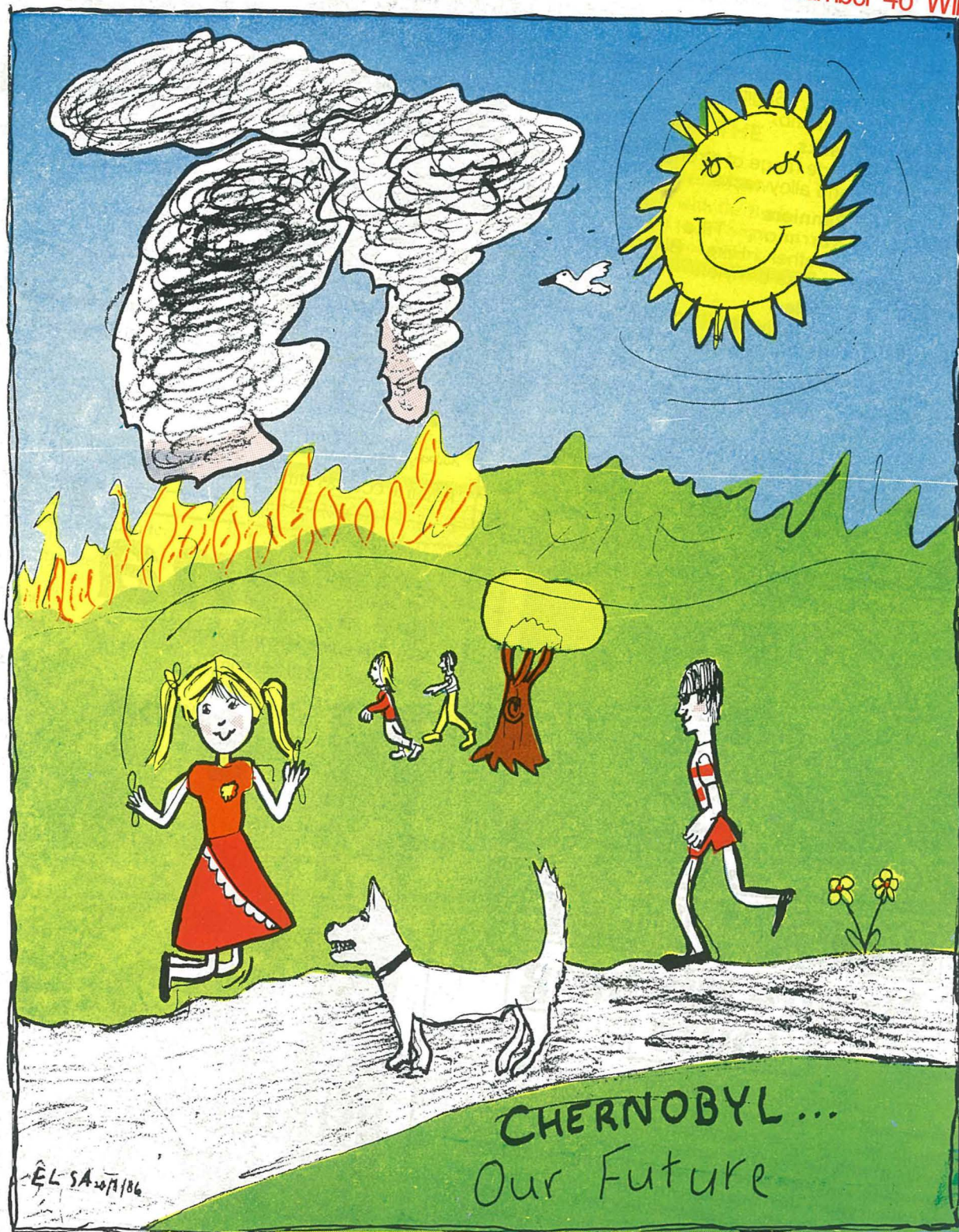


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Friends of the Earth Australia

Number 46 Winter 1986 \$2.75



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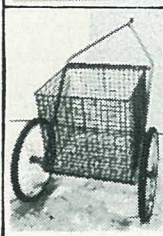
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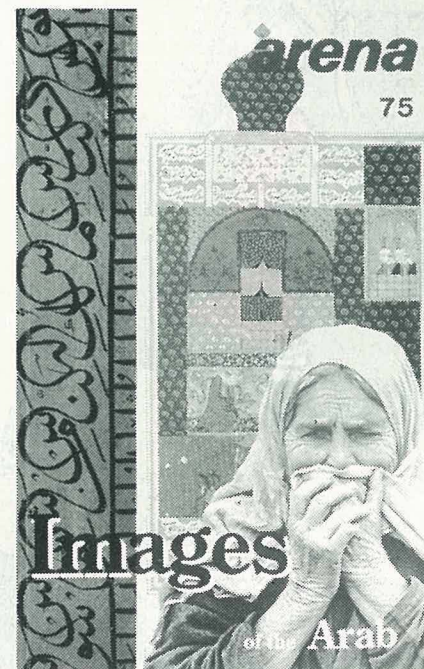
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Ian Foletta, Gwen Gibbon,
Eileen Goodfield, Clare
Henderson, Larry O'Laughlin,
Flick Wright.

Production

Fran Callahan, Arne Hanna,
David Spiers.

Accountant

Eileen Goodfield

Advertising

Ian Foletta

Earth News

Gwen Gibbon
Eileen Goodfield
Jodie Phelan

Production Coordinators

Ian Foletta
Eileen Goodfield

Reviews

Ian Foletta

Subscriptions

Eileen Goodfield

Melbourne collective

366 Smith St Collingwood
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Contributions to Chain Reaction are invited. Please try to send items typed on one side of the page, double spaced and with wide margins. Keep a copy as we do not have sufficient resources to return manuscripts. These few guidelines help in bringing out the magazine better and faster.



The magnificent and unique beauty of Northern Queensland can only be fully appreciated by walking tours through this area. Peter and Jacqui Timmermans offer such tours through the Rossville and surrounding district. This area south of Cooktown and north of Bloomfield includes majestic features such as mountain ranges, rainforests and waterfalls. A variety of tours are available from day tours to a six day tour, with all meals included. For further inquiries or reservations contact: Rossville Nature Walking Tours, PO Box 82, Cooktown, Queensland 4871. Tel: (070) 695 206.

LETTERS

Aboriginal land 'rights'

I wish to commend you for your article 'The not so preferred model' (*Chain Reaction* 45). There is one point which I think should be stressed, namely that the white man was determined to usurp Aboriginal land and nothing was going to stop him. The justification based on land usage was created with the sole purpose of hiding the immorality of his action. This is clearly seen from the fact that seeing the evidence that some tribes lived in a style similar to his own, ie villages etc, did not stop him from usurping their land as well.

Stan Pelczynski
Malvern East Vic.

Chain Reaction links the movements

Congrats on 'getting your shed together'. Chain Reaction remains one of the most important links between elements of the peace/anti-nuclear and environment movements. With the Labor government ignoring most of its policy commitments in these areas, it is imperative that we are informed of the latest developments and all their ramifications. We must have an alternative media which allows us to communicate effectively with each other and informs us about actions both interstate and overseas. The tragedy of Chernobyl has underlined how interrelated all our concerns really are.

From inside the anti-nuclear movement it is wonderful to see the campaign against woodchipping attracting increasing support; and the growing awareness of the risks associated with electro-magnetic radiation, to see the variety of groups taking action against South Africa and the revival and acceptance of land rights (and the *pay the rent* concept). I wish you continued success as a national forum for independent and critical thinking on the crucial issues of our time.

Larry Marshall
Carlton North, Vic.

New political party

The proposed formation of a new political party by Queensland Aborigines highlights the widespread disillusionment with the existing parliamentary parties. This movement will only be of significance when it reflects a widespread disillusionment with the existing parliamentary system.

While elected members of a party are bound by the decisions of that party there can be no democracy. While the party system exists and the fear of party discipline prevents honest men from expressing their opinion and from voting according to their principles the whole electoral system is a farce. While external forces over which the people have no control can dominate a Prime Minister, while a Prime Minister can dominate a Cabinet, while a Cabinet can dominate a Caucus and while a Caucus can dominate a Parliament we are robbed of our political birthright, we are defrauded of our right to political representation and we are defenceless in the face of media — orchestrated attacks on our living conditions and on our fundamental rights.

In Europe this abandonment of the needs of the ordinary people by the main political parties has seen the emergence in desperation of groups like the Baeder-

Meinhoff group and the Red Brigades, and, at the same time, the establishment of socialist governments which practice no socialism and contain no socialists.

Any new political party must seriously consider whether there is any communal benefit, as distinct from individual self-satisfaction, in participating in our present public charade.

C.M. Friel
Alawa 5782

Marxism, Anarchy & the Church

I admire all the dedication you and your contributors have made — I go along with your attitudes but find them, as I do Marxism, valid but inadequate.

So many young people feel this I find and try out various Eastern mystical attitudes to gain meaning to life. And some adopt the old narrow Evangelical ones which baffle their minds — even if they give them some personal satisfaction — even joy!

I have found that the Catholic Worker Movement has combined the economic and social attitudes of Marxism but added a spiritual dimension which has given them the impetus to take on the most dangerous activities — as do the peoples of Central America and elsewhere (some of them) and often give their lives by aligning themselves with the terribly threatened and tortured. Others like the Berrigans cheerfully accept long prison sentences for engaging in symbolic acts of protests against the Vietnam war in the first place and now nuclear weapon build-ups. I am sorry Dan Berrigan gets no mention in your paper — his seminars were wonderful even to an atheist friend.

And the growing church involvement in Peace demonstrations is overlooked, only the Anarchists' activities highlighted. I have had Anarchist tendencies myself but now feel that they need to be linked to the spiritual beliefs and attitudes which give a sort of gaiety to their

activities. 'Mutual Aid' impressed me greatly. The few responsible totally exhausted themselves and have retired to their old jobs temporarily. Well, that's it, I think.

Margaret Howells
Olinda, Vic.

Another response

In reply to *Anarchy on Palm Sunday* (CR 45), this is how the Anarchists appeared to me and a friend at the rally. It was a brilliant day. The Palm Sunday crowd surged across the Yarra, rank upon rank of banners passing. Some were sewn in patchwork and must have taken weeks of work. There were socialist groups, priests, children, punks, Turks, unionists and peace groups from dozens of towns, suburbs and schools.

Marchers were warned by the rally marshals to watch out for a handful of anti-peace demonstrators along the rails overlooking Princes Bridge. They had US and Australian flags and signs saying "PND = KGB", and were trying to incite violence to discredit the march. A few "anarchists" in mohawks and with black flags started jostling and fighting with them. By the time we got to the bridge the arrested people had been taken away. Only the shouting continued. We asked the anti-peace demonstrators what the initials of their group, CARP, stood for and they didn't have any idea. They were a pathetic group, roped in for the day, but they did a good job of disruption thanks to the Anarchists.

Instead of focussing on the 100 000 peaceful marchers

continued page 9

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

Peace Fleet

Pacific Peace Fleet (Australia) was formed early in 1986 to organise boats from Australia to sail to Moruroa in 1987. The Australian boats will join others from the Pacific regions, especially *Aotearoa* (New Zealand), which are sailing to the French atomic test site to protest the continuing nuclear weapons testing program.

The group so far has been collecting information on the tests and working out the precise physical requirements to get the boats safely to Moruroa and back. In order to involve as many people as possible the group is circulating a petition against the nuclear tests which will be simultaneously presented to the Commander at Moruroa Atoll, the French Embassy and the Australian Government.

The flotilla will have to be well equipped and prepared for the extended time at sea. Good communication systems are essential; obviously for safety reasons and for greater impact the more boats go the better. The group is looking for boats and donations of equipment, provisions, money, skills and time-people-power to make the Pacific Peace Fleet a success. Monthly meetings are held.

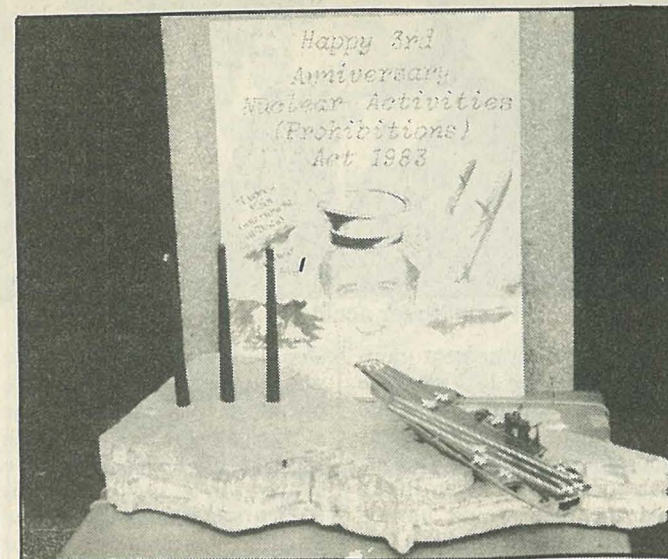
Contact: Diane Ingram, Pacific Peace Fleet, 29B Avenue Rd., Glebe NSW 2037. Tel: (02) 21 0500.

Bhopal reject

Union Carbide has agreed to pay US\$350 million in compensation to victims of the toxic gas leak in Bhopal, India in December 1974. (See Bert King, Bhopal, *Chain Reaction* 41). The settlement was reached between the US based transnational and private lawyers for victims. However, the Indian government will have nothing to do with the settlement which it dismisses as 'inadequate'. Their compensation claim is US\$1 billion.

Source: *Consumer Views*.

EARTH NEWS



CANAPS Cake for Cain

On 23 June 1986, representatives of FOE Collingwood, Movement Against Uranium Mining, People for Nuclear Disarmament and the Australia Nuclear Free Zone secretariat on behalf of the Campaign Against Nuclear Armed Power Ships (CANAPS) presented John Cain, Premier of Victoria, a cake and card to mark the third

anniversary of the introduction of Victoria's nuclear-free legislation. The cake, in the shape of Victoria with a warship on the side, served as a reminder that although by law nuclear power and nuclear weapons are not permitted in this state, we still host nuclear warships in Port Philip Bay. A contradiction in terms!?

Leak sparks rally

A report that a radioactive leak occurred in early May 1986 from the new, experimental high-temperature reactor at Hamm, on the Ruhr, West Germany resulted in anti-nuclear demonstrations all over West Germany — about 40 000 rallied against nuclear power.

The 300-megawatt plant was opened in November 1985 and was billed as an inherently safe design, partly because the fuel is continuously fed in and removed, so that no dangerous stops and starts are necessary during fuel changes. The fuel comprises uranium and thorium pellets embedded in 675 000 graphite spheres the size of tennis balls.

The owner, HKG, a subsidiary of the engineering giant Brown-Boveri said that one fuel sphere became stuck in the feed-pipe and was freed with a blast of helium, the reactor's primary coolant. A carbon layer on top of the fuel pellets is meant to keep radionuclides from escaping into the helium, but on this occasion some did escape — radioactivity about 60 per cent of what the plant is allowed to put out per day. Increased radiation was initially blamed on Chernobyl.

West Germany's Chancellor Kohl has called for a conference on nuclear safety to be held in West Germany later this year. He has received support from Britain and from Mikhail Gorbachov of the Soviet Union.

Source: *New Scientist*

Bataan victory

Honoring a pledge made during the recent presidential campaign, the new Philippine government of President Corazon Aquino has decided not to open the nearly completed Bataan Nuclear Power Plant. (See *Earth News*, *Chain Reaction*, 42-43). The decision was made in response to widespread protests reinforced by the Chernobyl accident. At present, relations between the Philippine National Power Company and Westinghouse Electric Corporation (the builders) are tense. The National Power Company filed a suit in Manila to recover a US\$42.8 million letter of credit cashed by Westinghouse, claiming it was to be paid on completion of the project. Westinghouse responded with a counter-suit arguing that it is owed another US\$24 million.

Source: *Intercontinental Press* 16 June 1986.

Activists Poster

In the forthcoming edition of *Chain Reaction* we will be publishing our **Activists Contact Listing**. If you wish to have your group in the listing you can still do so by writing to *Chain Reaction* at PO Box 530E Melbourne with the details of your group, your address and phone number. Copies of the listing will be available through *Chain Reaction* or through environment centres and selected book shops throughout Australia. If you want to order advance copies, please do so by writing to the above address.

EARTH NEWS

The risk is ours

Led in by USS *Enterprise*, two missile cruisers, *Truxtun* and *Arkansas*, berthed at HMAS Stirling and supply ships *White Plains* and *Hassayampa* berthed at Fremantle on 19 July 1986.

The US Navy says cities and nations which host its ships should be responsible for plans to counter nuclear accidents they may cause. Rear Admiral Paul Millier, told a news conference on board USS *Enterprise* that the US Navy stood by its perfect safety record for nuclear-powered ships. He said it was up to cities and states to have plans in case of accidents.



Planning for accidents is up to us

Nuclear disarmament campaigner Senator Jo Vallentine has been urging the State Government to release its emergency plan but a spokesman for Premier Brian Burke said the plan would not be released until after Cabinet had approved its revision. Senator Elstob, one of the representatives from the Foreign Affairs Defence Committee aboard the

ship during air trials stated he was satisfied that a very safe operation was run, and if the average Australian could see this all his fears would be allayed. As he spoke, the anti-nuclear campaigners in the Pacific Peacemaker sailed around the carrier with a banner which read 'Welcome fellow targets'.

Source: Western Mail

Philippine conference

A major national conference on the Philippines will be held in Melbourne from 3 - 5 October 1986 at the Education Resource Building Melbourne CAE, Carlton Campus. Called 'The Philippines and Australia: a Struggle for Justice' the intention is to draw together people from a large cross-section of the community to look at Australia's relationship with the Philippines and how Australians can help in furthering the process of achieving social justice in the post-Marcos period. Speakers include Jose Maria Sison, ex-detainee, noted writer and political analyst and Nalia Sancho, a leading figure in GABRIELLA (the prominent women's organisation). Registration fee \$20.

Contact: Kate Brennan, Australian Freedom From Hunger Campaign PO Box 266, Fitzroy, Vic. 3065. Tel: (03) 417 5170

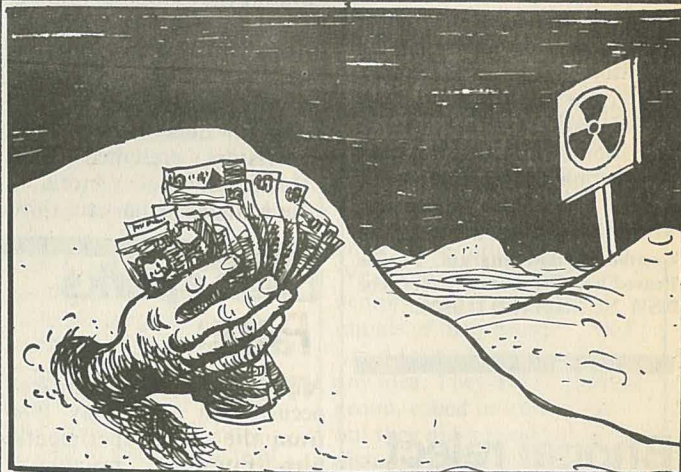
Uranium doublespeak

An article on the Manyingee uranium mine near Onslow WA operated by Total Mining (Aust) — 100 per cent French owned, in the autumn (1986) edition of Environment WA has drawn strong criticism from the minister for minerals and energy David Parker for alleged inaccuracies although there is no information made available to the public to allow independent assessment of the situation. The government is unwilling to provide any information on environment threats posed by introducing strong alkali solvents into uranium ore bodies in the Manyingee channel. It is inexcusable doublespeak to ban uranium exports to the French while they continue to test their nuclear weapons in the Pacific and allow them to explore, test and produce yellowcake particularly by this environmentally unproved technique of solution mining. Solution mining for uranium in South Australia and the United States has activated high levels of radionuclides and mobilised heavy metal contami-

nants into groundwater surrounding injection zones. The company has applied to initiate Stage 2 which involves drilling another five bores (four in a square pattern, for injection, one in the centre for extraction) to further prove the ore body and techniques appropriate for extraction of yellowcake.

There are two faces on the issue. The public face is represented in the headline West Australian 22 April 1986 'Uranium policy stops mining'. The article states that the Manyingee and far advanced Yeeliree deposits and plant are deferred — which leads the reader to concur they have only been put off till a later date — and the remainder of the article explains how Labor policy has supposedly stopped uranium mining at the other mines in Australia.

