AUSTRALIAN
URANIUM:
THE
BOOMERANG
BRAND

WOMEN IN PRISON
DRIVING INTO THE GREENHOUSE
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**LETTERS**

It's a long way to Tipperary

The Leader of the Parliamentary ALP in the Northern Territory, Mr. Terry Smith, was heard to remark during a recent TV interview that he admired and supported the actions of Mr Warren Anderson in developing Tipperary station.

He was referring to the fact that thousands of hectares of land have been cleared and have been or are being sown with improved pasture, thus allowing the eventual turnover of one hundred thousand head of cattle per year, presumably for human consumption.

It is this warped and myopic view of the world, exhibited by both of these gentlemen, that makes one despair of ever having a governmental policy that pays any heed to the ecological effects of such actions.

Whether Mr Smith is concerned or not, the world is hurting towards an over-population crisis, and, paradoxical as it may seem, increasing the world's food supply without the same time establishing population controls will only make the situation worse.

Mr Smith might, but is not likely to, concern himself why his friend Mr Warren Anderson finds it necessary to import endangered African animals into Australia. There is a very simple answer — they are endangered because there is already a human population crisis in Africa, there are simply too many people, and for many of them their standard of living is so low, their security of life so tenuous, that the slaughter of wild animals for money is practically unavoidable.

Not only is the population pressure destroying the native animals, but it is destroying their habitat, which is precisely what Mr Anderson has done at Tipperary, but not because of population pressure, simply because of greed.

CM Field
Alawa NT

Professional activists

This letter is prompted by a recent ad for a campaign officer with the ACE. The terms of the position pointed out just how professional the environment movement is getting. The ad even stated that the successful applicant would 'ideally have an appropriate tertiary qualification'.

Has anyone within the movement questioned the effects that such 'professionalism' will have on the basic politics of the movement? Those who are concerned but lack the appropriate professional qualification will be stuck with the role of 'volunteer'. Without basic grass roots input and action the professional activists will not be able to forge the fundamental social changes required.

Professional activists will only be able to change the balance of egos sitting in Canberra.

Fiona Callahan
Northcote Vic

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**FRI** 11-6
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**EARTH NEWS**

**Marshall Islands Medical Cover-up?**

Rongelapese officials have recently uncovered medical data which suggests a US cover-up of radiation exposure by Marshall Island residents.

The data came to light in an independent scientific review of a 1982 Department of Energy (DOE) report. Senator Jeton Anjain, who represents Rongelap in the Marshall Islands Parliament, says the DOE covered up the data to protect the US nuclear weapons program and to avoid high compensation claims.

The data in question concerns signs of radiation found in urine and blood tests.

DOE officials and scientists at Brookhaven National Laboratory—who have testified at the Marshall hearings since 1987—insisted that the data had little medical significance and posed no health danger which is why it was not mentioned in the 1982 report. Saying that all test results were published eventually in scientific reports they added that 'informing undated, uneducated people of medical complexities was often impossible'.

There were lots of things that might have been added to that report' said Roger Ray, DOE's project manager for the Marshall's from 1972 to 1985. 'The people who wrote it made their choices based on what they believed to be the most significant for the people who had to use it. There was no attempt to conceal information. I know Sen Anjain and, if I told him something in confidence per gram, I'd get a blank stare', Ray said.

Source: Washington Post

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**Soybean irradiation promotion.**

A soybean-based ink developed only a year ago is being used by about a third of America's daily newspapers and industry experts say it could help farmers and reduce dependence on imported oil.

'The data had little medical significance and posed no health danger which is why it was not mentioned in the 1982 report. Saying that all test results were published eventually in scientific reports they added that 'informing undated, uneducated people of medical complexities was often impossible'.

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Source: Australian Financial Review

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**Pesticide Ban Works**

Indonesia's ban on 57 pesticides used in its rice fields is working. Since farmers got the same yields with half the amount of pesticides. And the brown hopper population, which has wiped out thousands of hectares of rice in the past seems to be declining.

According to Dr Soejarto, an entomologist with the Bogor Research Institute for Food Crops, it's too early to come to any definite conclusions but the information we have collected so far shows a decrease in the number of hoppers.

The pesticide ban came into force in November 1986, as part of an integrated pest management programme for rice. It is a revolutionary new strategy in the ongoing war with the brown hopper based on the discovery that the pesticides were simply encouraging the breeding of bigger and better super pests.

The ban's objective is to maintain self sufficiency in rice, Indonesia's major crop. But its impact on the health of rice farmers and the environment is also likely to be considerable.

Source: Third World Network Features
Man-Made Problem

The torrential rains responsible for the deaths of over 300 people in Brazil in February were the result of deforestation. According to Brazilian geologist Luiz Carlos Mollion, "Records show rainfall has been higher in the past. Our problem is man-made. If you look at the areas affected in Rio, it was where deforestation has occurred that suffered the most."

Source: The Guardian

Killer Concentrate

Industrial pollution from the Soviet Union's first bio-engineering plant, producing protein-vitamin concentrate for farm livestock, is poisoning the 60,000 people of Kiriishi near Leningrad. Twelve children have already died, there are over one hundred permanent invalids and the incidence of bronchial asthma has risen thirty-five fold since the plant opened twelve years ago. The concentrate is now banned.

Source: The Guardian

Patenting Engineered Animals

The first ever patent on a genetically engineered animal was issued in April 1987 by the US Patent and Trademark Office. The patent covers the creation of fast growing pigs by the insertion of growth hormone genes into embryos, if it finds that the animals represent a new invention, irrespective of the technique used. The CSIRO also intends to patent similarly manipulated sheep developed within the Division of Animal Production.

Source: Australian Journal of Biological Science

Pollution Increase

Due to population increase and deterioration in water quality, the per capita availability of water for human consumption is decreasing rapidly around the world. The impact will be felt most severely in Third World where water supplies will decline by 50 per cent by the year 2000. This and other disturbing data about pollution levels in drinking water and food and their impact on the human body appear in a well-documented study, Global Pollution and Health, prepared by the United Nations Environment Program (UNEP) and the World Health Organisation.

Michael Gwynee, Director of UNEP's Global Environment Monitoring System (GEMS), reported that the GEMS is the first global report on air and water pollution and their contamination and their effects on human health. GEMS information on air quality comes from 170 sites, usually in or around large cities where pollution levels are generally highest in 50 countries. The report represents different climatic conditions, levels of development, state and pollution. GEMS water quality network consists of 344 fresh water bodies, 240 of them on rivers, 43 on lakes and 61 on groundwater reservoirs. As a result, measurable levels of these chemicals continue in fish, meat and milk.

Source: Earth Island Journal

Throw-away bottles Scrapped

The Swedish Parliament has voted to ban two reactors by 1986, thereby ensuring the first legislative programme by any nation to rid itself of nuclear power. The programme sets a timetable for dismantling the first of Sweden's twelve reactors and establishes a mechanism for deciding when to shut down the others within 21 years.

Source: Australian Currents

Non-violence

According to the editors of The Nuclear Resister against nonviolent resistance to nuclear weapons jumped 60 percent from 1986 to 1987. The number of arrests in 1987 topped 53,000 roughly equaling the arrests reported in 1983, the year of the Euromissile deployment that sparked massive demonstrations in Europe and the US. Nearly half of the 1987 arrests occurred at the annual nuclear weapons test site.

Source: Peace Priorities

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Source: Peace Priorities

Non-violence
Forest Loss
Satellite images used to give the first precise picture of land clearing in Victoria have shown that about 240,000 hectares of mainly native forest has been cleared in the last fifteen years.

LandSat photographs taken in 1987 compared with the first hand-drawn maps from 1869, show that tree cover in Victoria has fallen from an initial twenty million hectares or 50 per cent of the state, to 7,000,000 hectares, or 35 per cent.

In recent times, the worst treated areas have been in the west, which lost well over one-third of the forest cut down in the past 15 years. Most of the later clearing has been on freehold land—209,000 hectares, mainly around Mildura, Horsham and Portland. The figures, compiled by the Department of Conservation, Forests and Lands, come from an analysis of the earliest LandSat swipes of the state, in 1972 and again in 1988. The picture over this timeframe is the first accurate measure of the rate of forest loss and gain in Victoria. Stored on computer, it will become vital baseline data to gauge future changes in what has come to be seen as a depleted and valuable resource.

Commenting on the report, the Minister for Conservation, Forests and Lands, Mrs Kirner, said it should be a warning, particularly to farmers and miners, that all of western Victoria could lose its forest cover by the year 2015.

'While some (clearing) has been necessary for agriculture and Residual development, some has been ill-advised or excessive, resulting in salinity, soil erosion, marginal farmland, unattractive landscapes and pressure on flora and fauna."

On public land, the statistics showed that 36,000 hectares of native forest was cleared over the fifteen years, not counting timber industry harvesting or fire scars in the Macedon, both of which regret. Mrs Kirner said an equivalent area of public land had been replanted, mainly with pines. Of the permanent Crown land cleared, a large part was around Mildura on long-term grazing leases, a reflection of the only recently changed incentives for farmers to release land by removing its tree cover.

Source: The Age

New Rainforest Action Group Established
The Sydney Rainforest Action group held its inaugural meeting on 30 May. At the meeting the group decided to adopt the following aims.

To ensure that:

• Australian overseas aid is environmentally acceptable
• Government and timber industry development projects have focused on the sustainability of using plantation timbers as an alternative to imported tropical timbers.

The group hopes to use its research to provide information to the media, to lobby and resource future campaigns. They will soon be producing their first forest newsletter.

As a lead up to a public meeting on 15 July the group organised a series of street theatre events which

The Littlest Consumers
Scientists at the US National Resources Defense Council (NRDC) and elsewhere have found that children suffer significantly greater exposure to a wider range of pesticides than adults. For a child a potential of five, that could be a much as six to twelve times greater. That is because children not only eat a lot more for their body weight but also tend to eat a lot more foods containing pesticides, such as fresh produce and juices. The typical toddler, for instance, consumes ten times more applesauce and five times more apples for his body weight than the average adult woman.

High exposure to toxins early in life may carry greater costs because children are generally more vulnerable to toxins. Furthermore, early exposure to a carcinogen gives it more time to manifest itself as cancer.

Source: Consumer Reports

Acid Rain Damage
Acid rain has polluted more than 2.64 million hectares of Chinese farmland and is costing the nation two billion yuan ($US560 million) in losses a year, a recent symposium held by the Chinese Academy of Sciences.

According to environmental experts, acid rain damage is particularly notable in the south-west cities of Chongqing, Sichuan; Guangzhou, Guangdong Province and Guilin, Guangxi Province.

The acidity of the soil in these areas is increasing and causing serious crop failures, the experts said.

The State Environmental Protection Bureau says forests are also dying in these areas. The Bureau reported that 46 per cent of the fir trees in a 1,800 hectare forest to the south of Changde are dead or dying, while just 4 per cent of the trees in a 6,000 hectare pine forest in nearby Wuxian to the north are alive and healthy.

The experts blame the worsening acid rain damage on China's heavy reliance on coal for power generation and a wide range of industrial activity.

They have appealed to the nation's environmental protection authorities to strictly regulate the emission of sulphuric oxides from power plants and factories.

They also proposed at the symposium that the Government initiate a long term nationwide acid rain observation and research project to check for further damage.

Source: The New York Times

Acid Rain

Plastic Wrapping Banned

Plastic and paper will be prohibited in Suffolk County, New York State. The new law will apply to restaurants, bars, delicatessens, roadside stands, grocery shops and other retail stores. Under the new legislation, these items will be prohibited if they are not made of paper and cardboard, or if they are selected for the ban mainly because their complex chemical structure makes them particularly long lasting in the environment.

Source: The Environment Digest June 1988

Nuclear Fear
Highly toxic nuclear fuel waste will be transported by truck through densely populated areas of Sydney four times later this year. A Sydney Morning Herald report said that a total of 450 spent nuclear fuel rods from the Lucas Heights atomic reactor will be shipped to the USA between July and December this year.

