies that depend on wild rather than cultivated plants.

In the early patriarchial Greek, Roman and Arab societies certain priveleged women managed to hurdle enormous social barriers to study and write in fields ranging from mathematics and physics to medicine and botany. Mind you, their lot was not a bed of roses, subterfuge, as well as tenacity and intellect, was often necessary.

Around 300 BC, in order to study medicine and midwifery under Herophilus of Alexandria, a woman had to disguise herself as a man. Still disguised she returned to Athens to practice amongst the women of the aristocracy. Peeved at her success and adept at protecting their professional interests her colleagues denounced her as 'one that does corrupt men's wives'. In revealing her female sex, she certainly provoked their embarassment, and exposed herself to prosecution for practising medicine as a women physician. Only the influence of her clientele saved her from death. It is noteworthy that in the early ninteenth century, a women still had to resort to male disguise to study at the Edinburgh School of Medicine. The book's title, *Hypatia's Heritage*, comes from Hypatia of Alexandria who was the earliest female scientist whose life is reasonably well documented. Born in Alexandria in 370 AD, the daughter of a mathematician and astronomer, Hypatia developed and taught mathemetics and philosophy at a time when the Roman Empire was converting to Christianity, As a pagan and an overt espouser of Greek scientific rationalism, she was an obvious target for fanatical Christain leaders. Brutally murdered in 412 AD, was she the last truly pagan scientist in the western world?

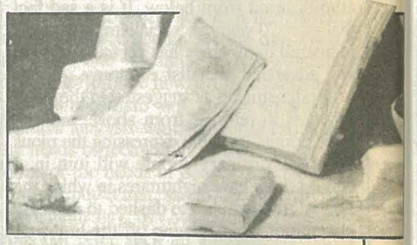
During the Middle Ages the majority of scientists, male and female, belonged to religious houses. The convent, an attractive alternative to marriage for many, allowed women to write and study in various fields including mathematics and science. Nuns wer often physicians and medical instructors..

Throughout mediaeval Europe women were practising medicine and it was a woman called Trotula and the 'ladies of Salerno' who helped bring about the medical renaissance that signalled the end of the Dark Ages. By the eleventh century the School of Salerno in southern Italy, the first mediaeval medical center not connected with the church, had gained a reputation for its scientific courses and qualified as the first European university.

Now, although most upper class Italian women remained illiterate, the universities were open to them. From the University of Salerno, Trotula helped compile a medical encyclopedia and wrote the classic text *Passionibus Mulierum Curandorum*, The Diseases of Women, which remained a standard text until the sixteenth century. Emphasising the importance of hygiene, diet and exercise, and recommending some obstetric practices which are still in vogue, she was certainly ahead of her time. A seventeenth century Italian historian has claimed that the most important teachers at the early medical school were women — the 'ladies of Salerno'.

You'll have to read *Hypatia's Heritage* if you wish to learn more about the female botanists, entomologists, geologists, astronomers (eg Caroline Herschel), chemists (eg Marie Lavoisier), and physicists (eg Marie Curie). The book provides and interesting window on the ways in which strong minded women have, over the ages, managed to exploit their often priveleged position to enter and actively participate in the predominatantly male world of science.

Linden Gillbank is a contributor to the 3CR science program, CR-Science.



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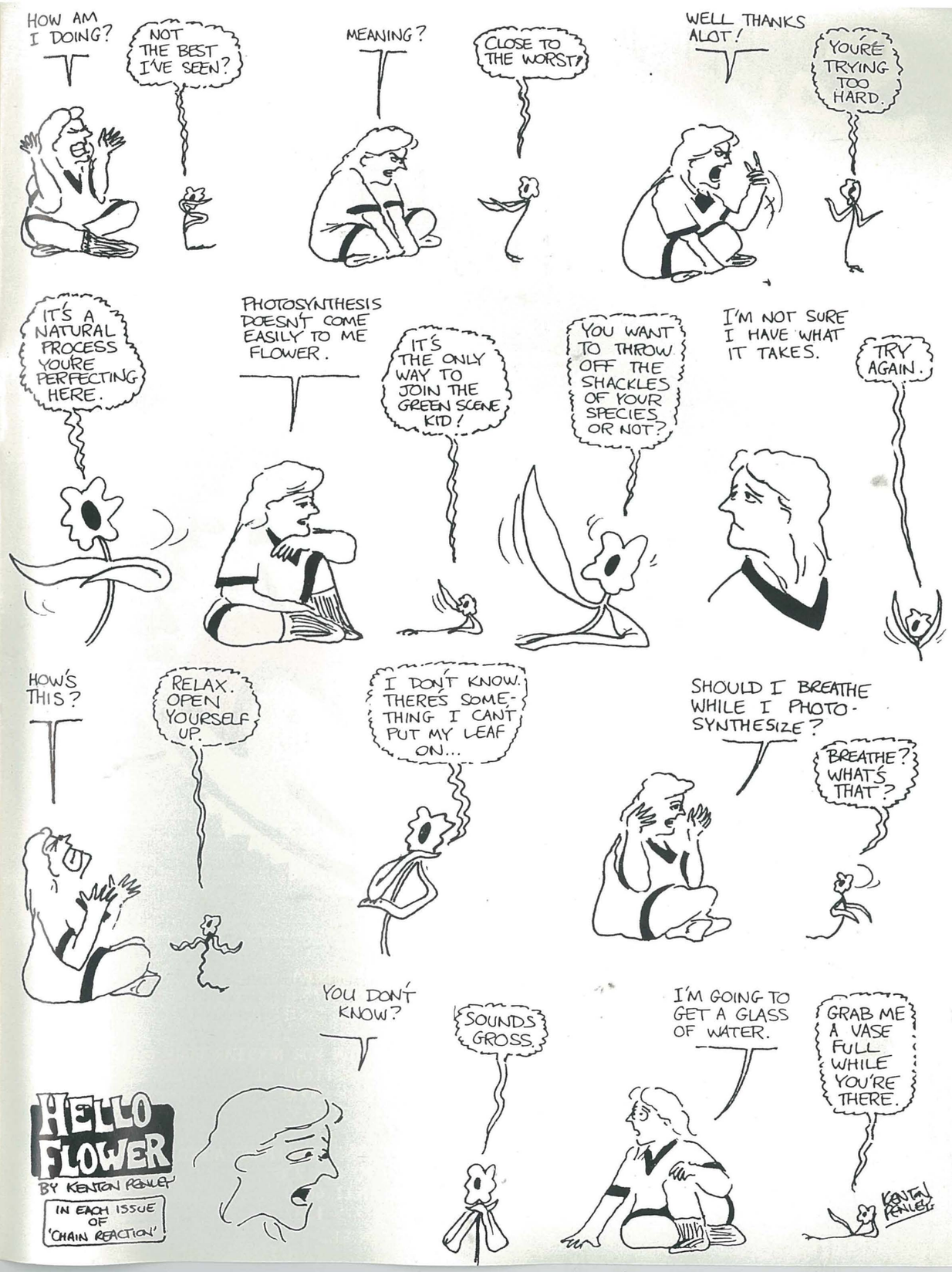

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