The other face however is a statement by David Parker who feels that uranium exploration in WA should be encouraged to provide full information on the state's resources including those



that lie under national parks. Parker is on record as saying he wants to be recognised as being responsible for gaining more processing of minerals to WA. This is an admirable policy to increase employment in WA, but more dangerous than useful if that means separating thorium and uranium from monazite sands in the West or producing uranium for reactors and ultimately bombs.

Fourteen other Uranium deposits are documented in WA, including the CRA Kintyre

deposit. This is a Roxby Downs type 'multi-mineral' exploration, uranium being found in 'incidental' to other minerals and therefore considered 'less sensitive' than straight uranium mining. CRA hold 15 000 square kilometres of exploration leases.

WA is wide open for the development of uranium mines and a network is being formed to oppose this issue.

Contact: Rick Humphries, Australian Conservation Foundation Perth. Tel: (09) 322 7232

Deep Ecology

The future is in our hands, as the Norwegians put it. We together as individuals have the power to both change ourselves and our culture from within.

As the recent Deep Ecology Conference a proposal concerning the formation of small Deep Ecology groups was put forward. Such groups could have an Activist function, the political goals of each group being dictated by its location and the interests and resources of its members. They could also serve support and consciousness-raising purposes. Longterm potential would be tremendous with an uniquely encompassing ideology of deep ecology. The change necessary in our consciousness can be amplified immeasurably if we each join with a few like-minded individuals which is the key to the empowerment which alone can redirect our society. Our group is ready to assist in the coordination of small deep ecology groups. If you send us your name and address, we will send you a list of interested people in your area. Please indicate whether you would be prepared to act as coordinator for the first meeting of your group. If we have no names for your area, you may wish to find a few people yourself to form a group. While such groups should have complete autonomy, you may like to stay in touch with us and with other groups and in this way a loose network of Deep Ecology groups would have a chance to develop.

Names of the already existing network are published annually in John Martin's newsletter, The Deep Ecologist, 10 Alamein Avenue, Warracknabeal, Vic. 3393.

Contact: Deep Ecology Conference Collective c/- Philosophy Department, University of Melbourne, Parkville, Vic. 3052.

Note: 'The Future in our Hands' is the name of a large-scale Norwegian peoples movement based on the values of deep ecology and social justice.



Apartheid rally

Approximately 100 000 people marched and rallied in New York on 14 June 1986, demanding an end to all US ties with the apartheid regime and commemorating the tenth anniversary of the Soweto rebellion.

The protest occurred two days after the South African regime banned all protests by declaring a nationwide state of emergency. Protestors walked and chanted 'Remember Soweto', 'Jail Botha, free Mandela' and other topical

pieces. There were a variety of groups — student groups, women's groups, union groups and even a group 'Parking meter collectors against Apartheid.' Messages were received and read from Winnie Mandela and Archbishop Desmond Tutu — 'irrevocably determined to wage the struggle for liberation of our country and the creation of a just, democratic, nonracial society.' The featured guest speaker was Alfredo Nzo, secretary general of the African National Congress who said 'Soweto demonstrated that oppression and peace cannot exist side by side. The regime failed in its murderous mission in 1976. It will once again fail in 1986.'

At the end of the rally the anti-apartheid coordination council vowed to continue organising future protests against apartheid.

Source: Intercontinental Press

Population milestone

According to the estimates of the Population Institute, Washington, somewhere on earth, a child born on Monday 7 July 1986 will be the five billionth person living on this planet. Population experts have been anticipating the arrival of the world's population at the five billion mark — although not all agree on the exact time of the occurrence. 'It is a sobering symbol of the shocking rapidity at which the world's population is multiplying,' said institute president Werner Fornos, who predicted the date for the milestone arrival.

Source: The Age.

Subsidies astray

In an article in the *Wall Street Journal*, H. Richard Heede and Amory B. Lovins noted that: 'Of the more than US\$46 billion in energy subsidies for fiscal year 1984, over \$15 billion went to nuclear, while less than \$2 billion went to non-hydro renewable energy technologies, including wind. More new energy was added to US supply from 1979-1983 by sun, wind, water and wood than by oil, gas, coal and uranium.'

Source: South Wind — Bulletin of the Australasian Wind Energy Assn. 50 Caroline St., Clifton Hill, Vic. 3068. Tel: (03) 557 5506.

Third Work Brigade

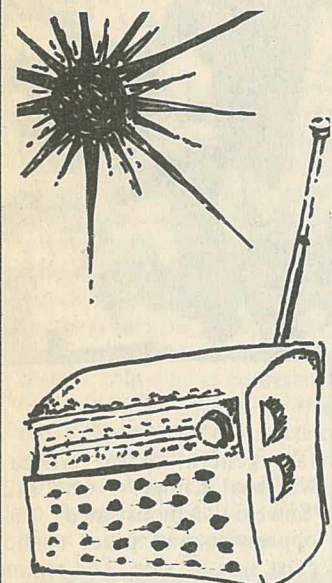
Experience Nicaragua — join the third Australian Work Brigade January 1987. Nicaragua is dependent on the coffee harvest for its economic survival. We can show our solidarity and learn first hand the reality of Nicaragua (See Bert King Picking for the revolution, *Chain Reaction* 44).

Contact: Latin American Information Centre

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EARTH NEWS

Sun in harness



Apart from the Sahara desert, Tibet is the sunniest place in the world with 3000 hours of sunshine a year. New solar technology is now harnessing this natural resource for cooking, heating, growing vegetables, and even for operating herders' new television sets.

Jianga village, in Duilongdeqing county is the first model village in Tibet to demonstrate the use of solar energy. It has 2000 solar heaters and stoves, so villagers no longer have to collect cow dung for cooking and heating. Solar hothouses are warm enough to grow vegetables year round even when outside temperatures are below freezing. A domed house frame with a glass roof is covered with transparent plastic film and in areas of severe cold, a smaller shed is built within a bigger one to raise the inside temperature. Solar energy storage batteries are beginning to supply night lighting in some pastoral areas and Tibetan herders now have battery-operated televisions and tape recorders to help pass the winter nights.

Source: Sun Mingzhen (China Features)

Dam news

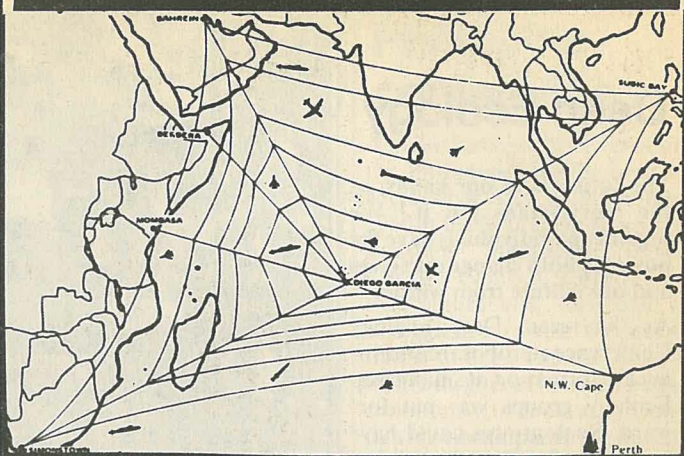
The Malaysian government has scrapped plans for the \$60 million Gombak Dam, but the proposed Bakim Dam in Sarawak is still receiving consideration. Industrial representatives from Germany, Japan and Norway and agents of the Asian Development Bank have recently visited Malaysia to discuss the project. On the technical side one major obstacle to the dam is the questionable feasibility of manufacturing a 600 km-long transmission cable capable of carrying 400 Kv of electricity. On the human side the government is confronting the organised resistance of environmental groups. Four thousand tribal peoples affected by the dam have threatened to defend their land with their lives. The final decision on the project may be delayed until 1989.

Contact: Sahabat Alam Malaysia (Friends of the Earth) 37 Lorong Birch, Penang, Malaysia.

Palm power

The Palm Oil Research Institute of Malaysia (PORIM) is now closer to producing palm diesel as a viable alternative to petroleum fuel. In revealing the progress of the palm diesel pilot plant, Professor Augustine Ong, who heads the project, said the trial run for the treatment of crude palm oil into methyl esters (palm diesel) had been highly successful. As a prelude to eventually making palm diesel a commercial alternative to petroleum diesel, 200 vehicles of all types and capacities have been selected 'to test the palm diesel until the lifetime of the engines. The trial seeks to prove that methyl esters of crude palm oil and crude palm stearin can be used as fuel for diesel engines.' The vehicles will run for a minimum of two years or cover 300 000 km as required by engine manufacturers.

Source: Environmental News Digest Friends of the Earth (Malaysia).



Peace conference

The Indian Ocean Zone of Peace is holding a non-governmental conference on the weekend 19-22 September 1986 at South Fremantle Senior High School. The broad aims include:

- To strengthen international security through regional and other cooperation in the context of the implementation of the Final Declaration of the Indian Ocean Zone of Peace.
- To make contact with grassroots peace organisations in the region.

- To discuss the effect on the India Ocean littoral countries of increasing tension in South Africa and ways of meeting this.
- To provide a forum in Australia for people of differing ethnic backgrounds.
- To sponsor people from remote West Australian communities to attend as delegate and to meet international visitors.

Contact: Kath Gallop, Secretary Australian Peace Committee (WA) Tel: (09) 335 3429

Pro-nuclear!

It would be irresponsible of Britain to abandon nuclear power in the wake of the Chernobyl disaster, the Energy Secretary Mr Peter Walker said in early June 1986. The speech was apparently aimed at stiffening the government's resolve to press ahead with the Sizewell B nuclear power station in Suffolk. People questioning the safety of Nuclear Power Mr Walker said must also face the possibility of lower living standards if a world shortage of electrical energy occurred.

If we care about the standards of living of generations yet to come, we must meet the challenge of the nuclear age and not retreat into the irresponsible course of leaving our children and grandchildren a world in deep and probably irreversible decline.

So what does he think is happening now?

Source: The Guardian Weekly.

Nuclear count

For the first time local scientists have proof that US warships visiting Fremantle carry nuclear weapons.

The vice-president of Scientists Against Nuclear Arms (SANA) Dr David Blair made the claim at a recent West Australian Institute of Technology (WAIT) conference. Dr Blair, a physicist at the university of WA, boarded US ships open to the public with a concealed geiger counter and monitored the radiation readings through walkman-like headphones. SANA intends to publish results stressing the fact that if there was an accidental detonation of one of the nuclear weapons a third to half of the population of Perth could be killed.

Source: Fremantle Focus June 1986.

Plutonium in flight

One of the skeletons that has emerged from the National Aeronautics and Space Administration (NASA) to Congressional investigators, is the agency's shifting regard for safety as launch schedules are tightened.

In January 1986, NASA's Aerospace Safety Advisory panel questioned the safety of launching two unmanned scientific missions, Galileo and Ulysses from the space shuttle. Galileo, which is to explore Jupiter, is powered by radioisotope thermal generators containing twenty-one kilograms of plutonium. Ulysses, going to the Sun, carries ten and a half kilograms of plutonium. If an accident occurs during the flight, plutonium could be spread through the atmosphere.

The launch, according to the orbits of the Sun and Jupiter must take place in a short "window" that comes around only once every thirteen months. The old philosophy that technical perfection is more important than schedule has changed with Galileo and Ulysses. Schedule pressures are forcing solutions which might otherwise be rejected.

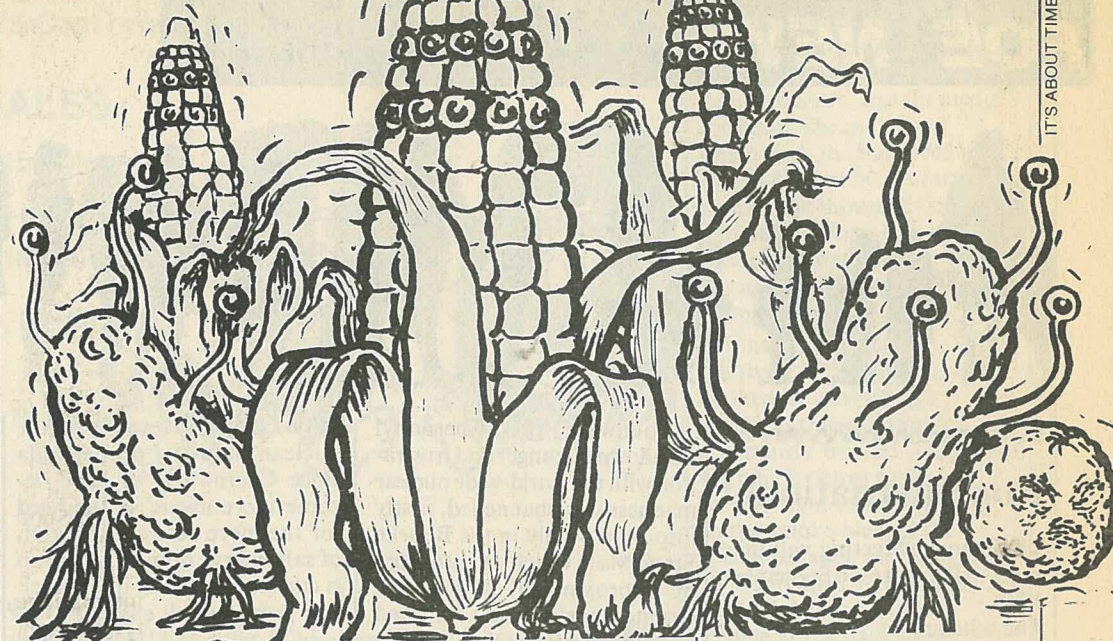
Source: New Scientist.

Food facts

Unwanted food stocks held in European Community stores are valued at more than \$19 billion demonstrating the urgent need for reform of the community's farm policy. Late 1985 stocktaking revealed butter 977 000 tonnes, beef 730 000 tonnes, cereals 184 million tonnes, and skimmed milk powder 502 000 tonnes. The size of the stocks depressed market prices within the community and contributed to lower prices on international markets. Total farm spending in 1986 is expected to reach \$43 billion some 70% of the entire community's budget.

Source: Environmental News Digest Friends of the Earth (Malaysia).

Irradiation carousel



War of words

Food irradiation — is it a safe and effective way of preserving and decontaminating foodstuffs or a piece of high technology which has the potential to create more problems than it solves? Opposing camps are locked in a war of words.

The Australian Federation of Consumer Organisations has withdrawn from the National Health and Medical Research Council's working party on food irradiation because it has become apparent the Australian

public would be presented with a one-sided view. Ms Pamela Murray, the national consumer representative on the working party, said that a number of reputable researchers had pointed to problems with the technology and stressed that it is not so much the fact that claims can or cannot be proved but that more work needs to be done before food irradiation can be said to be completely safe.

On the other hand Mr George West, the general manager of Steritech, Australia's only commercial irradiation company, is keen to see public fears dismissed. He wants to extend Steritech's activities to include food irradiation and says that of all the Australian states Queensland stands to gain the most from the process both as a quarantine measure and to prolong shelf life of fruit and vegetables, particularly tropical fruits. Mr West stated that the primary use would be in export foods and although he did not anticipate the domestic markets to be flooded if the process was adopted in Australia, those available would be clearly labelled for consumers information.

Source: Sunday Mail Brisbane

Close The Gap

Pine Gap, situated in Central Australia, 19 km SW of Alice Springs is recognised as the single most important US facility in Australia, and one of the most important US satellite ground stations in the world. It is acknowledged as a first strike nuclear target. The agreement between Australia and the USA was signed in 1966, but it was not until 1975 that the Australian Government became aware that Pine Gap has from the beginning been a CIA operation. The Alice Springs Peace

Group has developed a strategy to close Pine Gap. Their campaign is built around two main dates:—

19 October 1986. On this day the present ten year agreement reaches the end of its ninth year. Under the agreement either party can give twelve months notice in writing from this date for the agreement to be terminated. Groups around Australia and the Pacific are called upon to demonstrate against all foreign bases on this day.

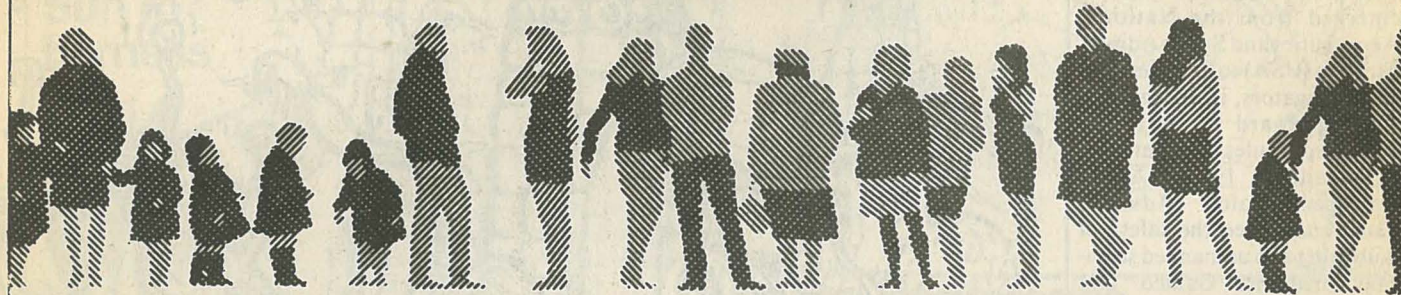
19 October 1987. The present agreement lapses on this day. Either a new agreement will be signed or the base will continue

on the understanding that twelve months notice must be given to terminate. They are inviting people from around Australia and elsewhere, to join them at the gates of Pine Gap on this day and close it down (even if only for a short period). Rallies will be organised in other centres for those who cannot attend.

You can support the campaign by sending letters of support, donations, information about resources or ideas to develop the campaign.

Contact: Alice Springs Peace Group Bases Campaign, PO Box 1637 Alice Springs NT 5750. Tel: (089) 526 782

FOE NEWS



Foe International

The Annual Meeting will take place in Penang 6-16 September 1986.

The schedule is:

6 September: Arrival and jet-lag adjustment

7-9 September: Tropical rain-forests including one day in the forest.

11-12 September: Annual meeting.

13 September: Break.

14 September: Annual meeting.

15-16 September: Jungle Holiday.

Collingwood

FOE Collingwood has a bookshop, a food co-op and an anti-uranium collective. The bookshop has two main projects on which it is presently working, tied in with the International Year of Peace. We are publishing a select annotated bibliography on peace education, social justice and the nuclear environment as well as producing a poster on the nuclear environment. Both of these should be printed shortly.

The FOE Collingwood Anti-Uranium Collective is a group of activists primarily concerned with Australia's role in the nuclear cycle. The disaster at Chernobyl in the Soviet Union has reinforced our opposition to the nuclear industry and instilled a sense of urgency into our group.

Following the Chernobyl meltdown our anger and frustration with the world-wide nuclear madness was channelled, firstly into a snap rally in the Bourke Street Mall, which was attended by approximately 500 people despite short notice, followed up with an action at the Uranium Information Centre where six activists from FOE and the Movement Against Uranium Mining (MAUM) occupied the office. For about two hours they transmitted information on the nuclear industry over a PA system to the crowd outside. The six protesters have been charged with illegal imprisonment of the two secretaries who were closed in the office with them.

In the longer term our focus will be on the mining and export of Australian uranium. We believe that to stop uranium mining is an achievable and concrete goal which will ensure that we are not directly fuelling the nuclear cycle. Our main campaigns will be on Ranger uranium mine in Kakadu National Park, Roxby Downs (Olympic Dam) in South Australia and also uranium exploration leases such as Manyinee in Western Australia.

Another main focus of the Collective is the visits of nuclear-powered and/or nuclear-armed warships to our ports. We have a group of activists who are ready to camp at the wharf, to maintain a vigil and actively oppose such visits.

Members of the Collective are also working on food irradiation, the Pine Gap lease renewal and Aboriginal solid-

arity. Finally, in response to the nuclear industry propaganda since Chernobyl, we have become more aware of the need for the more active promotion of safe energy options. A group is currently forming to research and promote soft energy.

FOE with MAUM are currently joint holders of the Coalition for a Nuclear Free Australia Secretariat. See the report from the June 1986 Consultation on page 21 of this issue.

The Food co-op was begun six years ago with two aims in mind — to put into practical effect the FOE philosophy as it applies to food and to provide ongoing financial input into the group. The co-op operates on a very low profit margin. Members supply their own packaging so that food can be bought in bulk eliminating this cost. Over-

heads are kept down because the premises is shared with the bookshop and the other FOE Collingwood campaigns and because of the co-operative contribution of the labour required to operate the co-op.