Source: The Herald
What do paper recycling, decentralised appropriate sewage treatment and sustainable energy strategies have in common?

Correct, they are just a few of the issues that FOE Sydney are working on at present. They are also more than this. They represent solutions rather than problems and this is the key to the working philosophy of FOE. Changing the cops involves not just opposing this power station or that forestry operation or the other chemical plant. These actions are important, most particularly when they raise public awareness, empower communities and force the costs of noxious industries to increase relative to less noxious ones. However, taken by themselves they are much like fighting a series of forest fires while the pyromaniac, in full view, blunders on ahead.

**Paper Recycling: From Rip-off to Reuse**

Hence paper recycling. FOE Sydney is about to complete a comprehensive analysis of the various factors working to prevent paper recycling in Australia. Why is there no significant production of fine paper using recycled pulp in Australia? Why isn't the Federal Government taking up some of the enlightened measures that have been implemented in some states in the US: paper procurement policies, preferential pricing, tax incentives? In fact, in a variety of ways, the Australian state governments actually subsidise the existing pulp and paper industry with favourable forestry concessions, freight subsidies and so on. The purpose of the FOE campaign is to work to create favourable circumstances for the creation of a paper-recycling mill in Australia. Of course patterns of paper usage are the key (much more is to be gained from reducing consumption and waste than by reusing waste). The other aspect of the campaign is to tie together material from a long running campaign on packaging, and construct an education kit and manual for budding waste reducers and reusers.

**Sewerage: Don't just fight them on the Beaches**

All around our beautiful coastline, we are pumping our waste out to sea, the modern final resting place for all our muck. Why? In the last hundred years we have been working to perfect an engineers solution to the disposal of waste, but created an ecological nightmare. Toxic industrial waste accumulates in ocean life. Virus levels are now building up off the United States coast and therefore, by implication, the Australian coast.

FOE Sydney have been assembling information and campaigning on sustainable alternatives. It's hard to get a hearing for them in a capital city context, even though a four storey West Berlin apartment sports a biological composting toilet system and greywater recycling. So we have taken the campaign to coastal towns and produced a report which outlines a sustainable strategy for the NSW north coast town of Byron Bay. Again a campaign not just against a noxious practice, but also for a sustainable alternative.

**Energy Strategies: Kicking the Fossil Fuel Habit**

Nuclear power is a soft target now. Wall Street rejected it long ago and its future looks shaky. It is patterns of energy use themselves that are the problem — our current consumption patterns are unsustainable and unnecessary — we can and must 'live better with less'.

Recent alarm over global atmospheric changes resulting from industrial growth have put energy issues firmly and hopefully permanently back on the agenda. The Greenhouse '88 conference to be held in each capital city in early November must address the issues of energy use, industrial growth and sustainability. To facilitate this FOE will publish an expanded version of the proceedings of the Energy Strategies Symposium held at the ANZAAS Congress in Sydney in May. This will provide an important information resource on sustainable strategies for members of the public.

Interested in more information or working on these or other issues contact us:

Friends of the Earth Sydney
4th Floor, 56 Festy St,
Surry Hills NSW 2010
Ph: (02) 211 3953
Last Easter Sunday five members of the Catholic Worker community in Brisbane were arrested for climbing the 'Plessey Pusher' complex at the Cabarlah Army Base near Toowoomba, Queensland. The five were charged with wilful damage, trespass, and refusal to leave Commonwealth property. On 2 June they went to trial in the Toowoomba Magistrates court. Chain Reaction reports on their trial.

The five, defending themselves, decided to present evidence showing that they had acted under duress, feeling that nuclear war is a clear and imminent threat both to themselves and to the planet, and that their belief in the necessity of resisting this holocaust, based on their Christian convictions, forced them to take dramatic action.

Accordingly, they subpoenaed the commander of the Base to give evidence as to the role of Cabarlah in fighting a nuclear war, a psychologist to discuss 'nuclear numbness' and the necessity of taking action to break the silence which surrounds these installations, and a theologian to show how peacemaking is an essential part of Christianity. These witnesses were deemed 'irrelevant' and were denied. The prosecution and the magistrate tried to make the five acknowledge that there are other legal alternatives to sitting on the roof praying, such as leafleting, petitions, marching and doorknocking - could these not be the path to peace?

The prosecution maintained that the five had no personal knowledge of what went on in that little grey shack at Cabarlah but, however, gave them no opportunity to demonstrate their knowledge.

You can write to the Cabarlah five:
C/- HM Prison
Boggo Rd
Brisbane 4000 QLD.

The magistrate cut him off, as he had done constantly through the trial, 'I take responsibility for nothing ... I don't care what Jesus said ...' and declared the day over. Guilty as charged.

Ciaron writes from the maximum security wing of the jail, 'It is not enough for politicians, prosecutors and ourselves to shout, "fire fire, I'm opposed"; we must begin to move towards the exit, to follow the lead of brothers and sisters in the United States who are non-violently disarming weapons, of draft resisters in Poland and Hungary, and all of those imprisoned for speaking truth to power.'

The information for this article was supplied by the Catholic Worker Community in Brisbane.
Keep off the beach

The Sellafield (formerly Windscale) nuclear reprocessing plant on England's west coast regularly discharges radioactive effluent into the Irish Sea. Jean Emery was born in 1957, a few months after a disastrous reactor fire at the Sellafield plant. Like many families on the coast of Cumbria Jean has lost relatives early in life, often from cancer.

She recently visited Australia to tell people of the experience of Cumbrians living in an environment made radioactive by the Sellafield plant. Australia is linked to the plant through the reprocessing of its uranium after it has fuelled European reactors. Jean explained during her stay that 'What we're trying to do and why we come to places like Australia is to say 'Don't go down the nuclear path'.

The following comes from an interview with Jean Emery by Peter Hunt broadcast on the ABC Earthworms programme.

The village of Seascale has ten times the national average for child leukaemia. When the village next door to the plant shows cancers and leukaemias it doesn't take an Einstein to make a connection. Around the Dounreay reprocessing plant for fast breeder reactor fuel in North Scotland they have also found an excess of child leukaemia of the same order of magnitude as around Sellafield. The probability of this happening by chance is about one in five million.

The plants put out plutonium and americium which is even more toxic than plutonium. Contamination is through various pathways - children playing on beaches, inhalation of radioactivity and, certainly along the west coast where Sellafield is located, there is household contamination.

Believe it or not both Sellafield and Dounreay plants deliberately discharge radioactive effluent as part of their day to day procedure. They are 'authorised' to discharge to a 'safe' limit. The effluent carries freely accessible plutonium, cesium-137 and about forty other different radioactive isotopes, all discharged at phenomenal level. Plutonium-241 had no authorised discharge limit yet it decays into americium-241.

You simply don't lie on the beach anymore. You know it's something we have our own black humour about. I live on a peninsula. I used to love fish and other seafood but I just don't eat it anymore. The irony is that another thing I did love was British lamb. Here we are in England two years after Chernobyl and we still cannot kill lamb to eat because of radioactivity from a reactor accident 1,800 kilometres away. It's an extraordinary situation.

Along the Cumbrian beaches are the worst spots. It is up to 28,000 times the weapons fallout of the 1950s. They have poured half a ton of plutonium into the Irish Sea. Compare that with Maralinga where they dumped 29 kilograms of it.

You can have first rate science from places like Oxford and Cambridge but if you have third or fourth rate attitudes to health and safety, according to how they treat a local population, then these things will happen. Just because these people come from a highly advanced technological culture, it does not say what their attitudes to health and safety are.

We have a man called John Dunster who sits on the International Commission for Radiological Protection (ICRP). That body oversees radiation standards worldwide. He was the man who actually started the Sellafield discharges and he deliberately increased them in 1956. He admitted they had been deliberately increased as part of a scientific experiment. The Sellafield plant is the most cowboy operation in the nuclear world. So the man who is at the head of health and safety is also preaching to the world about radiation issues. It is too incestuous and such a compromising situation that we would like to see it stopped.

These people are telling you everything in hinky-dinky in other countries. Radiation health and safety standards, whether you are having an X-ray or are in industrial radiography or uranium mining, are all set by the ICRP which, I might add, is a non-elected, non-defensive body and has no legal status in the whole world. If a bunch of environmentalists or anti-nuclear people were to do the same, would you listen as much? Probably not, because they do not have the same military or industrial backing up these people have.

There is a contract with Royce Downs for the supply of 3,000 tonnes of uranium to the electricity body in England. That will go through the reactors and eventually end up at Sellafield. There has already been a shortfall of plutonium and it hasn't been lost through accounting procedures. Australians should know that Australian uranium could end up being used for military purposes. And if you think that safeguards will be effective then remember that Euratom inspectors, who are meant to look after Australian interests in Europe, have no access to the Sellafield reprocessing line because it is a joint military and civil complex.

Once the uranium gets to Britain can anyone say hand on heart where it's going? Britain has been involved in a lot of subterfuge in the nuclear industry. The British nuclear industry has been taken to the International Court of Justice with its European partners in France because they have been illegally importing Nambian uranium. One of the tricks they use is to move it around in furniture vans.

No-one knows what is going on.

Now do you expect these people to suddenly become honourable and open and honest with Euratom inspectors just because it's Australian uranium, because of the British connection?

Although the detailed epidemiological studies are still underway there is good evidence of premature deaths of workers at Sellafield from heart disease and cancer. The thing that really improved the message of the true dangers of radiation.

I have lived with nuclear workers all my life. I was married to one, my father worked at Sellafield, my cousins worked there. So I see it all from a personal angle, you see how people perceive things. At the beginning people thought they were just affecting themselves, now they realise the environmental and long term effects. A list of people do find it a frightening place.

The economic and social implications for people who do demonstrate or make noises makes it difficult. The wider British public show a huge amount of concern about it. Just before the election the Government backed down over very low level nuclear waste for which they had four sites already allocated.

Unfortunately there is nothing that we can do about the Sellafield area now. It's been contaminated for thousands and thousands of years. Plutonium has a half life of 24,000 years. What we are trying to do and why we come to places like Australia is to say don't go down that path.

We say that everywhere we go. Don't take the waste because if they do use it as an excuse and they'll go on creating it. Don't go down the nuclear path it's not economic. It's unnecessary and it's unsafe. And a country like Australia is the last place on earth with all the things you have here that needs the nuclear industry and all the problems that it brings.

This article was initially transcribed by Les Dalton for the Movement Against Uranium Mining Victoria newsletter.
Australian uranium safeguards do not allow for Australian uranium to be used for non-peaceful means. The nuclear community has never before found a way to get around this problem. John Hallam offers some insight into the creative accounting that allows Australian uranium to end up where the nuclear industry wants it.

Now that Australia is exporting around four thousand tonnes of uranium a year worth about $350 million and looks likely to export another two thousand tonnes per year from Olympic Dam (if BP and WMC can get the contracts), there is growing concern about where our uranium is going. Queensland mines have been allowed to sell to France in defiance of existing ALP policy, and there were moves to change ALP policy at the Hohart conference to allow increased mining.

One of the reasons that these moves failed — at least for the time being — is concern that our uranium may be finding its way into weapons and that the spirit of Australian safeguards is being eroded by the practice of 'Flag Swapping' between uranium sellers under the aegis of Euratom.

The concern about flag swaps really arose in February 1988, when a dismissed employee from NUKEM, the West German uranium, brokerages and fuel-cycle firm, sent confidential documents from NUKEM to a European Green Party MP, Ms Undine Von Blottmitz and the West German magazine Der Spiegel. Von Blottmitz forwarded the documents to Australian Democrat Senator Norm Blottnitz, who then forwarded them to the US Department of Energy (DOE) and the Nuclear Regulatory Commission. The DOE has decided to interpret the Comprehensive Anti-Apartheid Act to allow the importation of uranium from South African company, now had title to South African uranium, but not to allow the import of the ore. So it seems that if SANO material gets converted to uranium hexafluoride in, say, France or the UK, it magically becomes material of French or British origin in the eyes of the DOE.