Attention is paid to where the food is produced, who sells it and what it contains. We try to ascertain if there is any environmental damage caused by the production of the food we sell and no product is sold which has been tested on animals.

FOE Collingwood also has a radio programme every Thursday at 10.30 am on 3CR 837kHz. Tune in and find out about the ongoing activities of FOE Collingwood and the movement in Victoria in general.

FOE Collingwood, 366 Smith St., Collingwood Vic. 3066. Tel: (03) 419 8700.



Some of the people of FOE Collingwood with someone else's Rolls Royce.

LINDA MARKS

• AUSTRALIAN CAPITAL TERRITORY

CANBERRA: PO Box 1875 Canberra, ACT 2601

• NEW SOUTH WALES

BLUE MOUNTAINS: c/- 156 Megalong St, Leura NSW 2780

MACQUARIE UNIVERSITY: c/- SRC, Union Building, Macquarie University North Ryde, NSW 2113

NEWTOWN: PO Box 169, Newtown, NSW 2042

Tel: (02) 517 2139

RYDE: 18 Kokoda St, North Ryde, 2113

Tel: (02) 88 2429

SYDNEY: 787 George St, Sydney NSW 2000

Tel: (02) 211 3953

UNIVERSITY OF NEW ENGLAND:

c/- SRC, University of New England, Armidale, NSW 2006

UNIVERSITY OF SYDNEY: PO Box 364, Wentworth Building, University of Sydney, NSW 2006

• NORTHERN TERRITORY

DARWIN PO Box 2120, Darwin, NT 5794 Tel: (089) 81 6222

• SOUTH AUSTRALIA

ADELAIDE: 120 Wakefield St, Adelaide, SA 5000

WILLUNGA: PO Box 438, Willunga, SA 5172

WILLIAMSTOWN: c/- Willunga FOE PO Box 438, Willunga, SA 5172

• VICTORIA

COLLINGWOOD: 366 Smith St, Collingwood, Vic 3066

Tel: (03) 419 8700

OAKLEIGH: 69 Waratah St, South Oakleigh, Vic 3166

ORGANIC FRUIT AND VEGETABLE COOPERATIVE: 408 Smith St, Collingwood, Vic 3066

Tel: (03) 419 9926

PENINSULA: PO Box 319, Seaford, Vic 3198

CHAIN REACTION: GPO Box 530E Melbourne, Vic 3001

Tel: (03) 419 8700



from page 2

from every corner of Victoria the media was able to show scenes of violent confrontation between a dozen Anarchists and a few pro-Anzus demonstrators. Instant media stardom! The months of organising, the hundreds of miles of travel by country people, the thousands of individual efforts by so many peaceful people were put to use as a backdrop for a few people's ego trip.

Finally, the speeches. Up at the front of the rally we were choked by heavy black chemical smoke from the Anarchists' bonfire. They were burning a petrol soaked banner right under the stage so the smoke blew in the speakers' faces, and heckling so loudly that the speakers couldn't hear themselves. People at the back were unaware of this because the PA picked up the speeches but not the heckling. If the crowd had known, I think there would have been a strong reaction against the Anarchists. One of them leapt on stage and launched into a diatribe against the organisers, mentioning the arrests. The organisers said they were trying to bail the arrested people: I think the Anarchists should have done this themselves.

Once again the Anarchists were trying to seize the limelight. If every one of the hundreds of groups there had demanded the right to speak we would have been there for weeks.

For the rest of the speeches they threw things that looked like sticks or melon rinds and shouted abuse at Helen Caldicott. Was all that real anarchism? Anarchy involves free co-operation — "A people united will never be defeated": 100 000 people were united, a couple of dozen found that very frustrating, because they couldn't step in and take over direction of the rally, or interest anyone else in their violent tactics.

Sarah Green
Melbourne, Vic.

Making a stand

'We believe that the land is our very life; if we lose our lands our tribes will surely die. We natives have a natural right to the lands of our ancestors before anybody else, a right that comes directly from God . . .

Thus we wonder why are we natives considered squatters in the land of our ancestors, and why is it so difficult to clarify our land ownership, while foreigners can easily get hold of vast tracts of our land without being considered squatters?

THIS IS OUR STAND: This is our land, since our ancestors have lived and died in this land, we also intend to live and die in this land.'

Excerpt from 'The Tribal Filipinos' Stand about their ancestral lands. Tribal Forum, Vol. VI No. 2 1985.

By Dianne Lucas

Tribal Filipinos number approximately 3.5 million and form a diverse collection of over 40 ethnolinguistic groups. They are members of indigenous communities who now inhabit the remote interiors of Luzon (the main island of the Philippines), Mindanao and some of the Visayan Islands. Unlike the non-tribal Filipinos whose ancestors belonged to the conquered majority, tribal Filipinos are descendants of the people who refused to be conquered by successive invaders . . . first the Spanish, then the Americans. When threatened by foreign domination, the tribal Filipinos either withdrew to the hinterlands or fought, at first successfully, to stand their ground.

Now they are the poorest of the poor. They live marginally and are treated by foreigners and many lowlanders (non-tribals) as primitive and ignorant inferiors.

The land is as important to the tribal Filipinos as it is to Australian Aborigines and other indigenous peoples throughout the world. Land is life, a sacred trust to be loved and enriched for the following generations.

Their attitude to the land is in direct contrast to those who regard the land as valuable only for profit and power. Tribal lands consisted of vast tracts with water

Dianne Lucas is a travelling activist.

sources, forests, pasture and many sacred sites. It was all communally owned and worked collectively. In the early 1900s most tribal land was declared by the government to be public land, which was in the interests of the US government. Spain ceded the Philippines to the USA at the turn of the century and since then Philippine government policy has virtually been US government policy.

More deceptive tactics have also been used. The government has set up agencies such as the former PANAMIN (Presidents Assistance to National Minorities) supposedly to assist tribal communities. These agencies then appoint their own tribal leaders regardless of the tribe's wishes. This way they can control the people, herding them into tribal reservations, forcing them to abandon their traditional way of life. Para-military units are formed, such as the Integrated Civilian Home Defence Forces (ICHDF) to discipline and ensure the obedience of the community to the new rules and regulations.

So, what happens to the land once the people have been evacuated? The ancestral lands are occupied by US military bases, mining and logging concessions, agribusiness plantations, cattle ranches and government projects such as dams, which the government claims to be the needs of the majority but which in fact are for the needs of the transnationals and local big businesses.

The lands the tribal Filipinos now occupy are the last frontiers of development. There is nowhere else for them to go. If they are forced from this land they and their culture will die.



Negrito children.

DIANNE LUCAS

TRIBAL FILIPINOS BATTLE FOR THEIR LAND

LUZON

In Luzon the ancestral lands of the Aetas and Negritos have been taken over by US military bases . . . Clark Air Force Base and Subic Bay Naval Base.

At Subic Bay some Negritos continue to live on the base and in the 1960s they were granted exclusive scavenging rights in the Subic Bay dump. In 1976 PANAMIN took over the service contract and Negritos now have to compete for the jobs of sorting garbage and metal scraps. Previously they earned on the average 100 pesos a day. Now their earnings are about 30 pesos a day.

Clark Air Force Base was established in 1902 and now occupies 55 thousand hectares. The actual base site is fenced but there are many hectares of 'military reservation' outside this. This is where many Negritos have been pushed to. It seems that the Clark boundaries can be extended at any time and in so doing many villages are ejected and 'resettled' elsewhere. At present there is one village teetering on the top of a hill directly overlooking the Clark perimeter fence and its very sensitive radar receptor. The village inhabitants are regarded as a security risk and will be moved before too long.

One of Imelda Marcos's pet projects was the Ministry of Human Settlement. They constructed many houses, very classy ones, supposedly for the landless, homeless Negritos. They were to pay 30 thousand pesos over 25 years for the privilege of these houses. However, the houses at present are all occupied by lowlanders.

One Negrito village is called Target, very aptly named because Clark has made a firing range there. The area is a natural amphitheatre and most days of the week there are three training sessions of 30 personnel each time. The effect this has had on the village people has not been calculated, but some believe even babies in the womb are affected.

The lack of basic human rights, the continual 'resettlement' and the desperate poverty of the Negritos makes them economically dependent on Clark Air Force Base. Some are hired as guards for Clark residences, grossly underpaid of



Banana plantation on Mindanao. American agri-businesses have taken over large tracts of land.

course. They are also jungle survivor instructors and are recruited into paramilitary units to help capture the New People's Army (NPA). Where the Negritos hunt and collect their food, the Air Base conducts their war games.

The Philippine government has been concerned that the 'US bases remain in the country but it has never done anything for the Negritos who are landless, illiterate, poor and hungry.'

MINDANAO

The island of Mindanao is another area rich in natural resources — dense forests, lakes, rivers and seas teeming with fish, and huge deposits of mineral wealth including gold.

It is the ancestral land of the Muslims and the Lumads. The Lumads are comprised of many tribal Filipino groups. They were part of the successful defence of Mindanao against complete Spanish occupation but were not so successful against American colonial invasion. Land Acts of 1902 and 1905 declared their lands 'public land'. The Land Acts of 1913, 1914 and 1919 invited landless peasants of Luzon and the Visayas to become settlers in the 'colonies' of Mindanao. These settlers had the backing of the Philippine and US governments . . . another 'divide and rule tactic' of the American colonial government. The Lumads were driven into the

mountains and their lands were handed over to the settlers, to settlers who were already 'colonized' and so were easy to deal with when the big corporations moved in. Which they did. Large areas of Mindanao are occupied by agri-business plantations and cattle ranches, mining and logging concessions. There are steel, cement and chemical industries, banks, marine and shipping industries and off-shore oil explorations.

There are a total of 295 local and foreign corporations in the region, 54 of which belong to the top 1000 corporations in the country. Nine major American corporations control approximately 300 thousand hectares. There are nine mining companies and 47 logging concessions. Seven American banks have major interests in Mindanao (Chase Manhattan, Citibank, Morgan Guarantee Trust Co., Chemical Bank of New York, Bank of America, Manufacturers Hanover Trust and US Export-Import Bank). Much of the land has been turned into oil-producing palm plantations and ipil-ipil plantations — all inedible products. Mindanao has been the scene of intense militarisation; 60% of the Philippines Armed Forces are deployed there, not to mention the paramilitary ICHDF forces, and the fanatical pseudo-religious groups who perform bloody ritual killings and armed by the Marcos government. Once these groups have succeeded in

DIANNE LUCAS

ejecting the people from their land by strafing, burning and killing then the foreign companies move in to develop the land.

PANAMIN was instrumental in Mindanao in forcing tribes away from their ancestral lands and into heavily guarded and over-crowded settlements. Although PANAMIN as an office has been abolished, its repressive practices continue to be carried out by its representatives. Needless to say the large corporations exploit both the land and the people. They are destroying the environment and soon Mindanao will not yield enough for the subsistence of its people. There is soil erosion, forest denudation, silted rivers and pollution.

THE CORDILLERA

The Kaigorotan (Igorot) of the Cordillera inhabit the richest region of Northern Luzon. The forests are lush, the soil fertile and mineral wealth abounds. The Kaigorotan consists of many tribes whose sheer courage and human resources opened the land and reaped abundant harvests. They defended their lands against invaders and became a warrior society. The many tribes developed indigenous political institutions like the bodong, or peace pact. It enhanced conditions for peaceful co-existence and mutual defence. When the Spaniards came after the gold of the Cordillera the Igorot asserted their freedom. The lowlanders were then sent in as troops to subdue them but again the Igorots were successful. It was only the superior armed forces of the United States which succeeded in imposing a US presence in the region.

As in Mindanao, American colonial rule initiated the policies of 'public land'. This gave the colonial government authority

over its use and allocation 'and specifically declared it open for purchase and exploitation to citizens of the United States'. (TF Vol. VI(5) 1985 'A Composite Profile'). The mining companies moved in. Mining and logging concessions, again as in Mindanao, are the biggest exploiters of the natural and human resources of the Cordillera. The ecological balance which the Igorot respected so well is being drastically spoiled.

Even with the formal end of American colonial rule the Philippine government still worked by US-initiated policies. They proposed a series of hydro-electric dam projects that would flood many hectares of ancestral rice terraces, sacred burial grounds and village communities. The Igorot people knew the dams would benefit the huge foreign-owned corporations in the area rather than the lowland majority as the government asserted.

It was with these projects that militarisation increased in the area. The people, through their peace pact, banded together and were able to temporarily halt the Chico dam construction by the International Monetary Fund (IMF) and the World Bank. It would have flooded the homes of 100 000 people.

It was in the Cordillera that Marcos ordered the construction of a gigantic concrete bust of himself. On 9 March 1986, the people of the area reclaimed their land and removed this obscene scar from the landscape.

Tribal Filipinos are organising, but different groups are at varying stages. The Kaigorotan have had their peace pact for years and in 1984 they created the Cordillera People's Alliance for the Defense of the Ancestral Domain. Their main demand is genuine regional autonomy within a democratic government of the Philippines. In Mindanao the tribal and

non-tribal people are coming together to demand among other things, recognition of the Lumad's rights to their ancestral land and to self-determination. The Church is playing an active part in reconciling the people of Mindanao so they can take a united stand against the militarisation and exploitative practices of foreign and local corporations.

In Central Luzon the Church also takes an active role in educating the Negritos. The literacy problems are being tackled with educational techniques which are relevant rather than traditional. Through this education the people will be able to organise effectively against the land-grabbing US and Philippine officials.

In September 1983 the First Consultative Assembly of Minority Peoples of the Philippines (CAMP I) brought together tribal leaders from the Cordillera, Mindanao, Southern and Central Luzon. They made their first national intertribal peace pact for solidarity in defense of ancestral lands and their rights to self-determination. In November 1985 CAMP II was held.

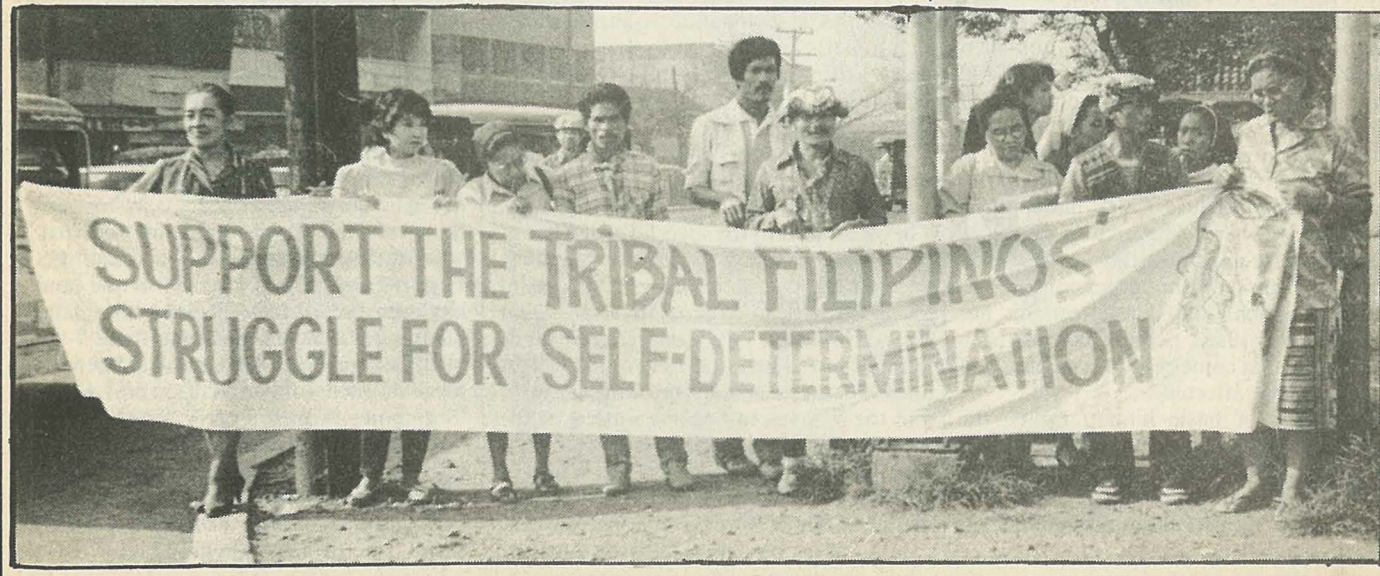
The people of the Philippines, tribal and non-tribal are uniting to overthrow exploitation and oppression of which they have both been victims. They look to the time when they will achieve genuine and total human liberation.

Sources

Tribal Forum Vol VI(2) March-April 1985; Vol VI(5) Sept-Oct 1985; Vol VI(3) May-June 1985. Tribal Filipinos: A General Overview. Author unknown.

Footnote

It is still yet to be seen what changes will come about with the new Aquino government. As it was brought to power by a political rather than a social 'revolution', and its priorities seem to be elsewhere at present; it will be a while before we can expect action, if there is to be any.

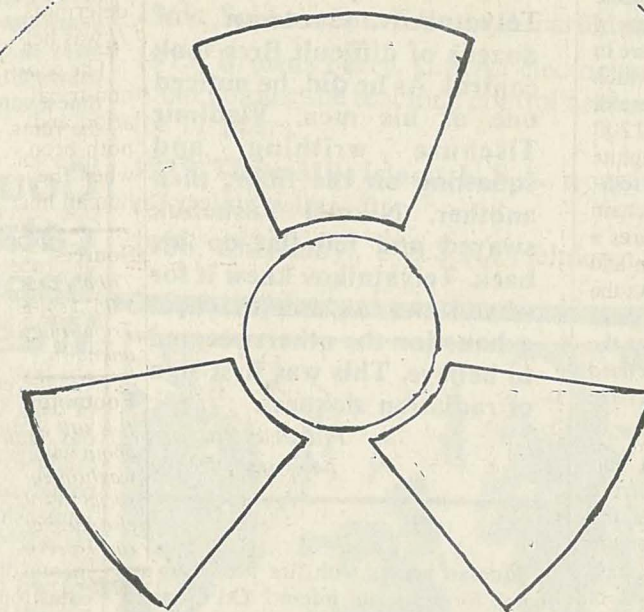


DIANNE LUCAS

The

CHEERNOI3YL

DANGER



РАДИОАКТИВНЫЙ FALLOUT

The Chernobyl reactor ablaze

The accident in the nuclear reactor near Chernobyl was one of the worst in history. Hundreds of people are still in hospital slowly dying of radiation sickness while about 320,000 people in Europe and the USSR may die of cancer, based on World Health Organisation figures. Many will be children.

People living in the towns near the reactor have been permanently displaced. They have already received too much radiation to live near the reactor. The Soviet Union has punished several people for their part in the accident. But punishing people cannot eliminate human error. Accidents happen in every industry, they just do not usually have such disastrous consequences.

The accident began in the early hours of April 26. There may have been a failure in the cooling system, or an experiment which led to a power surge. The fuel overheated. As the temperature climbed to about 1200 degrees, steam reacted with the graphite (carbon) block surrounding the fuel rods. This graphite normally moderates the chain reaction. Now, under high temperatures a highly explosive mixture of hydrogen and carbon monoxide gas was released. As the temperature climbed higher the crisis worsened. A chemical reaction between the superheated steam and the zirconium used to clad the uranium fuel would have released more hydrogen.

Finally the mixture of hydrogen and carbon monoxide exploded. The horrific explosion ripped through the roof of the heavy concrete structure erected over the entire power station. Flames leapt high above the shattered roof as tonnes of radioactive debris were lifted a kilometre into the sky. For days radioactive clouds billowed out of the burning and melting reactor. Picked up by the prevailing winds, the clouds with their poisonous radioactive debris, dust and gases were swept northwest across the Ukraine.

Downwind the fallout of the heavier debris and ash blackened the Ukrainian

farmlands and villages. Over a hundred kilometres away the inhabitants of one area of Byelorussia were showered heavily with fallout. Clouds of dust and vapours were carried on winds thousands of kilometres laying down swathes of low-level radioactivity over vast stretches of Europe. Radioactive particles rising into the troposphere were returned to earth in rainouts only weeks later creating 'hotspots' around the northern hemisphere as far away as Japan and North America.

Inside and outside the reactor building hundreds of power workers and firefighters fought against overwhelming odds with their firehoses to contain the blaze. One by one they collapsed writhing in pain. Their collapse came not from the usual smoke inhalation and heat exhaustion but a more powerful enemy — radiation from the exposed uranium fuel rods, which were emitting radiation hundreds of times more intense than the Hiroshima bomb.