In addition to its liberal dispensation regarding uranium hexafluoride, the DOE has said it is willing to record changes of origin in its accounting records for uranium held in stockpiles pending enrichment. But it seems that there is bit of in-fighting between agencies of the US Government: the US Department of Energy takes an altogether different line. The Department of State, in particular, dislikes utilities and suppliers at a conference in May 1986, to any attempt to import uranium mined in South Africa by redefining its origin would be dealt with under customs regulations as an act of fraud. After all, an agreement between two holders of uranium to pretend that uranium mined in South Africa was mined elsewhere does strike one as fraud doesn't it? Let's look at a couple of flag swaps outlined in the documents leaked from NUKEM.

The first deal is a good example of the mind-boggling complexity of many swaps. On 5 January 1986, NUKEM's subsidiary NULUX took delivery of 207,591 pounds of uranium ore from Energy Fuels Nuclear of the US. The fuel was stored in the US. Ownership was transferred to NUKEM.

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Institut Laue-Langevin (ILL) reactor in Grenoble — in violation of Australian safeguards conditions. The problem is that, according to NUKEM, by the time this happened, the uranium no longer of Australian origin but from the US!

This deal involved a number of complicated steps. At the start NUKEM made a deal with ILL to supply 25 kg of highly enriched uranium. It then looked for uranium to sell to ILL. Then, NUKEM's subsidiary NULUX gave NUKEM 2,000 kg of US-origin scraps of uranyl nitrate which seems to have come from the de-fabricated fuel of an abandoned reactor in Austria. Uranyl nitrate cannot be enriched without first being converted to uranium hexafluoride, a time-consuming, inconvenient and expensive process. These scraps were then swapped with a cylinder of 1,289 kg of Australia origin hexafluoride from a West German utility, RWE, also linked to NUKEM.

The enrichment of the Australian hexafluoride beyond 20 per cent, as was envisaged, would have required Australian permission; permission that NUKEM wasn't sure would be forthcoming.

The solution, swap the origins! Accordingly, NUKEM and the West German RWE utility swapped the nationality labels and the safeguards on the two lots of uranium, so the Australian uranium now bore a US flag and US safeguards. The eminently enrichable uranium from Australia origin hexafluoride from an Australian permission; permission that NUKEM wasn't sure would be forthcoming.

The response of the Australian Office to track the material to ensure that it is retained in the peaceful use cycle at all. Failing this, Australia can at least demand some greater degree of control over the swap business then at present.

One possibility would be to allow origin swaps but to insist that Australian safeguards be attached to all uranium that ever bears an Australian flag, no matter what its subsequent flags. Another tack would be to permit ownership swaps only to refuse origin or safeguards swaps outright. A third is to allow swaps only between identical batches of uranium bearing identical safeguards obligations.

The disturbing aspect is that the Australian Government has not shown the slightest interest in tightening up the system. Rather, it has sought to defend it as it stands, although it allows Australian uranium to end up in some pretty dubious places.

One way of tackling not only the problems presented by the swaps, but a host of other safeguards problems was spelled out in Senator Norm Sanders Nuclear Non-Proliferation (Exports) Bill 1988. This would ban outright uranium exports to any country:

- Is not a Nuclear Non-Proliferation Treaty signatory (eg France)
- Does not have a bilateral safeguards agreement with Australia.
- Does not accept safeguards on all its nuclear installations, (eg USA, USSR, France, UK)
- Plans to produce, or is producing, uranium enriched to 20 per cent or more, or plutonium, (eg US, USSR, France, UK, Japan, West Germany)
- Has another country's nuclear weapons on its soil, (many countries)
- Hasn't specifically agreed not to involve Australian uranium in flag swaps

This would not completely prevent the export of Australian uranium. However, according to Sanders, 'It would ban uranium sales to most of Australia's current customers, with exception of Finland and maybe Sweden'.

As Sanders points out, this would cause the uranium supply to shrink, as Australia is sitting on 30 per cent of the world's low-cost uranium. Our leverage is considerable. In Norm Sanders own words:

This bill would give Australia significant leverage with which to prevent the spread of nuclear weapons. This leverage would not be immediate. Australia would have to forego revenue from uranium sales to countries who are not contraventions of Australian safeguards. The most obvious is of course not to be involved in the nuclear fuel cycle at all. Failing this, Australia can at least demand some greater degree of control over the swap business then at present.

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The disturbing aspect is that the Australian Government has not shown the slightest interest in tightening up the Australian uranium: The Boomerang Brand

John Hallam, alias John Hallum, is a researcher with POE Sydney and a regular contributor to Chain Reaction.
The issues of Australia's role in the mining, milling and export of uranium remain among the greatest environmental concerns in this country.

Uranium is a hard white metal that has been found in great quantities in Australia usually in the form of uranium oxide — yellowcake. It is sought because its physical property of absorbing neutrons and splitting its nucleus releases an amount of energy. This energy is used to build the awesome power of nuclear weapons or as heat which is converted to power.

The arguments against uranium are overwhelming — on the grounds of economy, morality and safety. Yet good arguments have not been enough to stop Australia heading down the nuclear path. Uranium in Australia is currently mined at three locations, with many other exploration sites, the future of these sites is unclear.

There have even been suggestions from some politicians that Australia should undertake uranium enrichment and nuclear power generation, and build nuclear powered submarines. There has been no mention of Australia needing to build nuclear weapons, although there have been newspaper discussions of the country's capabilities should the need arise.

It is claimed that Australian uranium is only used for peaceful purposes. But recent revelations of 'flag-swinging' demonstrate that the addition of Australian uranium to the world supply enables other uranium to be diverted to nuclear weapons. Some of the metal mined in Australia may actually be going into nuclear weapons.

Nuclear power generation of electricity has not been the savior once predicted. Australian uranium may not have been used in the reactors of Chernobyl, Three Mile Island or Sellafield, but how long will it be before we fuel another catastrophe? Will we feel the stealthy statistics of cancers and birth defects?

This supplement gives an overview of the situation at each of the existing three sites of mining activity and the major sites of exploration in Australia. It is intended to be a source of useful information for all people involved in debating the issues of uranium mining.

### ALP U-turns

The intensive anti-nuclear campaigns in the 1970s led the Australian Labor Party to completely change its uranium policy from one of support, in 1973, to one of total opposition to the mining, milling and export of uranium in 1978.

However, with two uranium mines producing and exporting despite some trade union opposition, the ALP in 1982 developed a 'no new mines policy'. It provided for the continuation of Ranger Uranium Mine and Nabarlek in the Northern Territory, and the commencement of Roxby Downs in South Australia.

Despite the existence of two additional uranium deposits in Kakadu National Park, a World Heritage area, only Ranger would be permitted to operate. The export of uranium to France would be banned, while it continued nuclear testing in the Pacific.

Roxby was a political trade-off to benefit the Labor Party in South Australia which was to face a State election that year. It subsequently won office and in March 1983, a Federal ALP Government was elected. Some political commentators believed that the new ALP uranium policy was a practical compromise.

In 1986, the Australian Mining Industry Council (AMIC) mounted a major campaign to gain access to National Parks, Aboriginal land and conservation areas. With Federal and State elections due within 18 months, AMIC timed their action to extract the maximum political benefit, using Kakadu as the prime target.

AMIC lodged full page national newspaper and TV advertisements denouncing Aboriginal land rights and invited readers to apply for a free series of glossy well-produced maps and brochures which advocated the mining argument.

A Federal Parliament Senate Standing Committee commenced an investigation in March 1986 on the potential of Kakadu National Park Region with particular reference to:

1. the nature of the resources available for exploitation and
2. the impact of utilisation of these resources, particularly mining and tourism.

By September 1986, after the Senate Committee had reported its findings, the Federal Government bowed to the mining industry by reserving for mining within 25 per cent of a proposed Kakadu addition. The fact that BHP had a 45 per cent interest in a potentially valuable platinum and gold mineral deposit at Coronation Hill, all within the reserved area strongly influenced the Government's decision. Uranium may be present in the orebody, however BHP is not unequivocal on this.

The Labor Government, in August 1986, also granted approval to export uranium to France in a budgetary move aimed at increasing foreign exchange earnings. The decision reflected business arguments, opportunism and many ALP members resigned from the party in disgust.

Media public opinion polls were heavily biased public opinion polls conducted by AMIC in November 1986 gave the impression that a majority of Australians supported exploitation of Kakadu. In a series of legal manoeuvres in December, through Peko Wallsend, AMIC frustrated the World Heritage listing of the proposed Kakadu addition, effectively delaying declaration for at least two years.

In March 1987, the Government denied a request by Ranger Uranium Mines to release contaminated excess water held on the mine site into the environment.

The decision was widely regarded as an attempt to maintain the conservationist vote in an election year. The July 1987 Federal election immobilised the Kakadu Senate Committee, and its report is unlikely to be published.

A second national park with Aboriginal custodians, in Western Australia, has been opened up as a major issue following publicity in 1987. CRA and Western Mining Corporation are exploring for uranium and base metals around and within the boundaries of Rudall River National Park, situated about 500 kilometres south east of Port Hedland.

The WA Chamber of Mines and AMIC jointly pursued an extensive advertising campaign in Western Australia throughout 1986-7 which, the Federal Government claimed, effectively prevented a National land rights policy for Aboriginal Australians.

In January 1988, the ALP approved a new uranium sales contract between Ranger Uranium Mines and Electricité de France, and permitted a subsidiary of Cogema France to buy 1.25 per cent of Ranger. Cogema prepares nuclear material for French nuclear weapons.

While there has been a downwards revision of France's uranium requirements, a further indication of a weakening nuclear industry, the Labor Government plans to eventually capture sales of around 2,000 tonnes annually to France. This issue is hotly contested within the Labor Party and pressure from anti-nuclear campaigners against French tests in the Pacific is a key link in the argument to prevent any further deals with France.

The ALP National Conference in June 1988 faced much pressure on its uranium policy and decided to ask the ALP National Executive to establish a review process. This review was considered urgent at the time and it was agreed that changes to the policy may be decided by a postal ballot of the delegates.

However, the tide is turning in public opinion and the nuclear industry remains unhealthy. A newspaper poll conducted one week after the Conference found that a clear majority of Australians opposed increasing the number of uranium mines, the increased export of uranium, establishing a uranium enrichment plant and storage of nuclear waste in this country. (Australian, 16 June 1988).

The market for uranium is declining with nuclear power utilities going bankrupt in the United States, the recent reduction in projected French demand, and one of the world's largest uranium mines at Roxby Downs going into production with contracts for only half its output.

The memories of Three Mile Island and Chernobyl give the superpowers another common link, and all the world shares nuclear power's potential for danger. There is even talk of reducing nuclear weapons stocks. Uranium prices are dropping, yet there are some people in Australia intent on opening more mines and selling more uranium.
Australia has an estimated 30 per cent of the West's total uranium reserves and is sixth in a list of producers after Canada, the USA, South Africa, Niger and Namibia.

Over fifty locations of uranium deposits in Australia have been publicly gazetted and there are three mines in commercial production.

Uranium was first discovered in 1906 at Radium Hill, South Australia. A second deposit was found in 1910 at Mt Painter. Both were mined before World War Two for their radium. Radium Hill was reopened and, along with Rum Jungle in the Northern Territory, supplied the uranium to fuel the American and British nuclear bomb projects after World War Two and until the early sixties. A plant at Port Pirie refined the ore from Radium Hill leaving to this day radioactive tailings out in the open.

Another early mine, Mary Kathleen, opened in 1958 and closed in 1963 due to a depressed market. It was reopened in 1974 and finally closed in 1982. Yellowcake from the mine continued to be exported to the US and Japan in 1984.

Between the late 1960s and mid 1970s discoveries were made in Australia of some very large deposits. Included in these were the three large deposits of Jabiluka, Ranger and Koongarra and the rich, although small deposit of Nabarlek, within an area known as the Alligator Rivers Region in what is now Kakadu National Park. Discoveries were also made in Western Australia, in particular a large one at Wellirrie. In 1975, possibly the largest known deposit in the world was found at Roxby Downs in South Australia. a similarly large deposit of uranium exists in the Maureen area of north east Queensland, but not with other minerals sufficiently to consider mining yet.

A number of other, smaller deposits have also been discovered and proposed as mines but rejected environmental grounds. These include Ben Lomond, West of Townsville which threatened contamination of water supplies and Beverley, east of Mt Painter in South Australia where the leach ining process would have polluted the underground water table.

This map shows some of Australia's uranium deposits and all existing and closed mines. Also included are nuclear test sites and the Lucas Heights nuclear reactor — places where Australian uranium has been used.

Further details of major deposits are in the following pages. Map compiled by Salvatore Rotin for Pax Christi Australia.
RANGER

Location: Northern Territory, Jabiru, Alligator Rivers region, 250 km east of Darwin.

Ownership: Energy Resources of Australia Ltd. Major shareholders are EZ Co of Australia 30.85 per cent; Peko Wallsend 33 per cent; Australian corporations 10.5 per cent; Australian public 5 per cent; Japan Australia Resources Development 10 per cent; Rheinbraun Aust. (FDRG) 6.25 per cent; Ug Australia Developments (FDRG) 4 per cent; Interuranium Australia (FDRG) 3.75 per cent; Oskarsvammsverket Kraftstopp Aktiebolag (Sweden) 1 per cent.

Reserves: 140,000 tonnes uranium oxide.

Mining: Commenced production in October 1981 producing 3,000 tonnes each year by open cut, acid leach, with saturated tailings.

Uranium contracts: Ranger has eleven contracts with the USA, European countries and Japan for 47,400 tonnes.

The Federal Government in 1988 approved a sales contract with France for 3,662 tons and French investment to 1.25 per cent in the mine. Ranger intends to double production if contracts with France are signed.

Environment: Ranger's tailings dam contains more than 150,000 tonnes uranium oxide. Mining: Proposed underground, acid leach, saturated tailings to produce 9,000 tonnes each year.

Uranium contracts: Proposed Pacient Mining Ltd. Most of the uranium will be used for nuclear power.

Location: Northern Territory, Jabiru, Kakadu, 270 km east of Darwin.

Ownership: Pancontinental Mining Ltd. Major shareholder is American Aluminum Corporation.

Reserves: 230,000 tonnes uranium oxide and 12 tonnes gold.

Mining: Proposed underground, acid leach, saturated tailings to produce 9,000 tonnes each year.

Uranium contracts: Pancontinental has not publicly stated marketing arrangements.

Environment: The orebody extends into the Arnhem escarpment in the east and is covered for six months each year by the Magela Creek floodplain in the west.

An agreement with the Northern Land Council was negotiated in 1979 to allow mining, after internal opposition, but the Government has, for similar reasons to Koongarra, resisted pressure from the company to allow mining.

The uranium and gold deposit is being exploited on a care and maintenance basis pending a change in Federal Government policy. However, a new company, Rubidium, has been set up to mine the deposit.

More than 20 new gold mines have commenced production in Australia since 1985 and there is no ALP opposition to gold mining generally, but the doubling of gold prices hardly represents any greater incentive to mine at Jabiluka.

Documents leaked from BP Australia in October 1986 suggested that the Government was under pressure to allow mining. However, there has been no indication that the Government is favouring the company.

Pancontinental underwent a structural change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership as this change in 1987 which may sanction a reduction in its foreign ownership.
NABARLEK

Location: Northern Territory, within Anhem Land Aboriginal land, 20 km north-east of Gunbalanyu (Oenpelli). Ownership: Queensland Mines Ltd (QML). Major shareholders are Pioneer Concrete 50 per cent, Ampol Ltd 50 per cent (Note that Pioneer owns 79 per cent of Ampol).
Reserves: 13,000 tonnes uranium oxide, expected to be depleted by mid-1988.
Mining: Commissioned production in April 1988 producing 1,500 tonnes each year by open cut (mined entirely and stockpiled in 1979), acid leach with saturated tailings.
Environment: Uranium contracts: QML has six contracts with Japan, Finland and France for 8,120 tonnes.
Nabarlek was also considered by the Ranger Inquiry and after its draft Environmental Impact Statement was released in 1978, the Coalition Government approved the project almost immediately.
The ore body which was relatively small and rich, was mined in one year and stockpiled to be processed over ten years. By mid 1988, Queensland Mines Ltd will complete milling ore which had been extracted in 1979. Plans are advanced for the decommissioning and rehabilitation of the mine site.
In March 1981, contaminated water escaped from a plant run-off pond at Nabarlek and entered the creek system. Soil studies six months later indicated elevated levels of contaminants (Cu, U, Mn, Pb, Zn) at the monitoring sites downstream of the pond. Further research was regarded as necessary by the authorities but no public reports of studies have appeared.
The tailings at Nabarlek are neutralised with lime and disposed in the open cut. Until June 1985, the tailings had been maintained in a wet state but since that time semi-dry techniques were employed. Authorities believe that improved conditions for rehabilitation are resulting although the company still has to remove the sub-surface excess water which was originally deposited with early tailings.
The Northern Territory Government has lobbied Queensland Mines to continue exploration on Aboriginal land so that the $60 million plant at Nabarlek can be utilised. Since 1981, the mine has maintained a very low profile but has sought to influence the nearby Aboriginal community at Gunbalanyu (Oenpelli) to permit further mining exploration activity.
QML has applied for exploration licences in the vicinity of the region surrounding Nabarlek, but has had only partial success in convincing Aboriginal owners to permit exploration. Exploration on Aboriginal land is a key issue and it is apparent that, despite a contraction in the uranium market, some mining companies are anxious to explore for base metals and to alienate land as part of the AMIC campaign.
The Australian mining companies do not want Aboriginal land rights to be extended to the States and it bolstered their political strategy to claim that no agreements had been signed for more than five years permitting exploration rights to Aboriginal land in the Northern Territory.
However, the first major exploration agreement was signed between the Northern Land Council (NLC), representing Aboriginal landowners, and a joint venture of Uranerz Bergau GmbH, West Germany and Kumagai Gumi (Japan) on 1 August 1986. The agreement was for exploration of a highly prospectively uranium exploration licence at Myra Falls, 60 km south-east of Gunbalanyu. Uranium will possibly be located there.
The NLC argues that the agreement recognizes that foreign companies will negotiate with indigenous people on fair and equitable terms as opposed to the Australian interests which have political objectives in opposing Aboriginal land rights.
KOONGARRA

Reserves: 15,000 tonnes uranium oxide. Mining: Proposed open cut, acid leach with saturated tailings to produce 2,000 tonnes uranium oxide each year.
Uranium contracts: Denison have not stated their marketing arrangements although it has been suggested that Denison Canada have virtually pre-sold uranium which it intended to be supplied by either Koongarra or a mine operated by Denison in Saskatchewan, Canada.
Environment: Although technically exposed, the uranium deposit is considered to be relatively low in radioactivity.
Traditional owners of Koongarra criticized the delegation, who were not owners of Koongarra land, for mis-representing the Aboriginal position. (Source: Letter from the Secretary, Bob Hogg, following his comments that ALP members were manipulating Aborigines). The Ranger Inquiry stated that Koongarra should not go ahead under any circumstances given its proximity to the Woolwoonga birdlife area in Kakadu. It is also in the vicinity of the Nourlangie Rock and areas of important Aboriginal art.
The mine has been mothballed principally because of the danger it poses by its location at the head of the catchment which flows through the Woolwoonga sanctuary.
Denison purchased the lease from Noranda (both Canadian corporate multi-nationals) in 1981. The uranium deposit and camp are on a care and maintenance basis pending changes in Federal Government policy. Despite a review in 1984 of ALP policy, export licence approval has been withheld from Denison. The Liberal and National Parties would allow mining in the existing Kakadu National Park. Attempts have been made to force the Government to reincorporate the area into the National Park, however this has been politically difficult.
After protracted legal argument and bitter internal disagreement between the Aboriginal owners, the Northern Land Council negotiated an agreement to mine at Koongarra in 1984. The NLC has campaigned to have the Government de-cision on export licences reversed to allow mining, but they have received no support from foreign mining companies. The NLC position is somewhat contradictory, as evidence in some of its own policies has been taken as grounds for the reasons for not permitting Denison to mine 'Kakadu — A Land and People Under Siege'.
KARLAMILYI

Location: Western Australia, on the edge of the Great Sandy desert, about 1,200 km north east of Perth. Ownership: Canning Resources a subsidiary of CRA.
Reserves: 35,000 tonnes. Mining: Proposed open cut. Uranium Contracts: unknown. Environment: The 1.5 million hectare Radial River National Park (Aboriginal people call it Karlamilyi) provides one of the best examples of an undisturbed desert ecosystem in Australia and perhaps the world.
The Radial River National Park is the largest in Western Australia and second largest park in Australia. It is also land to which the Aboriginal Marnijjarra tribe makes traditional claim. The nearest Aboriginal communities at Panmam and Pangaru are not recognised as landowners but have attempted, since 1981, to establish viable settlements in the region. The riverine environments figure prominently in the social and cultural geography of western desert Aboriginal beliefs.
Since 1985, exploration for uranium and base metals within and around the Park by Canning Resources has been encouraged by the State Labor Government. Canning has spent almost $20 million exploring the Park and has established camps and access roads through the northern sector of 7,400 square kilometres of the Park. Canning will spend $10 million in 1988 on further exploration and facilities for production of a 1,000 tonne a year open cut mine, although the deposit lies about 700 metres inside the National Park.
KARLAMILYI is also looking for other minerals in the Park, including gold and platinum, however, it stopped drilling in the Park's eastern region in late 1987 under the direction of the Western Australian Desert Land Council. Western Mining Corporation holds ad- jacent exploration permits and is keenly interested in the region but has made no announcements.
There is considerable pressure in Western Australia to open up National Parks to ‘resource utilisation’. A Western Australian Commission of Inquiry on land management in 1987 concluded that, with the exception of sites of extraordinary aesthetic, ecological or cultural significance, all else should be viewed as potential development zones.
YEELIRRIE

Location: Western Australia, 70km north east of Perth, near Kalgoorlie. Ownership: Western Mining Corpora-
Reserves: 47,320 tonnes uranium oxide. Mining: Proposed open cut mining producing 2,000 tonnes a year.
Contracts: None.
Environment: A semi-arid region reliant on underground water. The area of the proposed mine already has very high radon levels.
A draft environmental impact system was prepared in 1978 and a pilot processing plant established in Kalgoorlie. However commercial arrangements between joint ventures did not materialise and the Aus-
MÁNYINGEEM

Location: Western Australia, 80 km south of Onslow. Ownership: Total Mining Australia, subsidiary of Total France. Reserves: 4,000 tonnes. Mining: alkaline leach or in situ solution mining.
Contracts: unknown.
Environment: The mine is located in an old dry bed of the Ashburton River.
Uranium exploration started in 1973 and uranium mineralisation was discovered in 1974.
The company actively developed the mine in 1985 despite the ALP policy on uranium mining and in that year up to 26 tonnes of yellowcake was produced. Technical problems with the pilot plant forced total abandonment development of the site as a mine in December 1986.

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**ROXBY DOWNS**

Location: South Australia, Olympic Dam, 20 km southwest of Broken Hill. Owned by 25 per cent MIM Holdings Ltd; 25.5 per cent CSR, 25.5 per cent Teton Mining. 