Telyatnikov, veteran of dozens of difficult fires took control. As he did, he noticed one of his men, Vladimir Tischura writhing and squatting on the floor; then another, Nikolai Vashchuk swayed and fell flat on his back. Telyatnikov knew it for what it was — not the heat exhaustion the others seemed to believe. This was first sign of radiation sickness.

— *The Australian*,
14 June, 1986.

Human beings with fire hoses are no match for a nuclear inferno. On the third day the army units, obviously trained for the radioactive battlefield, were called in. Helicopter pilots flying through radioactive clouds (as aircrews had flown through mushroom clouds at Maralinga) dropped bags of sand, boron and lead. Boron was used because it is an efficient absorber of neutrons, which were sustaining the chain reaction in the melted uranium fuel. Until

the chain reaction was slowed intense heat and radiation would continue to be given out. The lead absorbed the gamma-rays. The neutrons and gamma-rays being emitted were very penetrating and dangerous for the salvage workers.

Others approached in ground vehicles. Work had to be done quickly to keep their exposure to the deadly radiation to a minimum. They worked very short shifts, sometimes only minutes, to bolster the reactor's foundations to prevent it melting itself into the groundwater. Levy banks were built along the Pripyat River flowing nearby in an effort to limit the radioactive debris and ash washing into it. For the hundreds involved in the grim task, and exposed to the radiation, the chances are that life will be much shortened by their exposures.

A huge engineering operation has been mounted to build a catacomb around the hot ruins, which after two months had stabilised at about 400 degrees. It will be hundreds of years before the natural process of atomic decay burns itself out. For over a hundred years water must course along a complex array of channels through the walls of the catacomb to take away the heat. All that time a constant vigilance must be kept over the ruins.

Could a nuclear catastrophe happen in the West?

Whatever may come from experts' analyses of what went wrong on that fateful April day, more accidents cannot be ruled out. And the consequences can be once again as cataclysmic as at Chernobyl. It is the immensity of the human suffering and the far-reaching and long-lasting environmental damage flowing from the Chernobyl catastrophe that we must keep in mind and take to heart.

Populations with reactors operating right in their midst have been sharply reminded that they may some day have a 'Chernobyl' in their own backyard. There has never been any great enthusiasm among people to live with a nuclear reactor as a neighbour, but a majority of people had

been persuaded by the nuclear industry that they were secure from any kind of nuclear catastrophe. And there was the promise of jobs for depressed local economies. Now people must live in the knowledge that the tragedy in the Ukraine, whose land and people received most of Chernobyl's radioactive fallout, may one day be re-enacted in their countries.

Chernobyl reiterated the lesson of the nuclear weapons tests of the 1950s: radioactive fallout knows no national boundaries. Radioactive iodine from Chernobyl was found in a mother's milk halfway around the globe in Japan. In parts of Europe the radioactive fallout from Chernobyl was a hundred times higher than that of the weapons-tests' fallout in the 50s. People have once again been made aware of what Einstein called the "slow torture of radioactive dust and rain".

Chernobyl had many forerunners: a succession of lesser, though still serious, nuclear accidents. Among them have been fires or partial meltdowns at the British reactor at Sellafield (once known as Windscale), the U.S. Three Mile Island, Fermi and Brown's Ferry reactors, a French reactor at St. Laurent and in Switzerland.

Each accident developed in its own peculiar way. Each was the result of a unique combination of human error and technical malfunction. The reactor fire at Brown's Ferry was started by an electrician careless with a lighted candle. In one close shave in a reactor, at Clay in the United States, the reactor control system was shut off by a light bulb, slipping out of a worker's hand and falling behind the instrument panel. The Three Mile Island accident was started when an ordinary steam relief valve jammed open and an emergency water-cooling pump was wrongly switched off.

Just three months before the catastrophe at the Chernobyl power station the Ukraine's Minister of Power and Electrification, Vitali Sklydarov, claimed that the reactor type in use there had "safe and reliable controls that are protected from any breakdown, with three safety lines... even if the incredible should happen, the automatic control and safety systems would shut down the reactor in a matter of minutes." But Murphy's Law, which says that if something can go wrong it will, once again asserted itself.

There are alternatives to using nuclear power to satisfy the world's energy needs. Yet political leaders of all parties and colours have lavished financial resources on the technology while, at the same time, allowing the more benign energy alternatives to languish. Australian technocrats and political leaders are among those responsible for allowing this situation to arise.

A SHORT LIST OF ACCIDENTS

1957. Windscale: graphite around fuel rods in a reactor caught fire. Over 500 square kilometres were heavily contaminated with radioactive fallout, which reached as far as Denmark. Official estimates are 33 fatal cancers and 270 non-fatal thyroid cancers, but independent estimates put the figure much higher.

1958. Kyshtym in the Urals, U.S.S.R.: massive explosion in radioactive waste dump. Many people suffered from radiation sickness and hundreds of square kilometres of land were made uninhabitable. The names of many villages in the area have been erased from Soviet maps.

1966. Fermi reactor near Detroit, U.S.A.: fast breeder reactor suffered partial meltdown, when the coolant was blocked by a piece of metal.

1969. Lucens, Switzerland: a reactor built inside a mountain cavern leaked large amounts of radioactive coolant. Cavern has been sealed off.

1969. St. Laurent, France: A partial meltdown of a reactor.

1975. Browns Ferry, U.S.A.: electrician with a candle sets on fire the room holding the reactor's control cables, which burned out of control for 11 hours.

1979. Three Mile Island, U.S.A.: a partial meltdown as a result of loss of cooling water.

1986. Chernobyl, U.S.S.R.: meltdown.



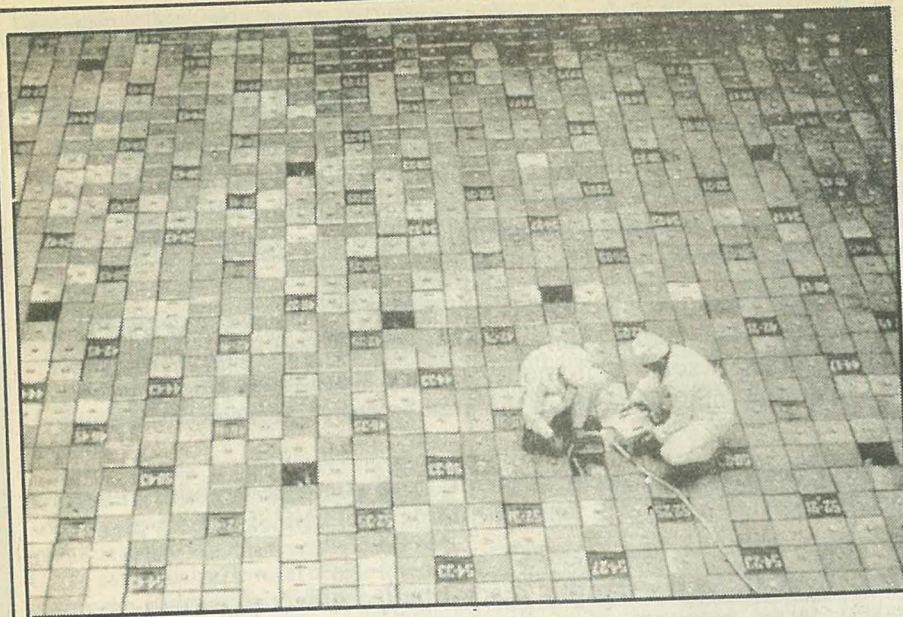
Worried Ukrainians are checked for radiation at Kiev.

Soviet technocrats still put on a confident front saying they 'will make sure another Chernobyl can never happen'; their Western counterparts boast that 'it cannot happen here'. However the plain logic of events at Chernobyl, Three Mile Island and other reactor accident sites around the world is clear. Other accidents will follow

until the nuclear industry is closed down.

In the West, in one pronouncement after another, nuclear industry spokespersons have attempted to discredit Soviet designed reactors and extoll the safety virtues of their own. In fact the Chernobyl plant was not, as is being claimed, some kind of poorly

"Radioactive iodine from Chernobyl was found in a mother's milk halfway around the globe in Japan. In parts of Europe the radioactive fallout from Chernobyl was a hundred times higher than that of the weapons-tests' fallout in the 50s."



Workers on the reactor core before the accident.

designed, outmoded and transparently unsafe technology, which would not be used in the West. The reactor was more heavily instrumented with fail-safe devices than most Western reactors.

It has often been pointed out that the reactor did not have the kind of containment shell now being built around most, but not all, reactors in the West. However Soviet designers had adopted the principle of Canada's CANDU reactor of dividing up

the reactor fuel into separate compartments in order to contain the damage of any malfunction. This meant that they did not 'put all their eggs in one basket'. Soviet official, B.A. Semenov, made this point about the Chernobyl reactor design in an article published in the International Atomic Energy Agency Bulletin, in 1983. He claimed that "the design feature of having more than 1000 individual primary circuits increases the safety of the reactor

system — a serious loss-of-coolant accident is almost impossible". (editor's italics)

After all the comparisons have been made of reactor safety in East and West, we come down to the crucial need for all reactors to have an impregnable cooling system. Almost all reactors are cooled by water. In a small number gas carries away the heat and transfers it to a water-cooling system. Loss of coolant has been involved in most major reactor accidents. The engineering of water-cooling systems now has hundreds of reactor years of experience behind it. If engineers have not been able by this time to perfect a fail-safe system they never will.

Another feature common to most reactors is that they hold the potential to generate explosive hydrogen once they overheat to somewhere above a thousand degrees. Both Three Mile Island and Chernobyl experienced hydrogen explosions.

On the basis of the industry's record so far, and with 300 nuclear reactors operating worldwide, the likelihood is that a nuclear disaster could occur as frequently as once every seven years.

A number of reactors operating in the West have containments which are no heavier than the Chernobyl reactor. Overall Soviet reactors are neither more nor less safe than those in the West.

CHERNOBYL DESIGN FOUND TO INCLUDE NEW SAFETY PLANS

U.S. Experts Say Construction Is Similar in Some Ways to Plants in America

By STUART DIAMOND

The nuclear power plant that exploded in the Soviet Union last month had more safety features and was closer to American reactor designs than Western experts had assumed in the days soon after the accident, nuclear experts say.

Chernobyl unit 4 had a variety of features to contain excessive steam and radiation and reduce accident effects. According to Dr Edwin L. Zebroski, chief nuclear scientist at the Electric Research Institute in Palo Alto, Calif., the Chernobyl reactor was surrounded by a heavy structure 200 feet long, 70 feet high and 70 feet wide.

The structure is inside the heavily damaged reactor building and has steel walls 1 to 2 feet thick backed by concrete 6 to 8 feet thick, said Dr Zebroski, who has visited Soviet reactors and was working from design drawings, copies of which were provided to The New York Times.

There was also a water pool in the basement of the Chernobyl building, holding several million gallons, to quench steam in an accident, he said. The pool is called a "bubbling pond" in the Soviet reactor and a "suppression pool" in the 40 American reactors that incorporate it, including the Shoreham plant being proposed for commercial operation on Long Island. Pipes conducting the steam lead into the pool from the reactor area above. The area around the reactor also has a nonflammable "inert" atmosphere containing nitrogen to stifle combustion, as in American units.

Nuclear proponents and industry officials have tried to minimize Chernobyl's relevance to American nuclear power plant operation by contending that American units have better safety features.

In a mailing to reporters last week, the

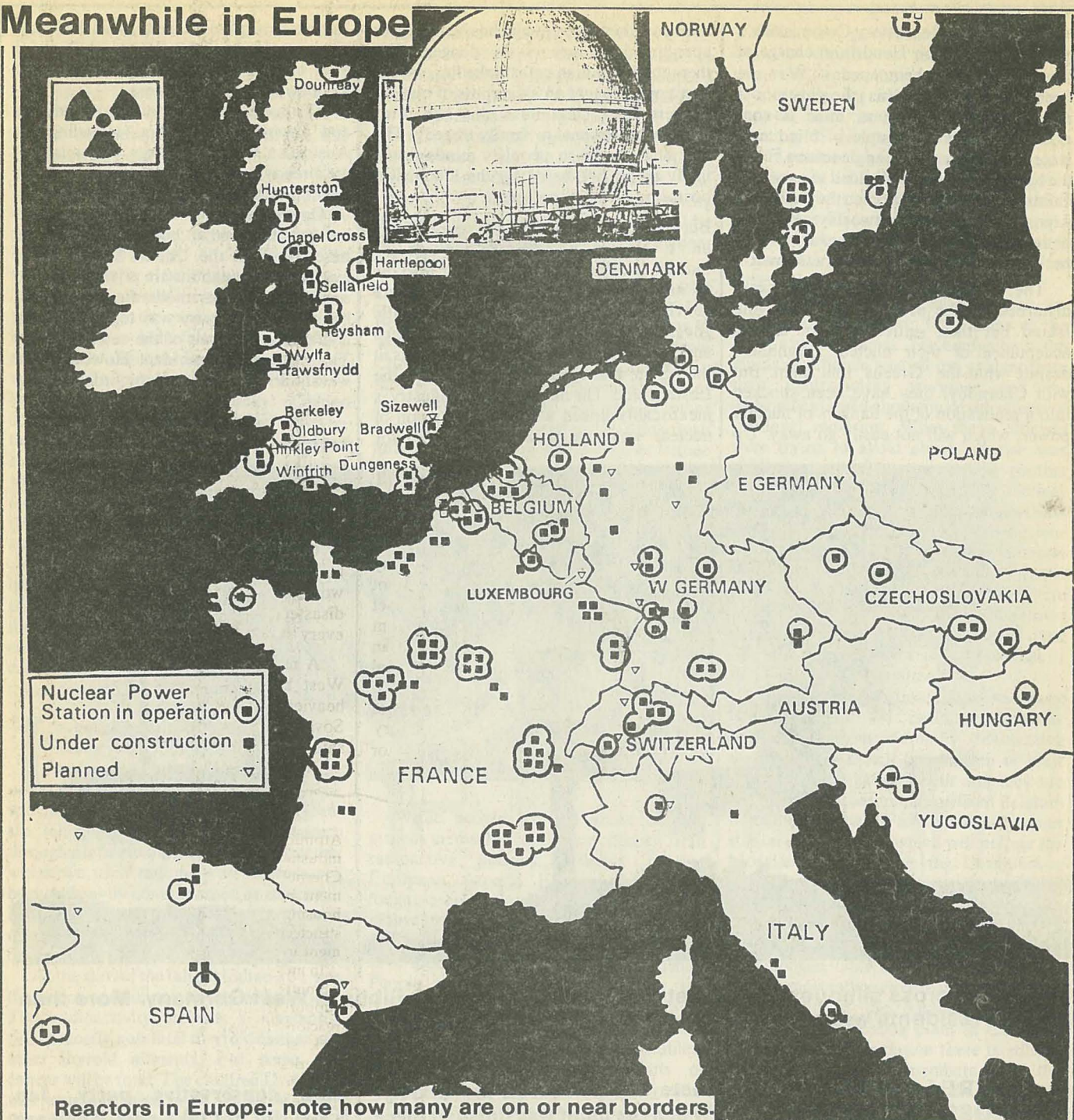
Atomic Industrial Forum, the nuclear industry trade association, said: "At the Chernobyl RBMK-1000 reactor, no containment building is provided. The building housing the reactor apparently was constructed for structural rather than containment integrity."

In newspaper advertisements, the U.S. Committee for Energy Awareness a utility-supported group, said that "many Soviet reactors — including those at Chernobyl — lack such containment structures" as American reactors have, including steel and reinforced concrete.

"We have not and will not have a Chernobyl-type plant accident here," Sherwood Smith, the chairman of the Edison Electric Institute, said at a news conference on Wednesday. But Steven C. Sholly of MHB Technical Associates of San Jose, Calif., a consulting company that has often been critical of American nuclear designs, said statements about the lack of Soviet containment were "very misleading". He added: "If they are trying to say that the plant has no containment, they are 100 percent wrong. A containment is there for all to see."

— New York Times 19 May 1986

Meanwhile in Europe



Reactors in Europe: note how many are on or near borders.

Cattenom is a new nuclear power station being built in Eastern France. Across the border are Luxembourg and the populous German industrial area of the Saar. By 1990 Cattenom could be the largest single source of nuclear power in the world, with each of its four reactors larger than the Chernobyl reactor. The Prime Minister of the Saar, Mr Oskar Lafontaine, has written to President Mitterand of France urging him to halt the project. "If an accident were

to happen on the scale of Chernobyl" the Prime Minister told the Saar parliament, "the whole of the Saarland, Alsace, Lorraine and parts of the Rheinland would be uninhabitable forever."

The lack of confidence of the Prime Minister of the Saar stems from emergencies, such as at Three Mile Island and Chernobyl. They have done much to publicly expose the French and other governments which have willy nilly pushed ahead with nuclear power; experts have

been shown to be incompetent and ignorant in the face of emergency.

It seems to have made no difference whether the experts are communist or capitalist. At the height of the crisis at Three Mile Island in the United States confusion reigned among the nuclear experts and officials in charge. The State Governor wanted advice urgently on whether to evacuate people. But the image of people fleeing a reactor out of control was the last thing the nuclear industry wanted.

The Nuclear Regulatory Commission's chairperson, Joseph Hendrie, in charge of the emergency, bemoaned: "We are operating in the blind; his (the governor's) information is ambiguous, mine is non-existent. It's like a couple of blind men staggering around making decisions." By the time the Governor decided to evacuate children and pregnant women they had been exposed to radiation for two days. Because of the cursory monitoring, the exact level of radiation exposure will never be known.

The majority of Europeans were disturbed by the accident at Three Mile Island but then settled into an uneasy acceptance of their nuclear neighbours despite what the 'Greens' told them. But with Chernobyl they have been shocked into a realisation of the dangers of nuclear power, which will not easily go away. Up

until now the Soviet public has been kept in appalling ignorance of the dangers. For them the Ukrainian catastrophe has, for the first time, brought an awareness of nuclear dangers. For Ukrainians this has often come with personal or family tragedy. The fear engendered in people's minds is not likely to be smothered by the ideological posturing of their leaders.

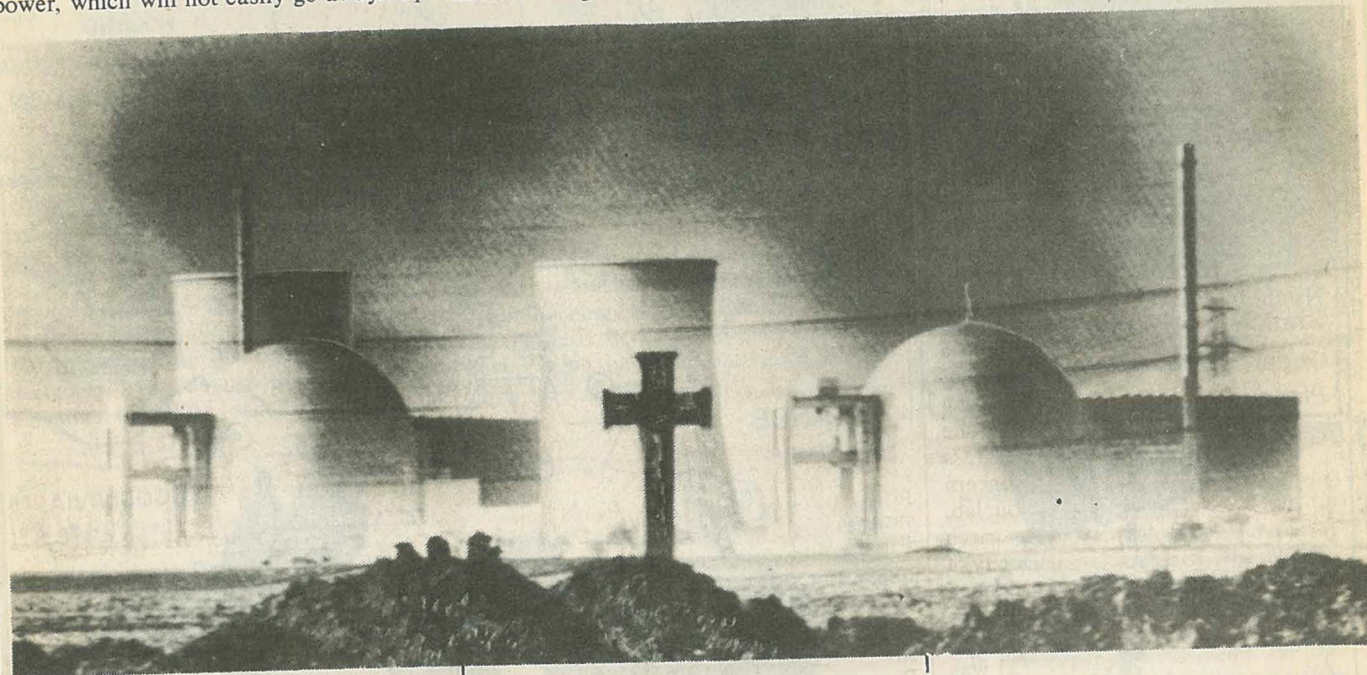
But environmentalists cannot simply adopt an 'I told you so' attitude towards the industry's difficulties and wait for it to die on its feet. Nations' nuclear industries are heavily backed by social democratic governments especially in Britain, France and West Germany and by governments in the State-managed economies of the Eastern bloc. The nuclear power industry is inextricably linked with the production of nuclear weapons or with the option for

nations to acquire the weapons in the future. That means powerful military influences exist to keep the nuclear power industry alive no matter the dangers.