Reserves: 3,384 tonnes uranium oxide. Mining: Proposed solution or in-situ leaching producing 250 tonnes per year.

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The Roxby Downs/Olympic Dam uranium deposit is one of the largest in the world and it has led to the largest anti-uranium activity in Australia. Two blockades held in 1983 and 1984 aimed to mobilise public opinion and put pressure on the ALP to overturn its 1982 policy which was seen to allow the mine to proceed. The Kokatha people have continued to campaign against the mine’s effects on their country. In 1983 they blockaded a road which was desecrating sites, and achieved some concessions from the company. Kokatha representative Joan Wingfield undertook an overseas speaking tour in mid 1988 to point out the activities of the miners.

North of Roxby are the Mound Springs. This area was discovered in 1979 at Honeymoon. It has since become one of the most controversial aspects of the mine. The Mound Springs are pools of mineralised water surrounded by sparse hardy trees and shrubs. The Mound Springs is situated 75 km south of Roxby, 20 km west of Andamooka and 500 km north of Adelaide.

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URANIUM AND ABORIGINES

After 200 years, many Aboriginal Australians have lost access to their land and traditions, and live in third world conditions. Despite this, and contrary to myth, Aborigines still maintain a distinct culture and demand recognition of their heritage in the form of land rights, sovereignty, and self-determination. One aspect of land rights and self-determination is the right to control and protect the land (especially sacred sites) which still have special cultural and historical significance for Aborigines. Until Aborigines have land rights and self-determination they have no power over what happens to the land. Permission to mining companies to mine some of the land Aborigines have gained control over, as with uranium in the Northern Territory, is often a matter of survival not choice.

It must be recognised that for many Aboriginal people land rights means access to an economic base. At times this usage of land will come into conflict with non-Aboriginal environmental principles. Nevertheless, consistency in recognising the fundamental issue of rights to land for Aborigines can provide an important basis from which to develop an environmental policy. Aboriginal people who own Kakadu face the tremendous social and cultural stress which mining and government administration have brought to the communities in the vicinity of Gunbalanya. The mining companies have paid annual compensation to traditional owners representing about 4 per cent of mining revenue. The income for Aboriginal people has been used to provide basic facilities. These were either denied them in the past or were poorly administered by non-Aboriginal people.

Aborigines are greatly concerned about possible pollution from mining in Kakadu and threatened to take Ranger Uranium to court in 1986 to prevent the planned release of mildly contaminated excess water from the mine site. The Northern Land Council (NLC) has requested the authorities to broaden the scope of research on food sources of Aboriginal people. For example, water birds frequent the contaminated storage ponds at Ranger and freshwater mussels from creeks in the vicinity of Ranger Uranium Mines have been known, since 1972 to contain excessive levels of radium.

In May 1983, the Office of Supervising Scientist, ANSTO/AAEC and the NLC presented differing viewpoints as to which plants or animals (bushfood) would be scientifically valid to research. The AAEC has generally restricted its projects to researching radium 226 in the mussels without relating it to consumption by Aboriginal people. In 1985-6, the Supervising Scientist contracted the Australian National University (through Prof. Gelson) to undertake a study on The Quantification of the Aboriginal Consumption of Bushfoods in the Alligator Rivers Region, however, the results are unpublished. Numerous OSS technical projects have examined specific aspects of limnological, toxicological and ecological habitats and species of the region, but have been conducted in isolation to Aboriginal diets.

No conclusion one way or the other can therefore be drawn from research conducted to date in respect to radioactive pollution in Aboriginal food sources. The NLC must accept some responsibility for the fact that the research to date is inadequate.

Anti-nuclear relationships with the NLC are markedly reduced by the dominance of pro-nuclear sentiments in the Council. Friends of the Earth is a community based activist organisation which actively encourages a better understanding of the environment. We promote the relocalisation, conservation and rational use of the earth's resources through public education and direct action, by providing positive alternatives and empowering people to influence those making decisions affecting their future. All FOE members receive Chain Reaction, National magazine of Friends of the Earth four times a year and the FOE Fitzroy newsletter six times a year. Membership is $24/18 (concessional). [1] I wish to join Friends of the Earth and enclose $24/18.
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Please return to: Friends of the Earth 222 brunswick St Fitzroy Australia 3065 Ph: (03) 419 8700.

This booklet has been written for the Friends of the Earth Anti-uranium Collective by Dick Borton and published by Chain Reaction, National Magazine of Friends of the Earth, August 1988.

Please send comments and criticisms to Friends of the Earth, 222 Brunswick St, Fitzroy 3065, Ph: (03) 419 8700.

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Driving into the greenhouse

The world is becoming warmer. Heat trapping gases accumulating in the atmosphere threaten climatic change in the very near future.

Human activities are to blame — modern agricultural practices, excessive industrialism and the ever expanding global automobile fleet are prime culprits.

At a recent conference in Toronto, scientists and climatologists from 46 nations displayed remarkable consensus in calling on governments and industry to reduce fossil fuel consumption by 20 per cent. In the absence of such action, the conference concluded, 'the expected rates and magnitude of climatic change will greatly exceed those experienced since civilisation began.'

Has the greenhouse effect finally arrived? Ian Grayson analyses the current situation.

Life exists because protective climatic conditions prevail. Adequately distributed rainfall coupled with an average global temperature of 15 degrees Celsius have provided life with stable conditions for thousands of years. The ozone shield protects us from the harmful effects of ultra violet radiation, and the oceans act as a thermostat for the incoming solar energy absorbing excess heat and cold. Global cloud cover assists the thermostat by shielding out some sunlight and conversely by trapping heat.

The chemical composition of the atmosphere plays a critical role in this system by allowing excess solar heat to be radiated back into space while at the same time trapping sufficient heat for life to flourish.

We live under the protection of this mild greenhouse. Human activities since the start of the industrial revolution are raising the global temperature and we are now creating an intensified greenhouse — one which will not be to our liking.

Heat trapping gases, mainly carbon dioxide and methane, are building up in the atmosphere at an alarming rate. The rate of increase for these gases, together with nitrous oxide, the third greenhouse gas, has skyrocketed since the 1950s when industrial production reached new heights.

The global warming effect caused by the build up of these gases is known as the greenhouse effect. It has been predicted for over fifty years but recent climatic trends indicate that it is no longer a theory, it is here.

Last year was the warmest year on record with the world's average temperature standing at the outer limit of all known fluctuations. The detected warming attributable to the greenhouse gases is already 0.5 degrees Celsius. This is a global average increase, not a regional fluctuation, and the temperature is calculated to rise by 4 degrees Celsius at most. We are therefore well along the way.

Ice Core Evidence

Scientific opinion is now swinging behind the view that these global temperature trends are the first greenhouse 'signals'. This view is backed by computer modelling which has predicted a cooling of the stratosphere. If heat is trapped near the ground, the layer of atmosphere above this, the stratosphere, should become cooler. Ballon measurements have confirmed this prediction.

Computer models of the greenhouse effect were once considered inadequate because of the lack of a reasonably accurate climatic history. Recent developments in deep ice drilling have...

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changed the picture. Deep ice cores give climatologists a reality check on the impact of the past. From within the Antarctic, the deepest hole took the Russians two years to drill and goes 2,200 metres through solid ice giving an unbroken climatic record stretching back 160,000 years.

With this evidence, together with increased research funding in the wake of the ozone hole scare, climatologists have been able to refine their computer modeling, and the results do not look good.

**Rainfall Change**

The most immediate threat from the greenhouse effect is the changes to the global rainfall patterns. The implications for human society are staggering.

Although increased and changed rainfall patterns may not necessarily be bad for the planet (plant growth may well increase) they are potentially disastrous for humanity. Cities and their industries would become worthless as rains desset their hinterlands. Many countries would face bankruptcy as their industrial base becomes useless through lack of water. No country would stand to gain. Mass migrations, increased famine and severe social disruption would result.

Studies indicate that many of the world's major grain growing areas will face serious problems. The mid-west of the United States is predicted to be much drier, for example. Many areas will receive increased rainfall including Saudi Arabia, Northern India and large parts of Western Australia.

Recent papers in science journals suggest that such changes could occur anytime now — perhaps abruptly.

**The Causes**

Carbon dioxide is considered by many to be the major cause of the greenhouse effect.

However increased methane concentrations are perceived as an equally dangerous threat and some studies suggest that it is a bigger menace because it absorbs outgoing radiation twenty times more effectively than carbon dioxide. Carbon dioxide has increased by a third in 200 years while methane concentration has more than doubled and is increasing at over 1 per cent a year, much faster than carbon dioxide.

The third major greenhouse gas is nitrous oxide which contributes only slightly to the global warming compared with carbon dioxide and methane.

The role of chlorofluorocarbons (CFCs) is as yet unclear but recent research suggests that they contribute slightly to the increased warming.

CFCs are a product of the use of chlorinated hydrocarbons in refrigeration and as aerosols for their insulating and cooling property. CFCs are also indispensable in the production of rigid foams for packaging and automotive insulation. They are considered by various acceptors as an equally serious threat. The chemical structure of CFCs makes them unreactive and capable of persisting for many years in the atmosphere.

Excessive methane in the atmosphere has always been disposed of by hydroxyl, with which it reacts. Hydroxyl renders the methane harmless and recycles it back to earth through the ecological cycle.

Recent studies have shown that carbon monoxide from fossil fuel combustion, particularly car engines, is destroying the hydroxyl.

The atmospheric methane build up, whether of natural origin or not, is therefore directly attributable to industrial activities.

In addition, the world's cattle population has doubled in forty years mainly to satisfy the West's appetite for beef. This has increased by twenty times more effectively than carbon dioxide. Carbon dioxide has increased by a third in 200 years while methane concentration has more than doubled and is increasing at over 1 per cent a year, much faster than carbon dioxide.

The atmospheric methane build up, whether of natural origin or not, is therefore directly attributable to industrial activities.

Nitrous oxide, the other greenhouse gas, is mostly the product of combustion, agriculture and animal waste. Given the world and the greenhouse effect, this could be restored. By stopping the production and use of the offending chemicals and developing substitutes the ozone layer could replenish itself. This technical fix was attempted by the Montreal agreement of 1987 which limits future production of CFCs.

**Vulnerability**

The imminence of the global warming does not give us much time to adapt. By the time the case is proven beyond doubt it will be too late. Modern society is particularly vulnerable. Our agricultural productivity has a very narrow genetic base and is fine tuned to produce bumper harvests in optimum climatic conditions.

A more rational agricultural system, using a wider variety of strains with a more diverse genetic base would be more rugged and only slightly less productive and would not be so threatened by the hotter greenhouse. At least it would give us more time to adapt.

By allowing agribusiness interests to fine tune our agricultural systems to a narrow climatic band in the interests of profit maximisation we are leaving ourselves wide open to massive crop failures. A serious disruption of our food supplies is possible.

This is particularly true of the grain growing areas of the mid west of the United States which accounts for a large portion of the world's food surplus, and which is currently experiencing its worst drought in fifty years — a drought which many climatologists see as an early manifestation of the greenhouse effect.

Whether or not we agree with their agricultural methods, the American grain harvest is part of the world's insurance against famine. The prospect of crop failures across the major grain growing areas of the northern hemisphere is one of the most disturbing aspects of the greenhouse effect.

Drought is also predicted for the major growing areas of the USSR and northern Europe.

**Political Options**

It is hardly enviable a political solution to the greenhouse effect coming from within the capitalist industrial system.

The technical fix, so beloved of policymakers, is a short term and limited approach. The major issue is the greenhouse effect unique. The imminence of the greenhouse effect is here. And how would international agreement be achieved? No satisfactory agreements have yet been reached on acid rain, so how could agreement be reached on this more complex issue? Only a change in public awareness and individual lifestyles appears likely to reduce the threat. The adoption of simpler, less energy intensive lifestyles is a necessity if society is to avoid the approaching climate catastrophe.