The nuclear technocrats in both industry and government agencies (including the Australian Atomic Energy Commission) are already struggling to recover their public credibility and personal career prospects.

On the eve of Chernobyl the nuclear industry believed it had consolidated its base. Even in the United States, where nuclear power stations are privately owned and market forces moderate government backing, the industry was regaining some confidence as result of the setback of the Three Mile Island accident. However there were still very few reactor orders on its books.

After Chernobyl the nuclear industry again sees itself hanging by a thread. In one



A wayside cross silhouetted against the massive reactor at Biblis in West Germany. More than 55,000 residents wrote letters protesting against the reactor.

REACTORS ACROSS THE BORDER

"When Borselle (reactor) was built in the early 1970s I was very much against it, like nearly all the farmers," recalled Jan Kloet, the branch secretary of The South Zeeland Farmers' Association. "There'd been an accident in America, and we were afraid of getting radiation from a power station here. But the government said our plant would be better and

there was no reason for anxiety. When the plant was finished there were open days. I went along. After that my fear was reduced.

The government planned a second reactor but Kloet and his friends had got used to the idea and made no protest. The Saturday after Chernobyl a group of young environmentalists blocked the entrance to the Borselle reactor. A life-long voter for the Liberal Party, Holland's

main conservative party, Jan Kloet did not take part. They are not the sort of people he likes to be allied with. But he says: "There should be a general agreement to close all reactors down. Not just the one in Borselle, but the four across the border in Belgium, and the ones in England, because the wind can carry radioactivity from there as well."

— Jonathan Steele,
The Guardian.

industry publication it was said that "...Chernobyl has done more in one week to ruin progress made in assuaging public fears over nuclear safety than any accident since Three Mile Island...keeping nuclear plants out of the newspapers will remain our primary objective."

One proposal by governments and the nuclear industry in the wake of Chernobyl, put forward in both the East and West blocs, is to establish an 'early warning system'. This is a tacit acceptance of the likelihood of more 'Chernobyls'. We have yet to learn from the experts how people will know where to hide from the radioactive rain, which falls according to the vagaries of weather. Fallout shelters will inevitably become part of the strategy. Geiger counters will be needed in great numbers so that people will know where they are safe to stay and what is safe to eat. If the confusion which followed the accidents at Three Mile Island and Chernobyl is anything to go by then pity those who live in a congested city with a nuclear reactor as a neighbour.

The Chernobyl catastrophe has brought the world to the crossroads, where it must choose between the *hard nuclear path* and the *soft solar path*. It behoves the environmental movement to take up the cause of solar energy more vigorously than it has done so far.

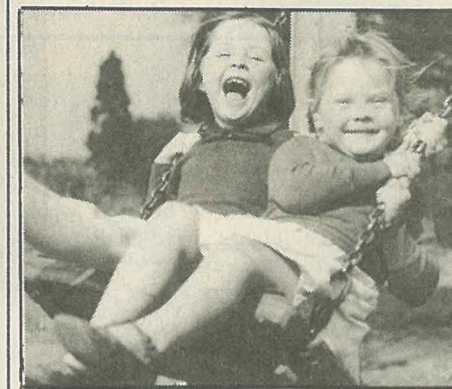
In early May, Dr Auril Arthur, a biochemist, took her geiger counter and went for a walk to enjoy the spring growth in a Munich park. As she watched the children playing in the grass she felt compelled to voice her concern through a letter to the paper: "...had our lab, where we used radioactivity for research been as heavily contaminated as the city of Munich this sunny May holiday (and much of Eastern Europe is worse) it would have been closed immediately". (4)

At the start of the fallout Iodine-131 was the major contributor to the radioactivity. This radioactivity presents a substantial risk of mostly non-fatal thyroid cancer and other thyroid ailments. For some, the cancer will be fatal. The children Dr Arthur was watching were more vulnerable than the adults around them.

The activity of the iodine became negligible after about 80 days. Cesium-137 and strontium-90 predominate among the remaining radioisotopes and these will

remain radioactive for about 300 years. The cesium is absorbed like potassium to eventually lodge in the muscles of people's bodies. Strontium-90 behaves like calcium in the food chain and lodges in the bone, where it irradiates the bone marrow. A consequence can be leukemia. Again children are the most vulnerable. The strontium-90 finds its way into their growing bones. Children dying of leukemia will be one of the hidden tragedies of the accident concealed in the statistics.

No event in West Germany in the past 25 years — not even the building of the Berlin Wall, during the Cold War — has so worried people as the fallout from Chernobyl. People were frightened by radioactivity they could not smell, see or taste. Dr. Arthur and millions of other Europeans were advised not to drink fresh milk or eat leafy vegetables such as lettuce and spinach.



While people worried about how to protect themselves and their children from radioactive poisons, officials in the European Atomic Energy Community fought among themselves to have their nation's contaminated farm products exempted from any trade embargo, so as to save their farmers any financial hardship. People struggled in shops to buy the remaining safe food from almost empty shelves. Children were told to stay indoors at home and were given stable iodine tablets to counteract the harmful effects of radioactive iodine on their thyroids. Pregnant women aborted rather than risk bearing children with deformities. In Poland people were warned against radioactive milk but then sometimes were forced to serve it to children because there was no other.

Western governments were torn between wanting to use the Chernobyl disaster for their own cold-war propaganda, by saying that it could only happen in a communist country and wanting to dampen the rising concern about nuclear power generally. When a second rise in radioactivity occurred in Bavaria it was at first blamed on a second disaster at Chernobyl, only to be traced by an ecological group to a discharge from Bavaria's newest reactor at Bruensbeutell.

Europeans were not as gullible as the authorities had hoped. They knew of the West's own disasters. The confusion in the minds of officials was all too evident from their contradictory warnings and reassurances issued about the health effects of low-level radiation. What these officials were trying to avoid above all else was public concern focussing on the routine discharges from their own nuclear industries. Out of distrust for what they saw as an undue influence by the nuclear industry on their national radiation protection authorities, people in Britain and Europe turned to Friends of the Earth, the 'Greens' and other community environmental groups for advice about the Chernobyl fallout and also local sources of radioactive contamination.

The most immediate issue to many Europeans are the radioactive wastes discharging from normally functioning reactors. The Dutch draw much of their water from the Meuse River and they are worried about contamination from Belgium reactors. The new French nuclear power station at Cattenom, which will pollute the Moselle River, is worrying Luxembourg and Germany.

The Danes are worried by the Swedish reactor at Barsebaek only ten kilometres across the Baltic Sea from their capital, Copenhagen. Until Chernobyl the Irish Sea was the most radioactive region in the world as a result of the outpourings of the Sellafield reprocessing plant in Cumbria. After years of negotiation there is still no agreement among members of the European community about the location of plants or their radioactive releases, and no co-ordination on evacuation in case of an accident. For the nuclear technocrats the only brake has been the community anti-nuclear movements. In the Soviet Union even those are absent.

"... Chernobyl has done more in one week to ruin progress made in assuaging public fears over nuclear safety than any accident since Three Mile Island... keeping nuclear plants out of the newspapers will remain our primary objective."

How many deaths will the fallout bring?

Once nuclear officials had recovered from their state of shock they put on their confident expert face to correct the 'exaggerated' reports on Chernobyl's fallout. The experts talked about the permissible radiation levels set by radiation protection authorities. They neglected to say that 'permissible exposure' allows for a 'socially acceptable' number of cancers and genetic defects among the public. The public is not given any say in deciding what is 'socially acceptable'. Any radiation exposure, however small, involves some risk.

According to the little publicised report of the U.S. National Academy of Science (Biological Effects of Ionising Radiations Committee -1980) 719 people from a population of one million people exposed to a radiation dose of 1000 millirem will contract cancer over a 30 period. The permissible public exposure over a lifetime is set in some countries at an average 170 millirem per year or for any one year 500 millirem. Exposures of this magnitude can mean as many as 350 cancers in a year among a population of one million people. Some scientists, such as Dr Rosalie Bertell and Dr John Gofman, argue that the number of cancers must be estimated over a lifetime and from the time of exposure. Their estimates are higher. (See box)

The more conservative estimates of human damage caused by the Chernobyl accident, made by scientists who are independent of government radiation bodies, come to about 100,000 cancers and 30,000 genetic defects in later generations. On the other hand, another scientist, Dr John Gofman, has taken the most recent and detailed compilation of radiation doses in Europe and the Soviet Union, issued by the World Health Organisation, to arrive at a much higher estimate. He has calculated that the total will be 320,000 fatal and 300,000 non-fatal cancers and 13,000 leukemias, mostly fatal.

The cost for the Soviet people will be massive — it includes the loss of a power station commissioned only three years ago, the loss of life and care of the sick whose lives continue to hang by a thread, the delayed cancers, the relocation of displaced people and loss of electricity from closing other plants of the same design. Then there is the cost of entombing the reactor. Added to all are the enormous agricultural losses.

NUMBER OF RADIATION INDUCED CANCERS IN A POPULATION OF 1 MILLION PEOPLE EXPOSED TO A 1000 MILLIREM DOSE

United Nations Scientific Committee on the Effects of Atomic Radiation, (UNSCEAR 1977)	100
U.S. Academy of Science (BEIR III 1980) — 11 to 30 years after exposure	719
John Gofman, <i>Radiation & Health</i> (Sierra Club Press — 1981)	3,333-4,255
Rosalie Bertell (1982) — Lifetime cancers	549-1,648
From <i>Handbook for Estimating Health Effects from Exposure to Ionising Radiation</i> by Rosalie Bertell.	

Note: The last three entries are based on observed cancer induction rates for specific organs (e.g. thyroid). Also the 'official' estimates do not cover the whole lifetime even though a large number of cancers occur more than 40 years after exposure. The table illustrates how cancer induction estimates can be minimised. It also indicates the trend upwards of cancer estimates.

In the radiation ward

The scene in the Moscow hospital, where many of the highly irradiated power workers were taken, was described by a surgeon to be like 'in time of war'. That war could only really be the nuclear war waged on Japan in 1945. The Chernobyl power station accident emitted more radioactivity than the nuclear weapon explosion at Hiroshima or at any test site. The nearby areas will be more persistently radioactive than Hiroshima was in the aftermath of the explosion. Most of the deaths in Hiroshima came, not from the bomb's blast but from the effects of radiation sickness and cancer. And the death toll from radiation at Hiroshima continues to grow to this day. Chernobyl will leave the same tragic legacy.

Medical support teams world-wide have done much to prolong the life of the victims at Chernobyl. Even so we know from Hiroshima that the toll from *early radiation sickness syndrome* among power workers will continue to rise for months and even years.

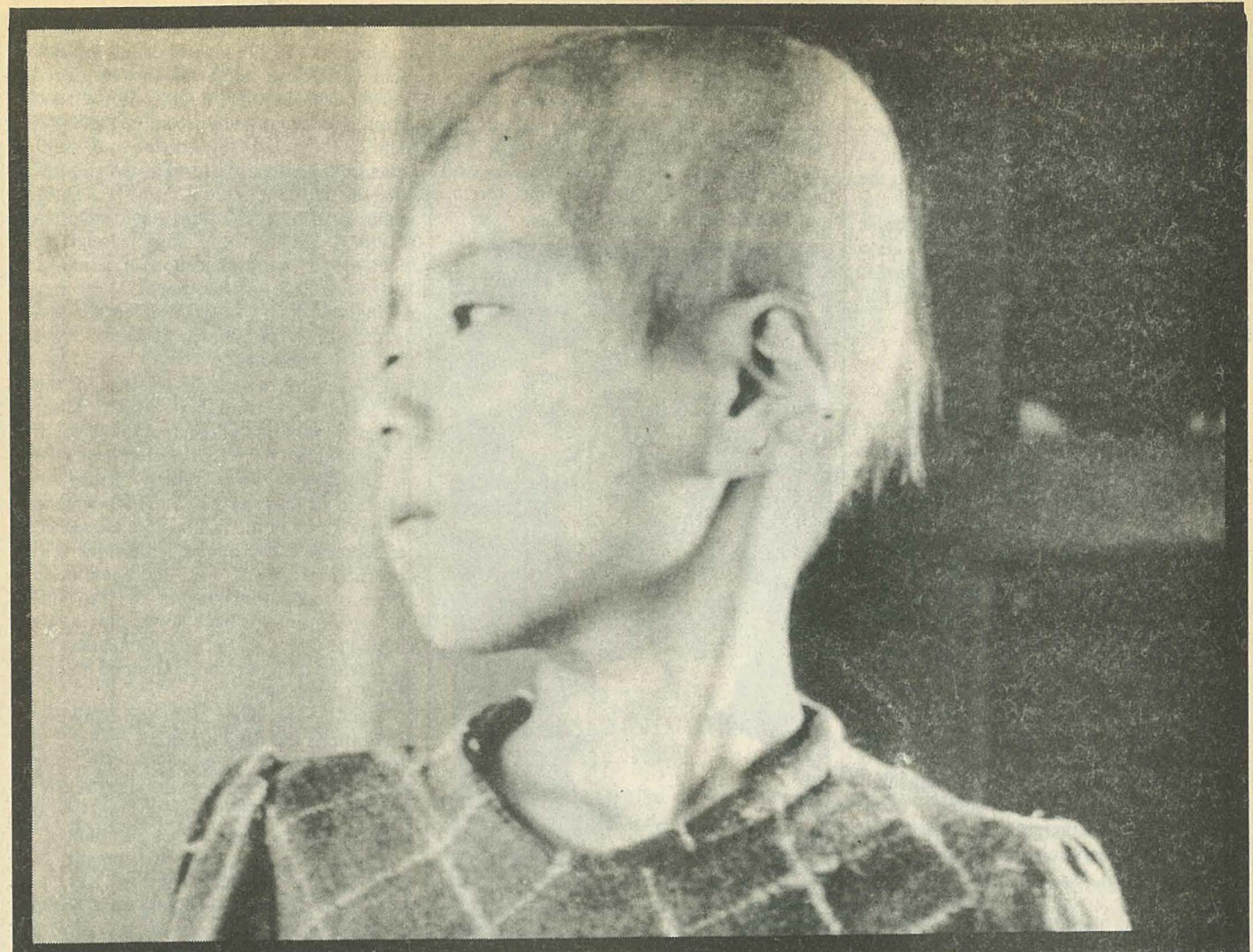
Many power workers had bone marrow damaged by heavy doses of radiation. The attempts to transplant bone marrow do not seem to have been generally successful. Bone marrow is involved with blood cell reproduction and when it is damaged the body loses its defences against disease. This leads to hemorrhages on the skin and ulceration. Death may come later from attack by some disease; the initial cause, *the radiation which made the body vulnerable, may escape blame and so too the nuclear source.*

The membranes of the nervous system, the gut and other body organs are disintegrated by high radiation doses. The outward appearance may not show this for quite some time.

Radiation burns to the skin are proving to be proportionately higher at Chernobyl than at Hiroshima. This reflects the nature of the radiation. At Hiroshima exposure was almost entirely from neutrons and gamma-radiation, though it is now realised that the latter caused most of the radiation injuries. These radiations are highly penetrating. At Chernobyl workers were exposed to a great number of radioactive fission products, some very short-lived but fiercely radioactive while they exist. These give off mostly beta- and gamma-radiation. The beta-radiation penetrates only below the skin but can cause vicious skin lesions and ulcerations.



A young man from Hiroshima shows skin ulcers caused by radiation exposure. The Soviet Union has not released pictures of its own victims, perhaps because they would cause a backlash against the nuclear program.



EARLY RADIATION SICKNESS SYNDROME

— AT HIROSHIMA

"My daughter had no burns and only minor external wounds. She was quite alright for awhile. But four weeks [after the atomic explosion] she suddenly became sick. Spots came out all over her body. Her hair began to fall out. She vomited clumps of blood many times ... I felt this was a strange and horrible disease. We were all afraid of it and even the doctor did not know what it was. Then after ten days of agony and torture she died ... I thought it was a very cruel way for my daughter ... to be killed"

— quoted in *Robert Openheimer — Shatterer of Worlds* by P. Goodchild.

— AT CHERNOBYL

"He was already showing the early signs of severe radiation exposure. His injuries were the worst of all, and his suffering grew from one day to the next. In his mouth and on his face were large black herpes simplex blisters, often the first symptoms of exposure. His skin literally broke down before our eyes. First the sensitive folds around the groin and under the armpits became red and ulcerated. Slowly these ulcers spread across his entire body.

"In a matter of days, he was covered with red, weeping skin burns. He was barely recognisable towards the end. We administered morphine, constantly increasing the dose but that did little to ease his misery.

"The membranes that lined his intestines had eroded and he suffered severe bloody diarrhoea. He died about 12 days after the explosion."

— Dr. Richard Champlin, bone marrow specialist, who treated Chernobyl victims at the Moscow Hospital,

Age, 12 July, 1986.

For many years the Hibakusha — the survivors from the A-bombs dropped on Japan — have served as human guinea pigs for studies on the effects of radiation. There is now a growing curiosity among experts as they prepare to extend their studies to the unfortunate Chernobyl workers and the thousands living in nearby towns. Studies on these people will now add to the data gained from studies of the Hibakusha. However behind the impersonal studies will be people living and dying.

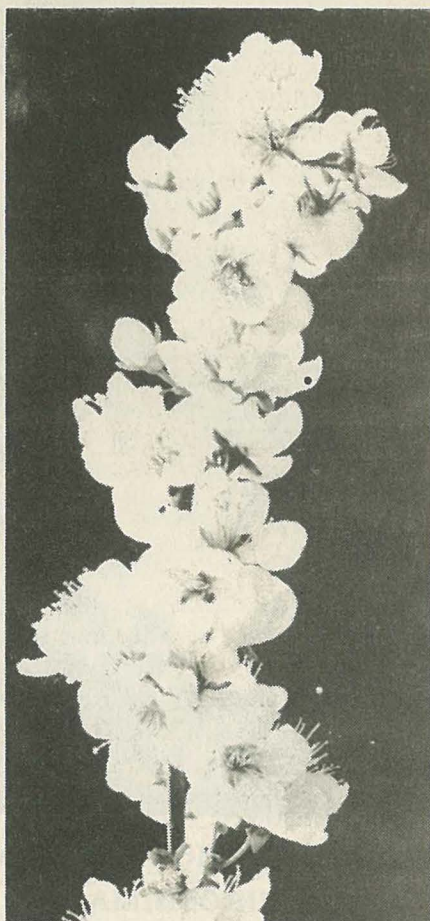
A ghost town

A hundred thousand Ukrainians were ordered to evacuate leaving behind their homes and belongings. Most of these people cannot return for an indefinite time, some possibly not in their lifetime. Even weeks after the disaster villages in Byelorussia, 150 kilometres to the north of Chernobyl, were still being abandoned and livestock removed. This involved the uprooting of another 80,000 adults and children. Yet beyond the immediate region, which was blackened by ash, the countryside, the garden and breadbasket of the Soviet Union, remained tantalisingly serene and fertile in the early summer sun as people fled for their lives. The power station's nearest neighbour, the service town of Pripyat, became a ghost town. The people in the town were saved from still higher fallout, than they actually received, by the upward rush of gases, which carried much of the debris high into the sky, where it was carried off by winds. The administrative town of Chernobyl, which has given its name to the world's greatest catastrophe in civil technology, also became a ghost town.

Months later the towns' surroundings looked normal. Apartments looked used but were empty. Schoolroom blackboards had unfinished lessons written on them. Washing hanging on lines waved in the breeze. The streets' flowerbeds bloomed colourfully and the bunting for the May-day celebration, that never happened, remained strung along the streets. But the people were all missing. It was as though every single soul had gone off into the country and had failed to return. Only the radiation meters told why.

"Collective farmers, two months after the accident, were sent in short shifts within 20 kilometres of the reactor to plant potatoes, staying only long enough to receive their 'permissible' dose of radiation."

Up to 20 kilometres away from the destroyed reactor plastic has been sprayed over the ground to prevent the contaminated soil from blowing away. But the top soil will have eventually to be scooped up otherwise the long-lived radioactives cesium and strontium will substitute in crops for the nutrients calcium and potassium.



ONLY RADIATION COUNTERS TELL THE FULL STORY

"The cherries and apples were in bloom but the town of Pripyat was dead. It was difficult to grasp".

— Dr. Leonid Illyin, Soviet specialist who treated early radiation victims

— *The Australian*,
2 June, 1986

How far will Soviet authorities go with clean-up before some of the displaced persons are returned to their homes and farms? How many additional cancers will their 'safe' exposure levels mean in 20 or 30 years time? Collective farmers, two months after the accident, were sent in short shifts within 20 kilometres of the reactor to plant potatoes, staying only long enough to receive their 'permissible' dose of radiation. Why were these farmers sent in? Were they risking their lives just so the scientific data on the potato crop could be gathered? Were they told of the risk?

For several days after the start of the accident it was business as usual in Kiev. Yet only a hundred kilometres to the south — the distance from Sydney to Newcastle — firefighters were falling victim to radiation sickness as they fought the raging inferno. Little of the radioactive cloud had yet reached Kiev. Soviet authorities told departing foreigners, who had been made aware of radiation dangers by the anti-nuclear movements back home, that it was nothing to worry about. Political leaders on the rostrum fostered a holiday mood among May day marchers.

Then a few days after the May-day celebrations the wind direction changed to blow over Pripyat towards Kiev. The calm dissipated and panic swept through the city. People fought to send their children off on Moscow-bound trains, buses and planes.

Authorities now exhorted people to battle against 'our enemy the dust'. Several times each day the pavements were hosed and the walls of buildings were doused with water. Washing clothes became a constant occupation of Kiev citizens. Wet rags were hung at the entrance to apartments and public buildings for people to wipe the poisonous dust from their shoes before they entered.

Newspapers devoted attention to what people might 'safely' eat. Stall-holders in food markets had first to have the produce from their farms checked by officials with geiger counters for radiation. If radiation went above a certain level, the food was rejected. If approved they were given a document of approval to display. Stall-holders attracted their customers with calls of "All Checked. All Checked". Nonetheless people washed the vegetables they bought with water from a hose at the market. The water was collected in a tub. But to where would the tub's contaminated water

be taken?

"If we don't eat we die" said the farmers, and so they and their families ate and drank unchecked food.

Official secrets, East and West

The nuclear establishments in the East and West blocs have much in common. Though official secrecy in nuclear matters may be more impenetrable in the Soviet Union than elsewhere, it is symptomatic of all national nuclear establishments. The slanging match between the two blocs regarding their respective nuclear technologies puts up a smokescreen over the common interest in protecting their countries' nuclear industries against growing world-wide opposition.

An example of secrecy in the West concerns the reactor fire at Sellafield (once Windscale) in 1957. Twenty three years later, when it was no longer possible to conceal the truth because of the work of an independent scientist, British authorities made known their estimate that it had caused 300 fatal and non-fatal cancers. Independent estimates put the figure much higher.

At times Western authorities have been prepared to cover-up Soviet accidents for the sake of the survival of the nuclear industry. In 1957, an explosion in a waste storage at Kyshtym in the Urals made a vast area so radioactive that whole towns and villages were abandoned and their names erased from the map. Silence surrounded this tragedy until emigre Russian scientist, Zhores Medvedev, 20 years later wrote about it in a British journal. The Head of the British Atomic Energy Authority, derided what Medvedev said as 'a figment of the imagination', because they did not want the dangers of radioactive waste dumps to become public knowledge.

In the United States, at the Oak Ridge Nuclear Research Laboratories, calculations on the Soviet accident, based on CIA intelligence, were kept secret until Medvedev made it known publicly.

During the Chernobyl crisis, the chairperson of the Australian Atomic Energy Commission sought to protect the reputation of his Soviet counterparts then in desperate difficulties with their burning reactor. He accused the media of grossly overstating the dangers, and advised that Australians should accept on trust the Soviet authorities' accounts of the accident, which turned out to be gross understatements.



KIEV WITHOUT THE SOUND OF CHILDREN

There are practically no children left in Kiev, a city which normally has a population of over two million. Most were sent away in the first weeks after the accident at Chernobyl nuclear reactor, 130 kilometres away.

Without children the city seems strangely calm. Playgrounds are empty and pedestrian traffic under Kiev's famous chestnut

trees is curiously one size.

Viktor Ivanovitch sent his small son off in that first wave in early May, to relatives in the far west of the Ukraine. Last week the little boy caught flu and returned. But his father, a young professional, is planning to send the boy off again. "The doctors recommend it" he said. "The consequences from Chernobyl are just not known."

— Celestine Bohlen,
The Age,
10 June, 1986.

The Australian Atomic Energy Commission has directed much of its research towards uranium mining and to solving the nuclear industry's problems, such as high-level waste disposal. This can only be because it sees its research efforts as contributing to the viability of the world's nuclear industry and consequently to maintaining Australia's uranium market. Much Australian uranium consigned to European countries first goes through Soviet enrichment plants and gets mixed with Soviet uranium. Australian uranium could have been in the destroyed Chernobyl reactor. The nuclear business, as Patrick White says, is one cosy club.

International recommendations for 'permissible' radiation exposure have been

increasingly dominated by nuclear scientists from nuclear establishments in the U.S.A., U.K. and the U.S.S.R. who have a vested interest in seeing that the nuclear industry is not jeopardised by too stringent standards. On the other hand from about 1970 the influence of scientists from the biological and medical disciplines has declined. The Australian Ionising Radiation Advisory Council and the Australian Radiation Laboratory put forward the international recommendations on radiation exposures as an objective basis for setting standards for exposure in the uranium and other industries. Nothing is said about how these recommendations have been strongly influenced by scientists with personal interests in the nuclear industry.

USSR: undercurrents of dissent

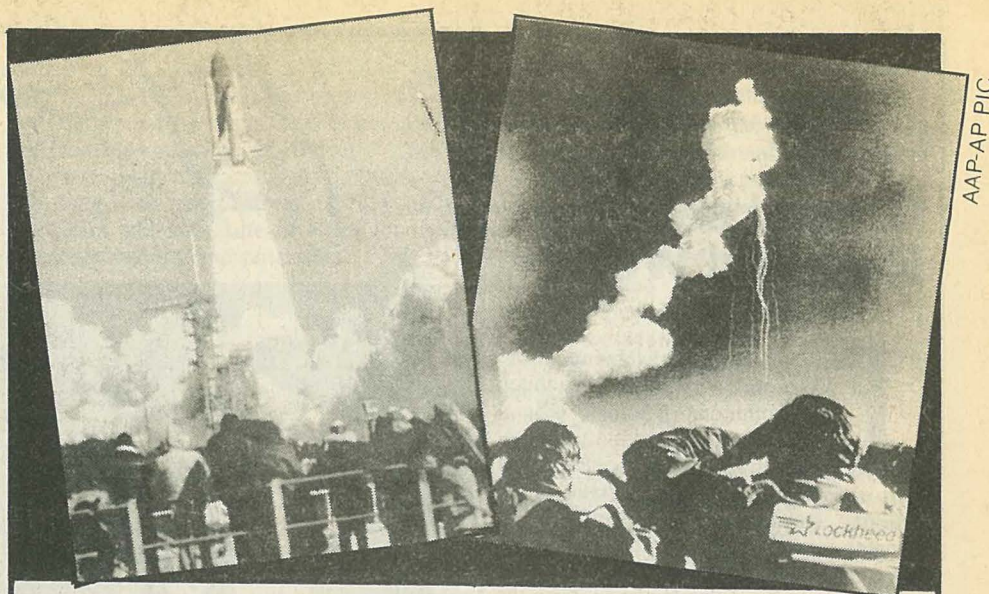
Though public debate on the nuclear power issue has been lacking in the Soviet Union it has, at times, raised its head in professional circles. Andrei Sakharov, in 1958, added his voice to Linus Pauling's, in the United States, to call world attention to health and genetic dangers posed by radioactive fallout from nuclear weapons explosions. It was the first world alert from leading scientists to radiation dangers from a nuclear source.

Peter Kapitza, a founder of Soviet nuclear science spoke out about the dangers in 1976.⁵ Kapitza had been among the nuclear pioneers working, in the 1920s, with Sir Ernest Rutherford at Cambridge. He has been described as the father of the Soviet atomic bomb, but in fact Kapitza had refused to work on the bomb project. He proposed that nuclear plants be put on remote islands. Though his suggestion was rejected by Soviet authorities it is inconceivable that anyone with Kapitza's reputation would be totally ignored in Soviet scientific circles.

In the October 1979 (the same year as the Three Mile Island accident) issue of the theoretical journal *Kommunist* two energy specialists expressed the view that the safety and economics of nuclear power were unresolved. However this questioning of the safety and worth of nuclear power brought forth a damning rebuttal from the Soviet Academy of Sciences. It was this rebuttal, not the original questioning of nuclear power, that was widely publicised by pro-nuclear elements in the West.

Hopefully this suppressed professional debate in the Soviet Union on the nuclear issue will be reawakened and an effort should be made by like-minded anti-nuclear professionals in the West to join forces. Soviet ecologists have previously sought support from ecologists in the West on other issues such as the campaign to save Lake Baikal. More recently the diversion of the Siberian north-flowing river system became an international ecological issue.

There is a growing non-government exchange between medical, scientific and other professions from East and West on the problem of nuclear disarmament. Western representatives at such non-government nuclear disarmament meetings have long been exposed to a widespread public concern in their own countries about nuclear power because of its threat to the ecology and its inextricable links with nuclear weapons.



AAP-AP PIC

THE TECHNOLOGICAL WIZARDS

"It is no longer feasible for ruling elites to employ experts persuading the public that their policies are beneficial, correct, inevitable and also safe. The Chernobyl/Challenger (the rocket disaster at Cape Canaveral) Syndrome amounts to a mortal blow at the scientific foundation for the legitimacy of the modern mega-technological state. We have been witnessing a growing concern about the powers of science and scientists and their

perceived immunity from social and ethical accountability (as in biological engineering)...

"Our previous fears that the grand technocratic projects might work, taking society along unacknowledged paths, are now compounded by the new fears that they might not work, with a multitude of catastrophic consequences."

— J. Ravetz,
S. Macgill & S. Funtowiz,
The Guardian
19 May, 1980.

It is incumbent upon representatives from Australia to such conferences to acknowledge this genuine concern among their own people and to voice it in international forums. They can do this in the knowledge that these concerns, even if muted by political pressures, are shared across the ideological barriers.

So much pain for so little gain

All the travail and suffering of the accident at Chernobyl is unnecessary because nuclear power is not needed to run the Soviet economy. Nuclear power stations represent 13 per cent of the electricity generating capacity of the Soviet Union. But an industrial economy uses only about 10 per cent of its energy in the form of electricity. That means nuclear power satisfies less than 2 per cent of the Soviet's total energy demand. It is a trifling gain for

the enormous risk being taken.

Even before Chernobyl the nuclear industry was being described as being 'like a patient with a chronic disease, which has been ailing for a decade'. In the U.S.A. no electricity utility has placed an order for a new reactor since 1978; many orders have been cancelled. The costs of nuclear electricity have sky-rocketed and now exceed coal-generated electricity by 80% because of the expensive modifications needed to try and improve safety. The partners in the Roxby Downs venture have claimed that they will have a market for their uranium in the 1990s, when they expect that the nuclear power industry will begin to grow again. Chernobyl has dashed that hope. It does not make economic sense for the South Australian Labor government to pour \$50 million into the infrastructure of the Roxby venture with no likelihood of ever recovering a cent of it. Continued support for uranium mining in the ALP would show that the party submits to the lobbying by mining interests.

"an industrial economy uses only about 10 per cent of its energy in the form of electricity. That means nuclear power satisfies less than 2 per cent of the Soviet's total energy demand. It is a trifling gain for the enormous risk being taken."

Perhaps one of the side-effects of Chernobyl will be a boost to energy conservation practices and alternative energy systems.

In recent years conservation has greatly reduced the demand for energy. It has been estimated by a U.N. study group that conservation of energy could cut industry's energy demand in the industrialised world by 30 per cent by the year 2000. These projections are based on the experience of the European Economic Community, which between 1973 and 1978 generated 95 per cent of its extra energy output from greater energy efficiency and not from additional fuels. Conservation programs, which are being promoted by power companies are likely to eliminate the energy equivalent of 30 large nuclear reactors by 1992.

Solar power, despite only meagre government support compared to the uranium and nuclear industries, is beginning to demonstrate its worth in several areas.

In the southern states of Australia, up to 60 per cent of hot water for household and factory use can be obtained from solar collectors. In the far north it is as much as 90 per cent. Recently a solar hot water system was designed in Australia for sub-zero conditions and according to the developer "it is poised to secure a substantial market in Japan."⁽⁶⁾ Both in Australia and in California the efficiency of photo voltaic cells to generate electricity has been improved to a point where they can now compete with conventional power stations.

Australia has the opportunity to develop alternative energy sources which will complement conservation of energy. At Esperance in Western Australia work is underway on a wind generating complex. It has been estimated that wind generators along the coast of South Australia could supply 20 per cent of the State's electricity. California is the pace-setter in the use of windpower. Wind generators are supplying over 1000 megawatt of electricity to California's grid system, more than the electricity output of one large reactor and achieved at a fraction of the capital cost.

To some degree all energy sources are polluting though nuclear power is foremost in its threat to the environment. Energy conservation must become the key to all

future energy strategies. Much can be done to reduce the acid rain from fossil fuels. Newer methods of generating electricity from coal can greatly reduce pollution while increasing the energy efficiency. The application of these methods to burning fossil fuels will help protect the environment and give us time while the world's industrial economies are geared to renewable sources of energy.

By turning to solar energy we will free the world from radioactive pollution, acid rain and the 'greenhouse' effect.

All that is required is the political will to make these choices. Chernobyl hopefully will strengthen the determination of many to take to the soft solar path and clarify their vision for a peaceful nuclear-free world.

To stop it ever happening again . . .

"We all live on Three Mile Island" was a widely expressed feeling after the reactor accident there in 1979. Now our fears of world-wide radioactive contamination are more appropriately identified with the name of Chernobyl.

It is now up to the proponents of nuclear power to explain what benefits could possibly outweigh the extreme long-term risks to life on our planet. The tragedy of Chernobyl has re-focused attention on the dangers associated with the whole nuclear fuel cycle. At every stage — uranium mining, enrichment, the nuclear reactor, re-processing for plutonium and storage of the

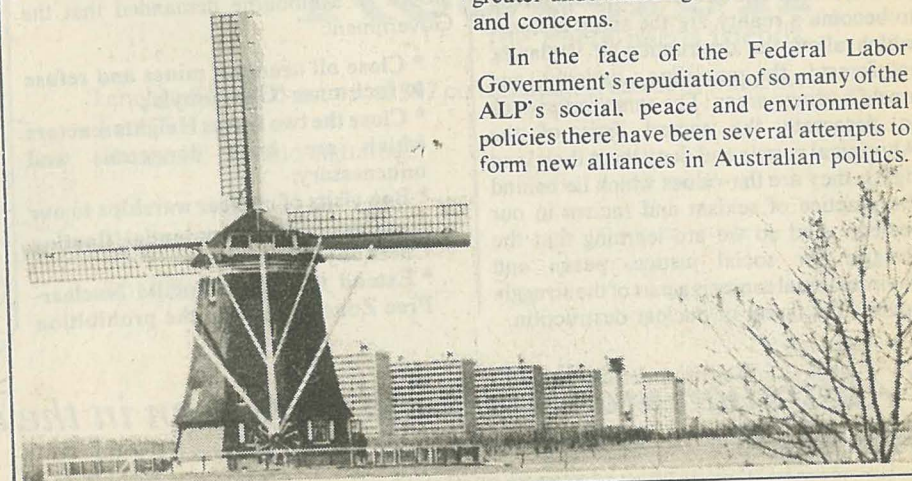
waste — the health of workers is being damaged, the environment polluted and in the longer-term the whole community endangered by radioactive poisons.

The nuclear industry has been little more than a 'front' for many nations to develop nuclear weapons. India, Israel and South Africa have used their nuclear power facilities to develop nuclear weapons. Pakistan, Iran, Brazil, Argentina and South Korea have all expressed their intention to take up the nuclear weapons option if they see it in their national interest to do so. A number of nations have not signed the Non-Proliferation Treaty. In any case that treaty means very little since it allows a signatory nation to withdraw from its requirements upon three months notice.

We cannot have nuclear power without continuing the spread of nuclear weapons. The opposite is just as true: nuclear weapons require a continuance of nuclear power for technical, economic and political reasons. To halt the nuclear weapons race we must eliminate nuclear power.

Nuclear proliferation and radioactive pollution from accidents and wastes are the inevitable end products of Australia's uranium mining and export from the Ranger mine and the Roxby mine if it is developed. While the world stays on the nuclear path we face the prospect of extinction through either nuclear weapons holocaust or a slow poisoning of the global environment. The responses to Chernobyl in Australia have shown that the anti-nuclear issue has the power to unite the peace and environmental movements through a greater understanding of each other's aims and concerns.

In the face of the Federal Labor Government's repudiation of so many of the ALP's social, peace and environmental policies there have been several attempts to form new alliances in Australian politics.



Chernobyl 13

The 'Getting Together' conference organised by environmental groups and the 'Broad Left' conference organised within the political left, which were held in Sydney earlier this year, both talked of such coalitions. The formation of a 'green' party is mooted repeatedly. Some Democrats have sought to develop policies, which would ultimately turn it into a 'green' party.

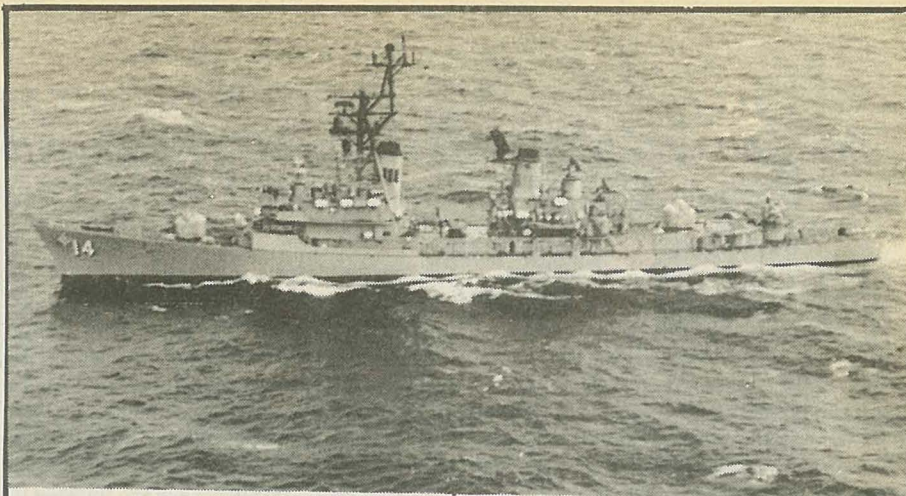
"What the present requires is a considered and articulate commitment to an ecological and socialist vision of Australian politics, and the development of new networks of alliance and cooperation between presently disparate oppositional groups" wrote Richard Tanter in the February issue of *Peace Studies*. "... What is needed is a renewed commitment to spelling out a radical vision and demonstrating the relevance of this alternative to these separate struggles"

Some have chosen to work with established political parties, either inside their forums or by exerting pressure from outside. Others argue that, while political parties may at times be allies, they should not be the main focus of the anti-nuclear movement. If it becomes too closely allied to any one party, the movement can have its aims distorted by what matters for electoral success.

The broad coalitions taking shape as a result of the Chernobyl disaster represent a renewed awareness of pending ecological catastrophe. It is important that they concentrate their energies out in the broader community and not in more closed circles of the committed. The way they work should reflect the generally felt need for more personal participation and a growing appreciation that the aims of the social, environmental and peace groupings are inextricably linked; that in order to advance significantly on any one front we need to bring about basic changes in the structures and values of our society.