The intensity of the situation was clearly shown last June when the National Aeronautics and Space Administration (NASA) released their latest research orginating from the US Congress 'It is time to stop waffling and say that the greenhouse effect is here. This was a historic public statement and marks a turning point in the history of the human race, implying as it does that the absolute limits of industrial growth have now been reached. What will be our response?'
Driving into the Greenhouse argues that there is no 'technical fix' to the greenhouse problem. Some however argue that the solution already exists — nuclear power. Stuart White examines the myths surrounding the debate and points to renewable energy sources as the solution.

Recent indications are that after a spell on the backburner due to the low oil prices, energy issues are coming on the agenda, mainly because of concerns about the impact of global climatic change due to greenhouse gas emissions.

Last time the unfettered public was told it was 'oil imports killing us' (nuclear power), despite the mountains of evidence that this was, at best, a false choice.

This time around we have the predictable but equally fallacious slogan 'greenhouse effect or nuclear power: being advanced, and by all accounts, the last dying gasp of the nuclear industry will bring out a few more hoary old chestnuts. Joining the circus, Max Walsh postulates a crude choice between 'nuclear power and cold baths and candles' in a fawning journalistic display: 'nuclear power is the only form of energy capable of making a dent in the world's appetite for increased energy.'

For the moment let's suspend many of the myriad of possible objections to this statement and the mode of thinking behind it and just look at the notion that nuclear power can adequately substitute for fossil fuel use. This notion is complete nonsense and is based on at least five myths.

Myth One: Nuclear power can provide for a majority of our energy needs.

This myth relates to real consumer need; often called end energy needs, most of which can be met by cheaper non-electrical sources. Nuclear power can, in principle, supply thermal needs as required direct hookup to a nuclear plant. The present oversupply of electricity in the industrialised world is due in large to the single minded over-investment in large centralised electricity generation systems.

Even more cogently, nuclear power neglects the real energy needs of the majority of the worlds population who live in developing countries. Their needs are primarily thermal, such as heat for cooking, or low temperature applications. In these countries, technologically inappropriate nuclear power provides a cure which might be considered worse than disease, and the benefits flow to the few wealthy who can afford the electricity. Basically the same capital invested in renewable energy would benefit these people much more.

Myth Two: Nuclear power is cheap.

Half of France's large external debt is attributable to its nuclear programme. How then can we expect Australia's debt ridden utilities to afford a rapid development of nuclear power? Most countries that use nuclear power have a cross subsidy from nuclear weapons programmes, but this would not be the case in Australia.

If nuclear power were to have a significant effect on greenhouse gas emissions, it would have to be expanded at an even greater rate than that estimated by the United Kingdom Flowers Royal Commission as necessary to fill half of the 'energy gap' resulting from fossil fuel depletion.

This growth rate would require the commissioning of three 1000MW reactors per week on average. Such a huge expansion would require the complete uranium reserves and result in an increased in fossil fuel cycle requirements. The Flowers Royal Commission also noted that 'the high demands of industrialised countries for fossil fuels will continue for many years, not least to sustain the economic growth which would be required to support large and costly nuclear programmes.'

For example, the much touted proposal of Senator Button's for a uranium enrichment plant in the Northern Territory would require a significant expansion of the existing fossil fuel electricity sector.

Myth Three: Sale of nuclear power will reduce greenhouse emissions.

According to some scientists, the energy inputs necessitated by a rapidly expanding nuclear fuel cycle would result in an increase in fossil fuel requirements. The conference speakers also noted that 'the high demands of industrialised countries for fossil fuels will continue for many years, not least to sustain the economic growth which would be required to support large and costly nuclear programmes.'

For example, the much touted proposal of Senator Button's for a uranium enrichment plant in the Northern Territory would require a significant expansion of the existing fossil fuel electricity sector.

Myth Four: Our choices of energy future are limited.

In energy terms, nuclear power is unnecessary. The real question is how do we make the necessary transition from a fossil fuel economy to a solar economy. As it happens, a significant portion of our energy needs could be met in the near term by energy efficiency improvements and renewable energy. For example, as the diagram shows forty per cent of Japanese energy and use energy in the form of industrial process heat and another 10 per cent in low grade form. If all of which is accessible to existing or recently developed technology. It will be possible later to supply even larger percentages by super heating with other types of energy. Nuclear power is the only form of energy whose biomass and future high temperature solar collectors.

By way of contrast, nuclear power provides about three per cent of the United States end use demand, which is comparable to that supplied by firewood, and this after forty years of subsidised development.

Mature renewable energy technologies are not limited by the energy required for their construction. For example a solar thermal collector repays the energy invested in its construction in six months to two years. This allows for rapid substitution to occur without a penalty in increased fossil fuel use.

Further Information

FOE Sydney will be publishing the proceedings of the successful symposium 'Energy Strategies for Australia and New Zealand: Kicking the Fossil Fuel Habit' held in Sydney in May. It is intended to have the them ready for the November 'Greenhouse 88' conference.

To pre-order your copy of the proceedings, which will also include a paper on transport issues and general information on the greenhouse effect and a few perspectives on solutions, send $5 to:

Friends of the Earth Sydney
4th Floor, 56 Foster St
Surry Hills 2010
Ph: (02) 211 3953

GREENHOUSE 88

A network of conferences around Australia.


Join with thousands of people across Australia over November 3-10.

• Hear what scientists are saying about global warming
• Find out about projected impacts on a wide range of areas including farming, recreation, coastal management, public works, water resources, natural disasters, flora and fauna, housing and leisure
• Discuss ideas for adapting to a changing climate
• Consider and develop strategies for limitation of the greenhouse effect

Ofers of sponsorship, donations and contributions are Welcome.

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Broken Hill: Ms Sarah Chillingworth, 18 Waterloo Street, Broken Hill, Ph: (08) 361 2266

Brisbane: Ms Gruny Lim, Executive Officer, Queensland Society of Human Rights, 221 Boundary St, Brisbane, Qld 4000, Ph: (07) 322 3866

Cairns: Mr Tony Mitchell, Cairns Environment Council, PO Box 7184 Cairns, QLD 4870, Ph: (07) 51 1280

Canberra: Ms Nadia McLen, Director, Environmental Studies, Australian National University, Box 2604, Canberra, ACT 2601, Ph: (06) 23 1339

Canberra: Ms Nadia McLen, Director, Environmental Studies, University of Canberra, Box 4639, Canberra, ACT 2601, Ph: (06) 23 1339

Darwin: Mr Godfrey Lowe, Executive Director, Northern Territory Council for the Environment, PO Box 1627, Darwin, NT 0801, Ph: (08) 219 6992

Sydney: Ms Gaye Mckindley, New South Wales Council for the Environment, PO Box 995, Sydney, NSW 2000, Ph: (02) 23 8092

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Renewable electricity generation technologies such as wind, energy photovoltaics and solar thermal electricity are estimated by the United States Department of Energy to be capable of producing from $5 to $20 per kilowatt-hour in large scale production.

Myth Five: That a 'technical fix' is called for.

Nothing better exposes this myth than the fact that if everyone on the planet were to use energy, whatever its source, at the rate which we in the industrialised world do, then the ecological limits (not only the greenhouse effect) with which the social wills would actually prevent this, perhaps catastrophically. We firstly fail to note that the notion that material growth is the only indicator of human welfare. Then perhaps we can develop a new approach to our world whereby there is a priority placed on sustainability and co-operation, starting at the individual level and working out to the community.

It would be wise to think that the 'Greenhouse 88' conferences to be held in November will involve discussion of the issues raised here. Up to now, a large part of the greenhouse debate has revolved around the fact acceptance of continued increases in greenhouse gas emissions. Rather than, once again, we should aspire to analysis and action in which the 'greenhouse problem' is seen as but one manifestation of a more general problem, and where we aim to replace the industrial priority of maximising production with one of satisfying needs within the bounds of ecological limits.

Stuart White teaches in the School of Design at the University of Technology, Sydney, and is the Energy Spokesperson for Friends of the Earth Australia.
Women behind bars

This year has seen unprecedented exposure of the prison system in Australia. In Western Australia flames could be seen over the walls of the medieval Fremantle jail; the notorious underground cells at Queensland's Boggo Road were reopened provoking prisoners to demonstrate on the roof; evidence was given at the Royal Commission into Aboriginal Deaths in Custody that dead prisoners are handcuffed; warders in Victoria went on strike when a warder was transferred to non-contact duties after the Director of Prisons witnessed an assault by baton on a naked prisoner; in New South Wales peaceful prison demonstrators were shot with tear gas (a nastier version of tear gas); and women prisoners in Victoria were part of a demonstration that surrounded Fairlea women's prison.

Women prisoners have been invisible and ignored by the media and by prison authorities. Yet the disclosure that the number of women in prison in Victoria has increased 450 per cent in the past ten years compared to 12 per cent for men brought the issue to the fore. This increase for women is twice the Australian average.

The question "why?" is met with deflection and silence from researchers and government bodies. But by simply looking at the women in jail, the scenario emerges. Poverty screams at us.

The law and order lobby would have us believe there is an exploding crime wave. Yet the number of women in prison in Victoria has increased 450 per cent in the past ten years compared to 12 per cent for men brought the issue to the fore. This increase for women is twice the Australian average.

Women prisoners have been invisible and ignored by the media and by prison authorities. Yet the disclosure that the number of women in prison in Victoria has increased 450 per cent in the past ten years compared to 12 per cent for men brought the issue to the fore. This increase for women is twice the Australian average.

Amanda George looks at women prisoners in Victoria and sees a relationship between poverty and prison. She also finds a lack of facilities to keep women out of prison and little institutional support for those that are inside. Child care, lack of social services, drug rehabilitation and transportation are non-existent and even medical facilities are often unavailable.

Politicians have responded to the crisis by building more jails but Amanda points to an approach which addresses social issues such as poverty and attitudes to women.
Women and Imprisonment in Victoria is available from the Fitzroy Legal Service.

181 Brunswick St.
Fitzroy 3065, Victoria.

Women and imprisonment
are Report

1988

Women who can't turn up because they can't leave their kids for some reason are being breached. If you can't find or afford childcare then the kids go and do time with their parents. This is totally unacceptable. Children have no place at all in these centres and the Office of Corrections should have nothing to do with the children of offenders. But in the twenty-two Community Based Correction centres in Victoria, warders are supposed to look after the kids with no facilities. When one warder had the skills, patience and tolerance to look after children whilst simultaneously supervising prisoners.

Indeed some magistrates are not even giving the option of a Community Based Correction sentence because of childcare difficulties. They have said to women the decision to cheat or steal to save their kids but of course this obviously would have difficulty finding childcare, so was jailed instead.

The Office of Corrections says that jails never have and will never deliver rehabilitated prisoners, and that prisons seem to have little deterrent effect for most offenders, yet it keeps building prisons. A construction program of $200m has been undertaken in Victoria. And in the same breath as saying that Community Based Corrections are cheaper and more constructive than jail, they have reduced the Community Based Correction budget.

The women in our jails are not a threat to the community. They are generally working class women denied opportunities and options in a racist and sexist system. The vast majority are addicts and incest survivors. Jail only further brutalises and alienates them and in motion the roller coaster of institutionalization of their children. The $33,000 a year spent on keeping each prisoner in jail should be spent addressing unemployment and poverty. This is crime prevention.

Amanda George is a project officer with the Fitzroy Legal Service.
apply to their nipples during the early stages of breast feeding and is also used on babies for nappy rash. The results from the six samples showed quite significant levels of diazinon, an organophosphate pesticide used for treatment of sheep with blow fly strike. Diazinon does not last in the body to the same extent as deltamethrin, but is around ten times more toxic making it more dangerous for short term exposure.