The short-term thinking and exploitative values, which allowed the nuclear industry to become a reality are the same as those which allow the destruction of wetlands, rainforests, the coastline, national and world heritage areas. The same forces seek to desecrate the sacred sites of the Aboriginal people and deny them their land rights; they are the values which lie behind the practice of sexism and racism in our society. And so we are learning that the struggle for social justice, peace and environmental sanity is a part of the struggle against the threat of nuclear destruction.

"Australian uranium could have been in the destroyed Chernobyl reactor."



USS Buchanan, the ship that sparked off the ANZUS dispute.

FLOATING CHERNOBYL

The wake of Chernobyl will spread much further than the nuclear industry on land. Nuclear reactors are also used to power warships and submarines. The prospect of a floating 'Chernobyl' looms on the high seas and in our ports. U.S. aircraft carriers, which has visited Stirling in Western Australia sometimes have nuclear reactors with a

capacity half that of Chernobyl. Naval reactors have very little in the way of a protective containment. The U.S. navy has documented well over 30 accidents involving the release of radioactive contaminants in coastal waters.

A reactor accident in a naval vessel berthed within city precincts would bring unimaginable havoc as people tried to escape the radioactive fallout.

The tenuous grip the global population now has on survival has been clearly demonstrated at Chernobyl. How obvious does it need to be before governments act. From their responses so far it is evident that they will act to stop the nuclear madness only when people cry out to stop it.

Following the Chernobyl disaster, a coalition of peace and environmental groups in Melbourne demanded that the Government:

- * Close all uranium mines and refuse to fuel more 'Chernobyls';
- * Close the two Lucas Heights reactors which are both dangerous and unnecessary;
- * Ban visits of nuclear warships to our ports since they are potential 'floating Chernobyls';
- * Extend the South Pacific Nuclear-Free Zone to include the prohibition

of nuclear-powered reactors on land and sea.

References

1. *The Age*, 1 May, 1986.
2. E. Sierglass, *Secret Fallout*, pp. 719-21, McGraw Hill Book Co., Sydney, 1981. Available Friends of the Earth Collingwood, Victoria.
3. *Nucleonics Week*, 8 May, 1986.
4. *Guardian Weekly*, May, 1986.
5. *New Scientist*, 14 Oct, 1976.
6. *The Australian*, 24 May, 1985.

The booklet was written by Les Dalton, Larry Marshall, Glen Foard and Gareth Clayton, all members of MAUM Melbourne.

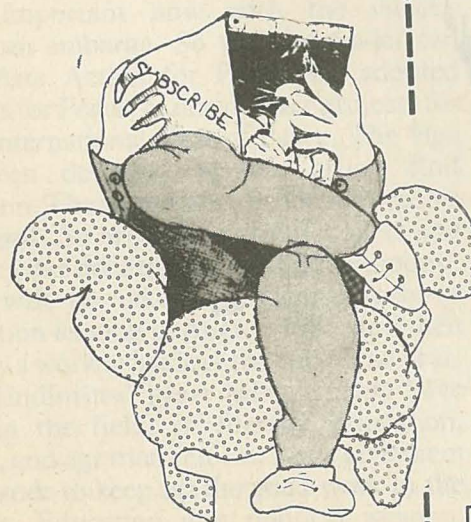
Cover Arne Hanna.
Produced by Chain Reaction.

"On the basis of the industry's record so far, and with 300 nuclear reactors operating worldwide, the likelihood is that a nuclear disaster could occur as frequently as once every seven years."

THE ECOLOGICAL & PEACE MOVEMENTS

"Reaffirming opposition to uranium mining, renewing links with the Aboriginal struggle for land rights and strengthening the links between the ecological and peace movements will benefit each and provide greater political resources for the disarmament movement ... [Uranium mining] has had a central place in Australian politics over the past ten years. In less than five years in the mid-1970s, the issue grew from being invisible to one of the two or three most important in the decade. Nowhere else in the world did the environment movement have such impact on uranium mining."

— Richard Tanter,
Peace Studies,
February, 1986.



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Pencils for Peace

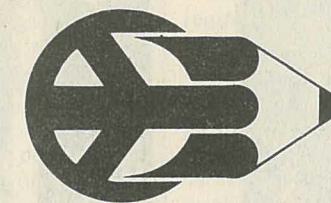
It has been said that Nicaragua fights on five fronts. The first and main front is the military one. This small, impoverished country is showing its enormous capacity for survival. The Contras, led by the remnants of the Somoza dictatorship's National Guard, have been driven back to the Honduran border. On the Costa Rican border, Eden Pastora's small group of counter-revolutionaries have thrown in the towel.

On the political front, diplomatic activity never ceases to strive for peace in Central America, to expose the Reagan administration as being opposed to peace and to find agreement with the Contadora nations — Mexico, Panama, Colombia, Venezuela, and the Contadora support group — Argentina, Brazil, Peru, Uruguay — on the mechanism to establish peace.

On the economic front, it is the struggle to feed the people. The peasants can endure incredible shortages of goods, but if the people can be fed, the revolution will survive. **ECONOMICS = BEANS + RICE**. As Daniel Ortega, the Nicaraguan president has said, Nicaragua is not on a subsistence economy but on a survival economy.

The fourth front is Church-State relationships. The Sandinistas say the church problem is not one of government versus church, it is a problem within the church; nevertheless, it is a serious problem. The orthodox, hierarchical church, led by the Archbishop of Managua, Cardinal Obando of Bravo, a virtual supporter of the Contras is still powerful in the towns. Then there is the arm of the church, called liberation theology, the church of the poor. This is a powerful factor in Latin America, starting from the 1960s, strongest in Brazil, and strong in Nicaragua, reinforced by the three wonderful priests on the Sandinista government — Miguel D'Escoto, Ernesto Cardenal and Fernando Cardenal.

Finally we have the fifth front, that of overseas support, international solidarity. This is one front on which Nicaragua cannot fight, this is where we participate. It is even more important now with the vicious American embargo. So you the reader can help. Arts Action for Peace has adopted 'Pencils for Peace' as one of their projects for 1986 International Year of Peace. The logo has been designed by the artist, Rolf Heimann. The pencil as a weapon for peace is the theme. So organise a group, collect and send in your donations of writing 'weapons'. They will be taken to Nicaragua by a delegation leaving in August 1986, and then later by a work brigade at the end of the year. The Sandinistas' great achievements have been in the fields of literacy, education, health, and agrarian reform. Let's give them the chance to keep up the good work in the schools. Education is a political weapon, against foreign domination and for freedom.



PENCILS FOR PEACE

Nicaragua 1986

We are appealing for writing materials — pens, pencils, crayons, pastels, chalk, etc., new or used — to assist the education program of the Sandinista Government of Nicaragua.

These materials are urgently needed because of the war against the Contras which is diverting money from the education program.

We have the means of distributing the writing material directly to the source of greatest need, i.e., into the kids' hands. We urge everyone to support this project which will help further the education of people in a country fighting for its very survival.

Pencils for Peace is a project of A.C.C. *Tools for Peace Campaign*. Please send your materials and/or donations, no matter how small, to:

Materials: A. King, 5/33 McLean St., West Brunswick 3055, or
Donations: Australian Council of Churches, Box C199, Clarence St. Post Office, Sydney 2000 (tax deductible).

Fight for the Shannon



Karri forest in the Shannon Basin.

The Shannon River is at the centre of a struggle to protect the awe-inspiring forests of its basin from clear-felling. Despite the halting of logging in 1983, the decade long battle to save the Shannon Basin continues. The pressure to allow timber cutting is intense. To date the West Australian government has not fulfilled its promise to declare the Shannon-D'Entrecasteaux region a national park. **John Renshaw** reports.

IN 1976, a review committee which included several foresters who wanted the Shannon River basin to be made available for intensive wood production, rejected a proposal put forward by the Conservation Through Reserves Committee that no clear-felling be permitted in the area during the fifteen year licence period of the 1974 Woodchipping Industry Agreement. The Conservation Through Reserves Committee also recommended that towards the end of this period a substantial area of the wet sclerophyll forest in the basin should be set aside and conserved in perpetuity as natural forest.¹

In 1983 the State Labor government was elected with a policy of declaring the Shannon Basin a national park. It instructed the then Department of Forests to manage the basin as though it was a national park and to terminate logging in the area. A detailed management plan is presently being drawn up by the Department of Conservation and Land Management (CALM), a draft of which has been released.²

John Renshaw is an active member of the Campaign to Save Native Forests.

FOREST THREATENED



However, despite great opposition, clear-felling has proceeded in the area since the park was first proposed.³ At present about three quarters of the approximately 22 000 hectares of karri forest and extensive areas of jarrah forest remains in an unlogged state. But the Shannon's present status as only a management priority area for the conservation of flora and fauna affords the forests little security. An ominous warning in the draft management plan is that the area is only referred to as a forest park. This demonstrates that there continues to be pressure from foresters within the Conservation and Land Management Department to prevent the basin being given secure long-term protection as a national park.

The 60 000 hectares of the Shannon River Basin contain a substantial area of karri and jarrah forest of great beauty and uniqueness. Compared to other river basins in the karri forest region, the Shannon is relatively undisturbed and could serve as a benchmark with which to scientifically compare the effects of large scale forestry on the flora, fauna and water systems in other forests. The pure stands of karri and jarrah and the mixed stands of karri and marri are interspersed, especially in the lower reaches, by heath, scrub and rock communities, to form a complex ecosystem of karri forest types not adequately represented in current reserves. The Shannon River National Park would protect a large area of this karri forest within a continuous tract of land. This would maximise the chance for survival of the natural karri forest ecosystem as an evolving entity in perpetuity.

The present national parks within the main karri belt are too small, both from an ecological and a tourist perspective. Only about 4% of the karri forest in the main belt is in national parks. Ecologists have stated that it is preferable to have an area of at least 20 000 hectares to ensure adequate conservation of flora and fauna. The Shannon thus represents the most important of the series of karri forest reserves proposed by forest conservation groups in 1982. Together with important

proposed additions to the Warren, Beedelup and Walpole-Nornalup National Parks and an improved management priority system, the Shannon forms part of what would be a much better system of karri forest reserves.⁴

THE proposed Shannon-D'Entrecasteaux National Park would provide for a wide range of recreational activities. In South Western Australia there is no park or reserve that encompasses an entire river basin, least of all one as beautiful and relatively undisturbed as the Shannon.⁵ Recreationists, from day trippers to wilderness seekers, could experience a large diversity of experiences and scenery ranging from high virgin forest to scrubby heath and beautiful river pools. One of the important reasons for protecting the Shannon and D'Entrecasteaux areas is to protect the virtually pristine condition of Broke Inlet. Such a reserve would become a tourist asset of international and national importance with far greater earning potential than its timber resource.

The old Shannon town and mill site has been redeveloped and outstanding recreation facilities have been provided at this site. It is heartening to note that good steps towards promoting the Shannon have been taken by the government. This could be developed one step further. At many of New Zealand's tourist spots, for example, there are education centres for tourists, school groups etc. These tourist centres have interpretation and historical displays and are staffed by rangers who are available to answer questions and to lead field trips. Other such centres could be located at Pemberton which is the main focus for tourism in the Karri Forest Region.

Another use of the forest is bushwalking. The Campaign to Save Native Forests (CSNF) has recently published a detailed bushwalking book *Forests On Foot* which includes a walk in the Shannon Basin and several in the karri forests of the Manjimup shire. Bushwalking is an excellent way to intimately and actively experience the life

and beauty of the forest and it can be seen from the thousands of CSNF bushwalking books sold in only six months that there is a growing and strong demand for using the forests for this form of recreation.

The forests of the South West are very limited in area compared to the size of WA, but they form a part of one of the richest floristic regions in the world. In recognition of the outstanding attributes of the Shannon Basin, this area is now on the Register of the National Estate and thus forms part of Australia's recognised heritage. What is urgently needed is for the Shannon-D'Entrecasteaux area to be given adequate and secure parliamentary protection by being declared a National Park.

To help in the campaign to make this region a national park you can write to the Premier of Western Australia Brian Burke, the Minister for CALM, Barry Hodge and the Minister for the South West, Julian Grill c/- Parliament House, West Perth WA 6005 demanding that the area be declared a national park and that more funds be made available for national park management. You can also visit this magnificent forest for yourself or help by joining a forest conservation group and participating in its activities.

References

1. Report of the Conservation Through Reserves Committee, 1974.
2. *The Shannon Forest and D'Entrecasteaux National Park Draft Management Plan*, WA Department of Conservation and Land Management, April 1986.
3. *Karri at the Crossroads: A Proposal for the Adequate Conservation of the Remaining Karri Forest*, Conservation Council et al, 1982.
4. *Wilderness, Karri and Coast: Shannon and D'Entrecasteaux National Parks*, a submission by the South-West Forests Defence Foundation Inc., March 1985.
5. *ibid.*

Contact: Campaign to Save Native Forests, 794 Hay St., Perth, WA 6000. Tel: (09) 321 2269.

Another leak from Ranger



The main pit at Ranger Uranium Mine, June 1986, full of water.

The Ranger Uranium mine, situated in Kakadu National Park 250 km south east of Darwin, is attempting to control its water situation so as to achieve a no release of contaminants goal, particularly from the region designated as the Restricted Release Zone (RRZ), which accumulates water that is considered too polluted to be safely disposed of into the environment. This zone includes the mine pit, the tailings dam and water used in the milling of the uranium

ore. However, water is accumulating in this region to such an extent that it is interrupting mining. To alleviate this problem, Ranger wishes to discharge water from the RRZ into nearby Magella Creek from where it would flow into Kakadu National Park. To date permission for such a discharge has not been granted.

Ranger claims that the problem has arisen because of lack of accurate information regarding rainfall in the area leading to

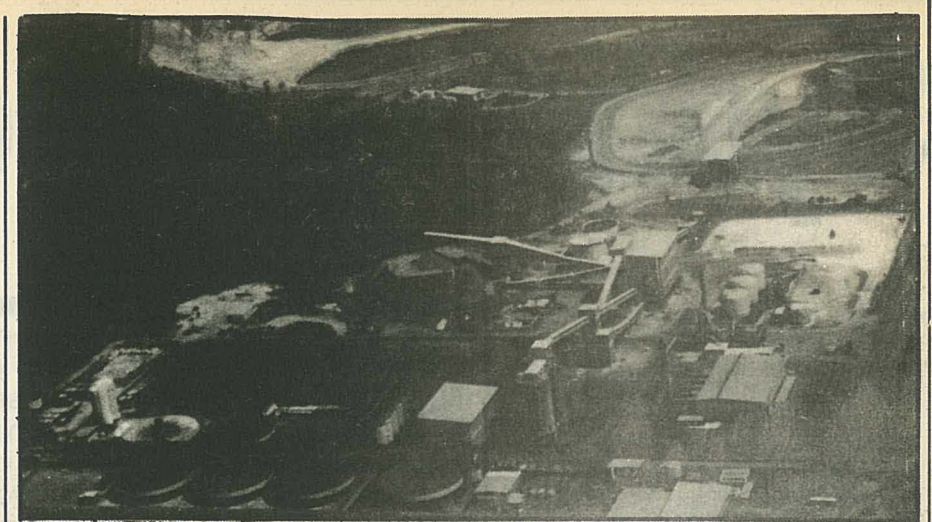
difficulties in planning water management schemes. **Willy Wabeke**, a mining engineer who has worked in the region, claims that the water problem is a direct result of the mining practices at Ranger creating a situation where the underground water table can seep into the mine, and where the water stored in the retention ponds and tailings dam can seep into the water table. In an interview with Chain Reaction, **Willy Wabeke** explains:

What information exists about the condition of the retention ponds and tailings dam?

I've been trying for seven years to get the details of the bottoms of the dams and ponds but no-one will give it to me. What I would like to know about is the structure beneath the ponds. Ranger claims that they've grouted the whole lot but they have never anchored the ponds to the host rock. To do this they drill holes and place steel rods 50m long into them and pour concrete so that it all settles. On the bottom of these rods are wedges which hold the pond. According to my knowledge this was never done.

Ranger has dug trenches by the side of the ponds for the water that seeps out to collect in but they have never dug these collector trenches to the depth of the ponds, that would cost a fortune. What has happened is that with all the blasting since they began in 1978 they have fractured the base rock. When I worked in Kakadu we did dye tests to investigate the water seepage in the mine. We put a dye in a billabong nearby and about a week later the dye was found seeping into the mine. In another part of the mine where water was disappearing we placed dye in the mine and later found it in a creek.

When we first sank a small shaft at the exploration site there wasn't any water. Now holes drilled even in the dry season are full of water. They have used over 3 000 tonnes of explosive at approximately 10 000 tonnes of ore per blast. Each blast is like a little earthquake. All the dams at Ranger are in a radius within which you can physically feel the blast. The tailings and retention ponds are about 80ha, the bottoms of the ponds is so large an area that, given the effects of these blasts, the rock base can't be solid. The water problem is being caused by the effects of these blasts creating cracks. The whole thing is now leaking like a sieve giving Ranger massive problems in the open cut. The water is seeping down from the ponds pushing the water table up. As they go deeper, the worse it gets.

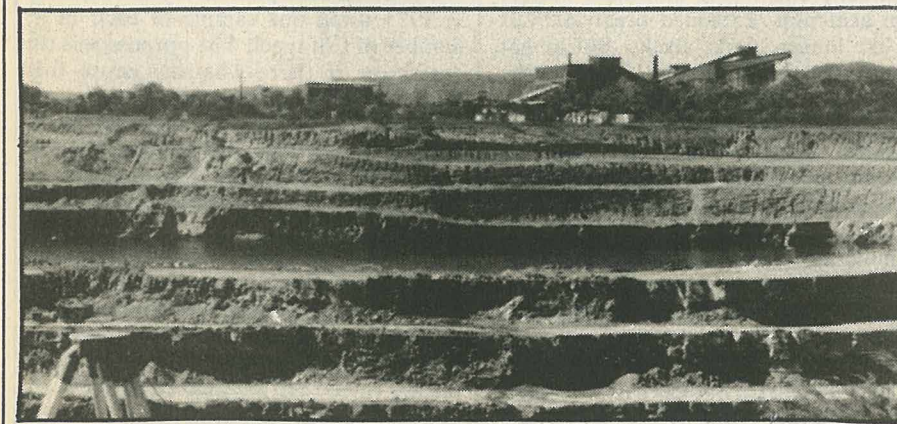


The mill at Ranger.

When was the problem first apparent?

In 1981 islands appeared in the tailings dam. The rules were that there should be at least six feet of water on top of the tailings. This was reduced to eighteen inches because they couldn't maintain six feet. Ranger's version is that the workers didn't lay the pipes that carry the slurry from the mill to the tailings pond properly so that the slurry wasn't evenly spread out. This is an unlikely explanation when you consider the size of the islands created. These islands were so big that they required dynamiting to spread them so that they were covered with eighteen inches of water. I believe that the islands were caused by seepage lowering the water level.

All mines have these problems. Roxby Downs already has massive water problems. Max Walker, the cricketer, wrote an article in *People* magazine where he visited Roxby Downs and he commented on the water there, coming out of the roof, the walls, the floor, everywhere. With the massive mining techniques at Roxby they will be using five tonnes of explosive a day. The rock strata at Roxby isn't homogenous but layered sandstone. If you open that up with shock-waves the water will seep for miles.



The borrow pit at Ranger.

What I fear will happen at Roxby is that in about forty years time they will have this enormous underground cavern. The southern boundary of the Great Artesian Basin is only about fifteen miles from this cavern. What could happen is that the fractured rock will not be able to withhold the pressure of the Great Artesian Basin because the structure will be so weakened. The effects on the Great Artesian Basin would be disastrous if it mixed with the Roxby water system.

What is the solution to the problem?

Stop the mining. They have no hope of getting the mine to the depth that they want. At the moment they are at a depth of about 50 metres and they want to go as deep as 170. The water will stop them.

They have to fill up the pit with about five metres of clay, not one metre as they have said. But there is no clay in the Northern Territory. They had similar problems at Rum Jungle and Mary Kathleen. They claim that they are doing a good job but all they did was fill in the holes with a rock-fill and then rolled soil on top of it. They need about five metres of clay but they said they only needed one. In fact they didn't use any because clay is so expensive. There is no water barrier. The Finnis River on which Rum Jungle uranium mine was situated is now dead, even the rocks are bleached. Even Conzinc Riotinto Australia (CRA), the company that mined Rum Jungle, are saying that the area is dead. We must stop the mining now and we must try to stop the spread of the water. The rehabilitation programs as advocated by the mining companies are meaningless. It is not feasible to rectify the damage already done to the below surface geological structure.