These findings were brought to the attention of the Victorian Health Department which referred it to the National Health and Medical Research Council (NH & MRC). An expert committee was convened and a report issued which concluded that even at levels of 40 parts per million, the presence of the pesticide diazinon did not represent an immediate hazard to human health. This level of exposure was claimed to include a 25 fold safety factor according to the working party's calculated model.

However, an examination of the report by the scientists involved in the initial Victorian study into lanolin revealed some questionable criteria used by the NH & MRC. For instance, in setting an exposure level for babies, the baby weight used was 10kg. A 10kg baby is 12 months or older and studies reveal that only 10 per cent of babies in Australia are breastfeeding at that age. The criteria used did not apply to the majority likely to be breastfeeding where a figure of 3kg would be more representative.

Another issue was that although the committee agreed that infants were potentially at more risk than adults from exposure to pesticides they did not include an appropriate safety factor. It is generally recognised that young animals, and likewise young humans, are generally more susceptible to the effects of chemicals, particularly long term effects. The NH & MRC committee said this was satisfactory because infants were only exposed for a limited period of time. This argument might apply for determining acceptable daily intake levels but a time consideration is involved. Acceptable daily intake by definition is that amount which if ingested over a lifetime causes no problems.

But the same criteria cannot be used when talking about no effect levels on which the NH & MRC studies were based. No effect levels are normally used in reference to the effect of a substance for a one-off dose rather than a series of exposures, therefore making it inappropriate for babies being exposed to months of daily contaminated milk intake. Next, even assuming that the no-effect level is the most appropriate standard, the working party chose the text-book figure given for rats, a figure five times higher than the figure in the same text for humans.

The working party took the references from a book called, Pesticides in Man, and the figure they chose was 0.1 mg per kg of body weight of rat. Several pages over from that particular reference, there was a no-effect level quoted for man (sic) at 0.02 mg per kg which is five times lower. For some reason the expert committee chose to ignore that particular figure.

The available human figure ought to be used, bearing in mind that the exposure was for babies and this should be accommodated.

No account was taken of variation between species or within species. There is evidence to suggest that even within species there can be a 30 to 35 fold variability in the ability to de-toxify. On top of all this is the variation in the ability of humans to metabolize organophosphates like diazinon. For a child with a slow de-toxification and excretion rate the diazinon may accumulate if the daily milk intake concentrates the pesticide faster than it can be removed from the body.

Another criticism of the NH & MRC report on lanolin was that the working party only took outside evidence from the chemical industry, in fact the manager of Croda Chemicals, the sole manufacturer of lanolin in Australia.

Response of NH & MRC

When contacted by Watching Brief to respond to criticism of the report head of the NHMRC Food and Environment Protection Branch, Dr Gerry Murphy, was prepared to be quoted but he felt that many of the questions were too technical and specific and should be referred to the appropriate experts in the working party. Dr Murphy pointed out that the report could appear superficial to some because at least in the areas of toxicity and absorption very little data was available either in Australia or overseas, but he did claim that organophosphates like diazinon were metabolized fairly quickly in the body compared to other pesticides, a matter of hours rather than days.

In terms of the statement in the report that, 'members agree that infants were at potentially greater risk than adults from exposure to pesticides,' Dr Murphy maintained that this meant children who were more likely to swallow the lanolin rather than the mothers, not that the infants had a greater sensitivity to pesticides than adults. Dr Murphy also felt that the whole issue was less of a problem now because more and more mothers were using lanolin- based products.

Government Response

Despite NH & MRC assurances that the use of lanolin products presents no immediate health risks the Victorian Department of Health continued to advise its Infant Welfare Centres and nursing hospitals that lanolin should not be used by nursing mothers until it could be demonstrated that there are much lower levels of pesticides in the lanolin. But Victoria is the only state that has not finally gone along with the NH & MRC recommendation that there were no effects on the market are safe for nursing mothers to use.

The report of the national working party recommended that the levels of lanolin be assessed over a three year period, after which they would review the situation. In Victoria, however, there have been no samples analysed since November 1987. At that time one sample was presented by officers of the Victorian Department of Health which had 300 parts per million of four different organophosphates. The samples had up to 25 parts per million of diazinon. Samples in other states had 99 parts per million of diazinon.

The Alternatives

Apparently it is very difficult to remove this particular pesticide from lanolin. It appears that this is the main consideration, that it is not practical to remove it without greatly increasing the cost lanolin. The NH & MRC report said that:

'Yielding the working party was advised that experimental methods were available for significant reduction of this material during the manufacture of lanolin and one such method had been applied on a large scale overseas, however introduction of such technology would require further development and time.'

The working party did add that steps should be taken to reduce the source of unnecessary human exposure and added that progress in this area should be reviewed in three years.

Barry Luke, a scientist who worked on the Victorian study was very sympathetic towards not only the NH & MRC but also the concept of maximising agricultural production. Australia like other countries, does not have any real understanding of the effects generally of pesticides on a population at large. Simply because we do not know what is used where, how much it is used, and therefore in situations where people would appear to be suffering from the effects of a substance being used, there is really no evidence one way or another.

Watching Brief produces a weekly radio show for public radio on peace and environmental issues. This report was transcribed by Kelly Connor and edited by Chain Reaction.
Biotechnology and the Third World

Biotechnology has been broadly defined as any technique that uses a living organism (or part of an organism) to make or modify products, to improve plants or animals, or to develop micro-organisms for specific uses.

By giving this definition, proponents would like to assure the general public that there is nothing essentially new or different about the novel forms of biotechnology that have emerged during the last decade. For these proponents, the new biotechnologies, including cell fusion and genetic engineering, are simply a continuation of a long historical process of continued manipulation of the living world.

In the early 1970s, Stanley Cohen of Stanford University and Robert Boyer of the University of California discovered a new technique called recombinant DNA (rDNA). Generally referred to as genetic engineering, rDNA enables the isolation of desired genetic characteristics from one cell to be incorporated into another. The 'Eighth Day' of creation has begun. We can now play God, rearranging and recombining gene fragments of unrelated species at will.

Biotechnology allows for the sifting through of the plant kingdom, looking for prophetic plantains that sport new powers, for trees and plants from all of the plant kingdom. We have the power to control new and hitherto unimagined life through recombinant DNA. The 'Eighth Day' of creation has begun. We can now play God, rearranging and recombining gene fragments of unrelated species at will.

Though the first signs on the horizon are ominous, chemical and pharmaceutical companies are stepping up their purchases of seed companies. Shell has control of over thirty seed firms in the United Kingdom, Spain, the Netherlands, Japan, West Germany and the United States. Ciba-Geigy of Switzerland has control of over thirty-one seed companies in the United States and Canada while Sandzot, a Swiss chemical company, has control of over thirty-six companies.

This consolidation of seed companies with chemical companies breeds a conflict of interest which has the potential of working against farmers. It is clear that the new biotechnologies are not aimed at making farmers in rural areas develop self-supporting and sustainable agricultural systems. If the external control of the agricultural production processes dominated the Green Revolution in the past, the new biorevolution in agriculture will similarly be characterised by new and stronger forms of dominance and manipulation.

A global community is being defined by a new kind of genetic engineering and industrialised nations together to push the new ingredients of biotechnology into the agricultural systems of the less developed lands. There are signs that some of these countries' governments want to turn their back on the new, high cost, modern agriculture. In the Philippines, a seed collecting and banking programme has been initiated to find traditional varieties of rice, corn and vegetables that have become scarce because of the Green Revolution. In Tanzania, a new national agricultural policy emphasises crop rotation, composting and village-based agriculture. However, the highest priorities of the Green Revolution.

The social problems generated by the Green Revolution continue today. The advent of biotechnology will worsen these problems and create new ones. The creators of the new biotechnologies have not learned from the past. Like their predecessors, they do not design their genetically engineered crops and livestock with social justice and environmental criteria in mind. The first signs on the horizon are ominous. Chemical and pharmaceutical companies are stepping up their purchases of seed companies. Shell has control of over thirty seed firms in the United Kingdom, Spain, the Netherlands, Japan, West Germany and the United States. Ciba-Geigy of Switzerland has control of over thirty-one seed companies in the United States and Canada while Sandzot, a Swiss chemical company, has control of over thirty-six companies.

From the lab to the land — Palm trees for Columbus, Photo: Unilever

Palm oil is an example of how biotechnology can be applied to agricultural problems. In the past, palm oil has been extracted from the fruit of the oil palm tree. However, with the advent of biotechnology, it is now possible to extract palm oil directly from the trunk of the tree, thereby eliminating the need for deforestation. This has been achieved through the use of genetically modified organisms, which have been engineered to produce high levels of palm oil. The use of this technology has led to a significant increase in the production of palm oil worldwide, and has helped to reduce the dependence on deforestation for palm oil production.

Science merely gives us the knowledge to measure possibilities. The aims that are raised through the study of science are concluded by individuals with motives. If these motives are controlled by the transnational corporations, then the ramifications of their achievements will be beneficial in terms of their primary motive — profit. Any social improvement in these terms will be at best coincidental and at worst non-existent.

The environmental, economic, social and cultural impacts of each new genetically engineered product or programme must be taken and scrutinized on a case by case basis. It would be irresponsible for any government agency or business corporation to release any genetically engineered product into the environment with the ensuing uncertainties for future generations.

Scientific studies must be able to predict, within strict safety margins, the likely outcome of such biotechnological manipulation. The difference between a brave move or an act of stupidity, must be made.

Biotechnology can change our lives, the lives of our children and the natural environment in less than two decades. Great care must be taken because we may find ourselves in a position to ask the right questions, but not necessarily to give the right answers.
Very little has been done about women and AIDS. Last year the South Australian AIDS Council published a pamphlet which received widespread distribution: AIDS Puzzle: Where Do Women Fit? It has been sporadic attempts by other organisations, but there has been no real co-ordination. The Victorian IV Drug and AIDS Group (VIVAD) received a grant to employ a Women and AIDS worker, the first in Australia.

It is hard to know what individual organisations are doing or if they are doing anything. If Victoria is anything to go by, women are receiving little education on AIDS and very little funding being directed towards women, although there are moves afoot to correct this. This is not necessarily the fault of AIDS organisations. The majority of them developed from the gay community and serviced gay and bisexual men in direct response to their very real needs. The continual representation of AIDS as a gay male disease by the media and the Right has taken up much of the focus in AIDS organisations which continually seek to tell the truth about AIDS and to manoeuvre themselves out of the backlash directed against the gay community. The recent outburst by Liberal Shadow Health Minister, Wilson Dickson, at the National AIDS Conference in Hobart, shows this opinion has not yet been laid to rest.

However, some organisations are finally addressing the issue of women and AIDS, as many feminist health workers and women working in the AIDS field.

AIDS affects women in many different ways. They may have come into contact with the AIDS virus (HIV) and be antibody positive; they may have developed AIDS Related Complex (ARC or Category B AIDS); or they may have AIDS (Category C or 'full blown' AIDS).

No-one knows exactly how many women in Australia have been infected with the virus. The women with ARC are a small but significant percentage of all cases; the women who have developed AIDS are probably the most efficient way of passing HIV to their child during childbirth.

Women have to carefully weigh up the consequences of knowing your antibody status. You have to consider the stress related to knowing you are HIV positive and how this will affect your life. You have to think about the consequences for your job prospects, for your insurance, housing and relationships.

Women have to carefully consider the possibility that they may pass the virus to their child during childbirth.

My personal advice is not to have the test. Should you decide to do so, work in consultation with an experienced counsellor who will help you to consider all of these issues and will stay with you should your test be positive.

What can women do to avoid contracting HIV?

Women are at risk for HIV if they share IV needles or have unsafe sex with a person with HIV. Women who have shared works, had sex since 1977 with IV drug users, gay or bisexual men or people with haemophilia may have been exposed. A woman may also be at risk if her sexual partner has had unsafe sex with someone in these categories.

A woman using donor insemination to become pregnant is only at risk if the donor has HIV. Women who have received blood transfusions or blood products before 1985 may have come into contact with the virus. If you are considering artificial insemination for pregnancy it is important to make certain that your donor or partner is not antibody positive. This is possibly the only time when an HIV test is recommended, for both the woman and her potential donor or partner.

A woman who only has sex with other women faces the lowest risk for infection. Although there are now reported cases of women to woman transmission. There are many cases of women, including lesbians, passing HIV through sharing IV needles.

HIV prevention for women

Unless you know for sure that your sexual partner does not carry the virus, you must take precautions:

- Don't allow their blood (including menstrual blood), semen, urine, vaginal secretions or fluids to enter your anus or vagina. Oral sex, where semen or vaginal secretions enter your mouth are less risky but still carry some risk. Steer clear of blood altogether.

Testing for HIV

If you feel you may have HIV, you can
Use condoms for vaginal, anal or oral sex. HIV cannot travel through a condom if it is used properly and does not break. Use only latex condoms that are made from membranes allowing the virus to pass through. When you haven't used condoms before, practice.

Never share sex toys such as vibrators unless you wash them thoroughly before passing them to your partner, or use a condom.

Lesbians who consider themselves to be gay and bisexual men. Programs and campaigns to halt the prevalence of AIDS in the IV drug community are new, at least in Australia. In other parts of the world, the Netherlands for example, high level educational outreach campaigns and needle exchange programs for IV drug users has limited AIDS. In New York, however, where no such programs exist, the incidence of HIV infection amongst IV drug users is around 86 per cent. In Australia it is now estimated at around 5 per cent and organisations such as VIVADS are formulating strategies to ensure that the proportion decreases. IV drug use is another of those taboo subjects. No-one likes to admit that they shoot up or know people who do. If you use IV drugs, get clean needles through a needle exchange program. If you know someone who shoots up, encourage them to take part in needle exchange or get their needles for them. AIDS organisations in your state should be able to help you with information on where to go.

If you are HIV positive AIDS organisations will be able to inform you of the services available and operate under strict confidentiality. Most States have support groups. There are mutual support and groups for partners of people with HIV. Some States have alcoholic and drug support programs, accommodation programs, and support services where care teams will come into your home and help you with household needs.

One important thing to remember is that you are not alone and operate under strict confidentiality. Most States have support groups for partners of people with HIV. Some States have alcoholic and drug support programs, accommodation programs, and support services where care teams will come into your home and help you with household needs.

Effects of the AIDS crisis on women

Many women have been affected by loosing friends, lovers and family to AIDS related death or illness. Lesbians have suffered increased anti-gay hostility from thousands of people with HIV in a society which refuses to recognise AIDS as a health issue, rather than a gay issue. The AIDS crisis also emphasises the need to address problems of substance abuse amongst women, especially IV drug use.

There is also the danger that health care professionals will see women using sex toys as a symptom of their sexual proclivities, and not of the serious problems of substance use amongst women. It is also the case that women are not alone in injecting drug use. Women are risk-taking users, and, like men inject as a way of maintaining their use. They are more likely to score and inject, but be less likely to share needles when injecting.

The epidemic is not of concern just to infected women, but to all women. Many women have been affected by substance abuse amongst friends, family and lovers. Women have been affected by the crisis on women and have been affected by the crisis on women and have been affected by the crisis on women. Women have been affected by the crisis on women and have been affected by the crisis on women.

I IV drug use

A lot of educational material and media 'information' about AIDS has focused on gay and bisexual men. Programs and campaigns to halt the prevalence of AIDS in the IV drug community are new, at least in Australia. In other parts of the world, the Netherlands for example, high level educational outreach campaigns and needle exchange programs are common. IV drug use has limited AIDS. In New York, however, where no such programs exist, the incidence of HIV infection amongst IV drug users is around 86 per cent. In Australia it is now estimated at around 5 per cent and organisations such as VIVADS are formulating strategies to ensure that the proportion decreases.

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New Hope or False Promise? Biotechnology and Third World Agriculture

By Henk Hobbelink

The term 'biotechnology' has become one of the 'Catch Cries' or 'Buzz Words' of the eighties. It is meant to show how few people are informed about the new developments in this old technology. In Henk Hobbelink's book, New Hope or False Promise? Biotechnology and Third World Agriculture I was relieved to see that he kept to his subject while acknowledging developments in other areas of biotechnology. He highlights three areas of importance which have changed and will continue to change with advances in biotechnology.

The first area is plant breeding which aims at making better, more productive plants. This sounds good but Hobbelink points out that this will ultimately depress prices. Larger plantations will then have to shift to less labour intensive land use management with the loss of jobs. Ineffective farmers will be forced off the land. Unfortunately, these ineffective farmers will be the borderline subsistence farmers who rely on a cash crop to pay their debts.

Application of enzymes which use traditional crops as a substrate is another area. Here crops are grown as a source of either oils, starch or carbohydrate and these are converted into other high value products. For example, sweeteners can now be derived from about twenty different sources, again depressing the price of the traditional crop which is in this case sugar. This has forced upheavals in both the Third World and developed countries. One has only to look at the cane growers of Queensland to see this.

The second area of concern is the use of herbicides. He examines the dubious practice of large companies selling agro-chemicals in conjunction with resistant seeds. This practice leaves little incentive for the development of pest resistant crops and the design of effective and inexpensive control strategies. Both of these could be achieved by the use of biotechnology and would benefit the poor of the world.

Another point that Henk Hobbelink makes is that of the control of genetic resources in the world. He is quick to point out that large companies are collecting resources in the forms of wild seeds for storage and research. However these are not freely available. What is needed is a reposition of this resource that is available to everyone.

Underdeveloped countries will not be the only ones affected. He estimates that by the turn of the century half the farmers in America and Europe will be forced off the land due to increased production. Excess will be dumped in developing countries causing social and economic problems on both the agriculture and the economies of these countries.

Hobbelink is not advocating a direct stoppage in biotechnological research as the need still exists for biotechnology to solve the problems of developing countries. He points out that biotechnology need not be high technology, such as genetic engineering and its applications. The biological approach to solving local agricultural problems should be an adjunct to good land management practices. This is a more sensible approach to solving problems both in the Third World and other so-called high tech agricultural societies.

To provide answers for any questions, one must first perceive the problem. Here Henk Hobbelink's book provides some insight into the technology and politics of biotechnology. The book is short, easy to read and referenced for those requiring further information. I recommend it to those who wish for a basic introduction into agricultural biotechnology and the policies associated with it.

Greg Kemp is a research assistant with the CSIRO working with Biotechnology.

A Handbook of Nuclear Weapons Accidents

By Shaun Gregory and Allister Edwards, School of Peace Studies, University of Bradford, 1988. $7.50 plus postage.

Reviewed by Peter Springell

As many as 75 per cent of nuclear accidents are not made public. The US Navy alone admits to 563 nuclear weapons 'accidents' between 1965 and 1983. There is also a total lack of information on French or Chinese accidents, and yet the public are encouraged to believe their weapons are any safer. While America has more nuclear weapons than anybody else, because of the Freedom of Information legislation, the US could, perhaps unjustly, be seen as having far by the worst accident record.

The history of weapons safety from the 1940s to the present day is traced. Initially, the somewhat deadly and slow -
REVIEWS

safety precautions caused concern to the military in case weapons could not be dismantled in the event of a crisis situation. Indeed, as Cold War tensions mounted, precautions were relaxed, concerns to quite legitimate levels.

By the 1960s, the situation had changed. Action Links (PAL's) greatly improved the safety of land based nuclear weapons, but the procedures required to dismantle them were also more accident-prone. But negative ingenuity can also result in circumstances of flight and/or sabotage. PAL's contribute greatly to the security of nuclear weapons, while speeding up the arming and disarming process. PAL's can be used to disarm nuclear weapons simply by handling them.

Accidents involving nuclear weapons fall into two categories: PAL-related or not. PAL's were developed as simple methods as a 'string' and a 'spoon'. PAL's are devices that induct irrationality and drug or alcohol-related problems also contributed to over 50,000 decertifications, or 4-5 per cent of those employed, during 1975-84 in the US alone. The Russians are no better off, with possibly around one third of their service personnel considered alcohol dependent.

Consequently, safety of nuclear weapons is regarded in terms of technical safeguards. But humans design and control such devices, so that technical safeguards are possible, which can bypass authenticating code systems and all negative controls, thus allowing unintentional or unauthorised launch. While the possibility of computer failure is well established, a lesser-known potential cause of accidents is the Hazard Warning System (HWS), a computerised system of Ordinance, or ORCO, Accident detection due to HWS can be induced by YSTRAS, or by some form of communication. This can cause an incorrect decision into weapons simply by handling them.

Heart Politics by Fran Peavy with Myra Levy and Charles Varon. New Society Publishers, Philadelphia

She writes from her experiences with the anti-nuclear campaign. She uses 'nuclear comedy' to overcome the fear which is brought on by the massive scale of the odds against which she struggles. Through laughter she can bring in the absurdity of the human tragedy into the story. This book is to be recommended as a novel of clarity.


Reviewed by Margaret Burrage-Coburn

Punishment is a gripping tale of cause and effect, the story of a lonely, battered and bruised mother of three generations of PAL systems by their design.

The stage is set a generation before. We catch a glimpse of her mother's infamy, the ninth month old Marie with a frozen diaper, and the children's maid's reaction — Oh well, no mess at least — the paralysis of her legs which followed, and her delayed walking. Friday's child — unwanted by her mother and a disappointment to her father, who wanted a son.

Her self-esteem began low and sank lower. Life as a small child with her parents unreal expectations of her school behaviour and work at home is a liary of horror. Savage beatings, a catalogue disregard of her person, a lack of existance, and the preferential treatment received by her sisters, this was her life.

Canes Toads — An unnatural history by Mark Lewis. A Film Australia Production Released by Rosine Film

Reviewed by Roger Kemp

Something is eating Queensland and it's not the National Party but rather Bufo marinus, the cane toad. Originally introduced to control the cane beetle which was devastating Queensland's sugar crops, the toad is now devouring the native wildlife...
substitute for anger, sorrow, grief, agony, fear, pathos or understanding. No understanding and we do not change. Shock is too familiar and only produces inertia.

I may be rabid but I don't need this book. I don't think you do either. Those who know something of the lives of women working in prostitution don't need it, there are plenty of better books on the subject. These whose opinions have been formed by popular media rather than experience will indeed be shocked by this book, and reinforced in their determination to 'clean up' prostitution — the oldest profession known to Patriarchal Capitalism — so 'decent' people can mow their lawns in peace.

Lyn: A story of prostitution contributes nothing to our understanding of the lives of women working in prostitution. Therefore it is not an empowering book. Even though I'd not wish anyone to read it, I am going to sell my copy to a second hand bookshop.

*Other books to read on the subject suggested to me by a friend from the Prostitutes Collective of Victoria; Prostitutes: Our Lives, Claude Jaget. Sex Work ed, Priscilla Alexander. So Much Hard Work Kay Daniels.


What can I say? The Blue Donkey is great. It has everything I could want in a book except that I can't read it in one session in the bath.

Her tales are politically incisive and wickedly wryly funny — but they contain too much for me not to pause after every tale to laugh, to think, then I must start reading again.

Suniti Namjoshi also wrote Feminist Fables which I read with relish but those fables were harder and sharper and contained none of the quasi-whimsey of the Blue Donkey. The message is no less sharp but these reach into the unconscious like a stone dropped into water reverberating like a Zen koan, but much funnier. If you can't buy a copy, steal someone else's.

Jo is an Anarchist/Feminist/Ratbag who does a volunteer roster in the Friends of the Earth (Fitzroy) bookshop.

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The Postcard Project
Postcards are available as a set of ten full colour big cards for $10. They are available from:
Co-Media,
PO Box 108
Torrensville
SA 5031.

Artwork by
Kate Breakey and
Deborah Kelly