Willy Wabeke is a retired mining engineer who worked in the Kakadu region during the 1950's at the El Sherana copper mine and the Moline uranium mine.

Sydney's toxic waste dump - the Pacific



The Sydney Water Board is currently embarked on the first stage of a multi-million dollar publicity campaign aimed at convincing the public that the solution to the sewage pollution of beaches is in hand. The days of faecal lumps on the sand and chemical stinks in the waves are almost over. Television ads show surfers performing in pristine, sparkling waves. Double page colour-spreads in magazines display bikini girls and high divers.

The solution all this wasted hyperbole is trying so desperately to sell is the extension of the ocean outfalls at Malabar, Bondi and North Head. Construction work has commenced on all three projects. The total cost in 1985 figures is put at \$450 million and commissioning is expected for Malabar and Bondi in 1990/91 and North Head in 1992. The question is will it work and if it does, for whom? **Richard Gosden** reports.

The sources of Sydney's sewage can be broken down into two broad groups, about 50% coming from domestic sources and approximately 50% from business and industrial sources.¹ Almost all Sydney's liquid wastes are transported by water through the sewers and end up in the ocean. Everything from toilet flushings and bath water to waste chemicals and heavy metals.

Because the volume of sewage has been increasing over the years, the noticeable pollution of beaches has also correspondingly increased. The Water Board's plan is to transport the sewage further out to sea. This strategy can be likened to the way Europe dealt with air pollution from coal burning power stations. When the immediate neighbourhood was polluted the smoke stacks were raised. This facilitated the further spreading of pollution until now practically the whole continent suffers from acid rain. Extended ocean outfalls are like longer smoke stacks. But longer 'smoke stacks' will not only facilitate the further spreading of toxic chemicals and heavy metals up and down the coast, when on-shore winds prevail, but they will probably ensure local beaches are just as polluted as they are now. This is so obvious one can only assume that the real reason for building the extended outfalls is in fact to ensure further dilution and spreading of toxic wastes in the belief that the ocean has an almost infinite capacity for absorbing, diluting and purifying such wastes.²

The Water Board *Standards For Acceptance of Liquid Trade Waste To Sewers* limits certain toxic metals and other

industrial wastes according to concentration. Any amount of these substances can be disposed of down the sewer provided they are diluted enough. (More concentrated wastes can be disposed of if a strength charge is paid to the Water Board). The levels to which toxic substances must be diluted are set in accordance with what is considered safe for Water Board workers and equipment, and not what is safe for the marine environment.³

At present there is no legal way of disposing of heavy metals, sulphides, pesticides, chlorinated hydrocarbons etc. except down the sewers as these substances are considered too dangerous for the landfill at Castlereagh.⁴ This means the ocean is turned into a toxic waste dump potentially having a disastrous effect on marine life. Information regarding the effects is very thin and fragmented. The Water Board did a pilot survey off Malabar in 1973 using one sample of each of a number of fish types. The purpose was to determine if there was any cause for concern and whether further research was needed. A blackfish was found to have more than five times the National Health and Medical Research Council (NH&MRC) recommended maximum concentration of mercury.

The NSW Fisheries Division did a small survey the following year and although once again found excessive mercury levels in some samples, no proper monitoring programme was set up. The Fisheries did a further survey off Malabar in 1978/79 of pesticide concentrations in fish the results of which are suppressed. They say they are

still editing it but worst cases are rumoured to be ten times NH&MRC recommendations. A 1978 survey of thirteen fish taken in Botany Bay and Port Jackson found that five had concentrations of polychlorinated biphenyls (PCB's) above US Food & Drug Administration (USFDA) recommendations.⁵

There is a clear danger to anglers and their families but no government department is willing to take any responsibility. The only work the State Pollution Control Commission (SPCC) is doing is a fish population survey off Bondi being undertaken under contract to the Water Board. This will undoubtedly be just a public relations exercise designed to show that certain species thrive in the sewage conditions. The truth is of course that whereas the numbers and weights of some species increase, the overall variety of marine life declines in the vicinity of the outfalls.

The reason the sewers are permitted to be used as a toxic waste dump is because the SPCC has set absurdly loose specifications for controlling ocean outfalls. The schedules of restricted substances in the marine environment are controlled by limits on their concentrations 500 metres from the outfall (at the boundary of the initial dilution zone). The engineering design for the proposed deepwater outfalls

expects to achieve a 40:1 dilution at this boundary. It is possible then to calculate the average annual amount of these restricted substances which SPCC specifications allow to go out the outfalls. (see table below).

In a survey of the marine environment in the vicinity of the Hyperion outfall off California instances of skin tumors and fin erosion among fish have been reported. Of samples of Dover Sole 16% had fin erosion in 1977 and by 1979 it was up to 32%.⁶ Fin erosion appears to be the result of exposure to contaminated sediments.

Virtually all of the possible pollutants in discharged waste are attached to organic waste particles and are thus present in the sediments. . . . The correlation with the number of species of marine life is inverse; that is, numbers of species decrease as pollutants increase. . . . Often fish accumulate PCB's in muscle tissue at about two tenths the level of that in the sediment.⁷

In the early 70's when the newly formed SPCC was cleaning up Sydney's river system the method generally used was to encourage industrial polluters to connect up to the sewers.⁸ An observer at the time of the implementation of new Water Board and SPCC policies towards industrial and highly dangerous wastes, N.G. Butlin, predicted that in this process of cleaning up the rivers

the problems are being modified and shifted from river-dwellers and river-users to beaches and beach-users, leading to the further prospect of heavy outlays to extend sewer outfalls into the ocean or to duplicate sewer mains.⁹

If duplicate sewer mains for industry had been the preferred option secondary and tertiary treatment of domestic waste and recycling would have been possible. As it is, the toxic wastes often disrupt even the rudimentary primary sludge digestion processes at Bondi and Malabar and since the sludge, which is the heavier sewage that is settled out in sedimentation tanks, is contaminated with heavy metals even incineration is considered too dangerous.¹⁰ As a result the sludge is dumped back into the sewer outfall and into the ocean (which makes separating it in the first place an exercise of doubtful purpose).¹¹ Also a separate industrial sewer system would have exposed the concealed subsidy industry currently enjoys¹² possibly necessitating dramatically increased charges. Here we touch on the tip of the real problem.

In lieu of any Commonwealth Government pollution standards relating to ocean dumping through sewer outfalls, the individual states, competing against each other to attract industry, tend to make industrial pollution control requirements as cheap and easy as the public lets them get away with. In NSW the public is slack. In the USA by 1977 all publicly owned treatment works were required to achieve secondary treatment prior to discharge.¹³ Australia has generally followed suit in most states. NSW, on the other hand has no control standards restricting the quality of sewage discharged to the ocean.¹⁴

Currently the sewage pollution on Sydney's beaches is being caused by cliff-base discharges at depths of a few metres. The sewage spreads out on the surface and then travels in the direction the wind is blowing. It has a distinct resistance to mixing with the sea water and diluting which is readily observable by the river-like ribbon of discoloration it forms as it streams with the wind.

The proposed lengths of the outfall tunnels (Malabar 3.6 km, North Head 3.8 km, Bondi 2.2 km) are the distances surface sewage fields will have to travel to pollute the beaches. At present the sewage travels over 8 km from Malabar to the

Total loadings of restricted substances dumped at Malabar, Tonnes/Year		
(+ Caldwell Connell, 1979, 1976; ++ Calculated from SPCC Mean allowable concentration at current sewerage flow)		
SUBSTANCE	+ MALABAR 1976-1980	++ ALLOWABLE AT MALABAR
ARSENIC	LESS THAN 15.7	700
CADMIUM	15.7	1400
TOTAL CHROMIUM	109.8	140
COPPER	62.8	1400
LEAD	47.0	700
MERCURY	3.1	7
NICKEL	31.4	700
SILVER	3.0	140
ZINC	313.0	2100
CYANIDE	LESS THAN 157.0	1400
PHENOLIC COMPOUNDS	157.0	3500
AMMONIA-N	4400.0	35000
CHLORINATED-HYDROCARBONS	39.2	14

North end of Bondi Beach when blown by a strong southerly. The second most polluted beach in Sydney (after Long Bay which is permanently closed) according to the Water Board's own figures is Clovelly¹⁵ which is not near any sewerage outfall but very exposed to wind-blown surface fields. It is located 5.8 km north of Malabar and 3.4 km south of Bondi outfall.

Surface fields of sewage go with the wind and travel distances considerably in excess of the lengths of the tunnels under construction. The experts in the Water Board, however, claim that a 'submerged field' will be formed some of the time. (96% of the time in summer and 20% of the time in winter) Effluent being released from a submarine outfall has a natural tendency to rise toward the surface being less dense than sea-water since it consists mostly of fresh water. However at submarine outfall sites on the US west coast it has been discovered that often the ocean waters are stratified with a cold dense layer on the ocean floor and a sun-warmed less dense layer on the surface. When the effluent is successfully mixed with the cold layer, so that it takes on the same density, it is prevented from rising into the warm layer on the surface by the stratification effect. This is the effect that is hoped for in Sydney and much reference is made to the California models.¹⁶ However there are different conditions prevailing in Sydney and the experts at the Water Board and SPCC are not all in agreement.

Robert Brain, ex SPCC Engineer, claims that on the west coast of California a stratification between top and bottom of 1 kg/m³ is not unusual but on the coast of NSW there is a trivial stratification of only 0.02kg/m³ between top and bottom waters (1/50th that of California) because of the warm East Australian Current. It does not follow, therefore, that a successful Californian design will transplant to Australia with equally good results.¹⁷

The calculations predicting a surface field were done originally by Caldwell Connell Engineers. But they had assumed that digested sludge would not be disposed of through the outfall tunnel.¹⁸ It has now been decided to pump sludge through the outfall tunnel after all necessitating heavier gauge diffusers which will not be able to disperse the sewage as finely as those designed by Caldwell Connell.

Overseas experts brought to Australia for a week to assess the outfalls project said:

We both believe that the coliform requirements will be met in the summer period provided the sewage field is kept submerged by the density stratification in the ocean for well over 90% of the time... We do not have available the analyses to confirm to us that the occurrence (of a surface field) will not be more than 10% of the time. If lack of stratification and on-shore movement are correlated, the frequency of beach

counts over 400 could be significantly higher than predicted by the consultants.¹⁹

Even if you believed in the science of submerged fields and that the government has honourable intentions in spending these hundreds of millions on the tunnels you're still faced with the stark admission that the beaches will be polluted 40% of the time in winter. (see below)

The final piece of evidence that the SPCC has other things on its mind, in regard to these outfalls, than faecal matter polluting the beaches is the absurdly loose requirements it stipulates controlling the quality of bathing waters.

Within all beaches likely to be impacted by the proposal, the geometric mean faecal coliform concentration is not to exceed 200 organisms/100 ml during any 30 day period. This is to be based on at least 5 water samples. Moreover during the November to May 'bathing season', the faecal coliform concentration is not to exceed 400 organisms/100 ml in more than 10 percent of the samples taken.²⁰

Even if the effluent was pouring out of the middle of Bondi Beach it wouldn't be surprising if these conditions could be met since it's merely a matter of using five samples taken when the wind is blowing off shore. Constant surveillance is not required.

Notes

1. N.G. Butlin, ed, *Factory Waste Potential in Sydney*, Australian National University Press, Canberra, 1977.
2. This belief stems from seeing the ocean as a sink of high assimilative capacity. See C. Joy, W. Hickson and M. Buchanan, *Liquid Waste Management*, Botany Bay working paper no 2, Canberra, 1978, p 4.
3. Metropolitan Water Sewerage and Drainage Board, *New Policy for Acceptance of Liquid Trade Wastes to Board's Sewerage and Drainage Systems*, available over the counter.
4. N.G. Butlin, ed, *Sydney's Environmental Amenity 1970-1975. A study of the system of waste management and pollution control*, Australian University Press, Canberra, 1976, p 272.
5. B.J. Richardson, *Polychlorinated Biphenyls (PCBs): An Australian Viewpoint on a Global Problem*, Search, Vol 13, No 1-2, Feb/Mar 1982, p 22.
6. W. Bascom, 'Effects on the Ecosystem of Sewage Sludge Disposal' in *Disposal of Sludge to Sea*, edited by M.C. Dart and S.H. Jenkins, Pergamon Press, 1982, p 50.
7. *ibid.*, pp 50-51.
8. C. Joy, 'Management Policy and Practice', in *Liquid Waste Management*, *op.cit.*, p 26.
9. N.G. Butlin, ed, *Sydney's Environmental Amenity 1970-1975*, *op.cit.*, p 137.
10. Toxic chemical substances can interfere with biological treatment processes used in secondary and tertiary treatment of sewage (see N.G. Butlin, ed, *Sydney's Environmental Amenity 1970-1975*, *op.cit.*, p 164) and application of sewage to land can cause problems such as damage to grass and soil if

As the Water Board monitors beach pollution on behalf of the SPCC it is highly unlikely there will ever be any prosecutions regardless of whether the new outfalls work or not. In fact if the SPCC had any intention of prosecuting it would be doing it now when the Water Board is ready enough to admit to the public there is beach pollution. We can only assume the Water Board had developed some folk cunning about wind conditions.

East Wind faecal ample
West wind get your sample.

The long and the short of this complicated story is that the submarine outfall tunnels are very unlikely to improve faecal pollution levels on Sydney's beaches but they will serve to deposit toxic sediments further out to sea.

A well known marine biologist currently campaigning against the sewage induced sea-grass depletion and sea-urchin plagues, in Botany Bay and along the Sydney coastline, has said that once the sewage is deposited 3 kms out to sea in deep water it will be impossible to do detailed monitoring of detrimental effects though vast damage to marine life is expected. Out of sight and out of mind is just what the Water Board wants.

there is too much industrial waste content (see Victorian Ministry of Water Resources & Water Supply Reclaimed Water Committee, *Strategies Toward the Use of Reclaimed Water in Australia*, August 1977, p 4-5; also I.L. Bogert, 'Ocean Dumping of Sludge vs the Alternatives' in *Disposal of Sludge to Sea*, *op.cit.*, p 3.

11. The digestion of sludge prior to discharge is to lower the BOD count which is a measure of the smothering effect the sewage is having on marine life. At Malabar this is done with little effect as a comparison with West Coast US outfalls shows Malabar BOD levels far in excess of any others. See Clean Waters Advisory Committee meeting report, 8 September 1983, p 21.
12. W.J. Hickson, 'Service and Capital Charges for Sydney's Sewer Wastes' in *Liquid Waste Management*, *op.cit.*, pp 127-131.
13. Robert Brain, 'Recent Developments in Ocean Outfall Diffuser Theory', paper given at Conference on Environmental Engineering, Townsville, 8-10 July 1981, p 113.
14. *ibid.*
15. Water Board's 'Clean Water, Clean Sand' Fact Sheet 2, p 3.
16. For example Caldwell Connell Engineers, *Report on Submarine Outfall Studies*, MWS&DB, 1976, pp 13-17.
17. Robert Brain, 'Sludge Disposal and Design Criteria for Ocean Outfall Discharge' in *Sludge Management and Disposal*, edited by D. Barnes and P.F. Greenfield, School of Civil Engineering, UNSW, 1982, p 9.
18. Caldwell Connell, *op.cit.*, p x.
19. The Clean Waters Advisory Committee Meeting Report, 8 Sept. 1983, pp 25-26.
20. *ibid.*, p 14.

Nuclear-free links

Over the weekend of 7, 8, 9 June 1986 the Coalition For A Nuclear-Free Australia (CNFA) held a National Conference at Camp Eureka north-east of Melbourne. Larry Marshall reports on the proceedings.

Over 40 anti-nuclear activists gathered at a comfortable weekend camp venue for a series of discussions, forums, workshops and meetings. Major anti-nuclear groups from all over Australia were represented including:

Campaign Against Nuclear Energy (CANE) SA
Friends of the Earth (FOE) Vic.
Greenpeace NSW
Movement Against Uranium Mining (MAUM) NSW & Vic.
Nuclear Free & Independent Pacific (NFIP) ACT
Nuclear Free WA Network WA
People for Nuclear Disarmament (PND) Vic. NSW & Tas.
World Information Service on Energy (WISE) Qld.

A written report was received from the Northern Territory Environment Centre.

A range of workshops and information-sharing sessions enabled participants to discuss Australia's links in the worldwide nuclear network. Some of the major discussions and resultant directions for CNFA are:

- The campaign against Nuclear ships visiting Australian ports is growing stronger nationwide. There are versions of a Peace Fleet now operating in Fremantle, Adelaide, Sydney and Melbourne. Greenpeace has also taken strong action in Darwin and the CNFA is being increasingly supported by the maritime unions.
- Members of CNFA joined the rally at Princes Pier on Monday 9 June 1986 to protest against the USS *Rathburne* (a nuclear weapons capable frigate) in the heart of Nuclear Free Melbourne!
- The Anti-Bases Coalition is also gathering strength as it works towards high-

Larry Marshall is joint-convenor of MAUM Vic.

lighting 19 October 1988 when the lease for Pine Gap comes up for renewal.

- The Alice Springs Peace Group has called for National actions to begin a year of pressure on the Federal Government culminating in the withdrawal of the lease for the Nuclear Base.²

There is a growing awareness amongst anti-nuclear activists that the struggle by the Aboriginal people for landrights is at the very heart of the criticisms we have of the way our society operates. The structures which have allowed the destruction of the Aboriginal culture and the murder of the Aboriginal people are the same structures which now oversee the destruction of the environment and threaten life on this planet. We spoke of working together with Aboriginal communities in each state and planned some responses to the Bicentennial Celebrations in 1988. The CNFA must respond to this event and it is time to listen to Aboriginal people in order to work out the most effective approaches for all of us.

There are enormous implications of the Nuclear Power Plant meltdown at Chernobyl for the anti-nuclear movement worldwide. The immediate and long term effects on human life and the fragile environment must be monitored on an international level. The European anti-nuclear voice is growing in strength even inside France and the eastern bloc. In Australia, responses in each state were similar with rallies being held in the city centres and research continuing towards a more comprehensive statement of considered strategies and actions.³ The thrust of the discussion was aimed at highlighting the 'soft energy' options for Australia and the world.

There was discussion on the ALP conference in July 1986 and the role of the anti-nuclear movement in the period leading up to the next federal election. A 'Boycott' of the parliamentary parties and their indistinguishable policies on so many issues of concern was one alternative which will be debated further at the next CNFA consultation in December 1986.

There was new information on the 'U'-mining industry. State Governments have been granting companies exploration licences for uranium and at Manyingee in WA a very large 'pilot' plant has been set up with French companies funding the

project.⁴ We also heard updates on the mismanagement and resulting strike action taken at the Ranger uranium mine, the state of play regarding the declaration of stage 3 of Kakadu National Park⁵ and the scaling down of operations at Roxby Downs in SA.

The CNFA conference was successful in a number of important ways. Many activists met 'face to face' for the first time and set up strong links which will be invaluable as the ideas for national actions take form over the next twelve months. We gained a clearer understanding of the particular situation facing each group in their own state. New information and resources were available for all to share (videos, slide kits, newsletters, magazines, reports etc.)

The CNFA will consolidate its information through its newsletter and the WISE bulletin and seek thereby to extend the opportunities for well coordinated national actions. We will work to better develop our links with each other and with like-minded groups in each state to form effective anti-nuclear alliances aimed at strengthening our combined impact.

Footnotes:

1. British, French and US warships may be visiting Australian ports in October 1986 as a part of naval exercises already planned by the government.
2. A 'national action' and rallies in each state are expected on 19 October 1986. There is also a campaign aimed at sending acorns to the US embassy to buy back our land.
3. Some of these responses will be printed in the next few weeks by MAUM Sydney (a booklet) and by FOE and MAUM Melbourne (a background briefing) and in a 16 page insert in Chain Reaction.
4. A video of the Manyingee mine is available from Carl Drury PO Box 1124 Fremantle WA 6160.
5. The Federal ALP government is attempting to slide out of its commitment to declaring stage three of Kakadu National Park by having a smaller portion (30% or 12% of the original land) declared as the new stage three.

Contact: This year the CNFA Secretariat is located in Melbourne with Friends of the Earth (FOE) and the Movement Against Uranium Mining (MAUM). For more information write to CNFA Secretariat, c/- MAUM, 285 Lt. Lonsdale St., Melbourne, 3000 Vic.
Or phone (03) 663 1428.

REVIEWS

Books

Aids and the New Puritanism

By Dennis Altman
Pluto Press, London and Sydney 1986
228 pages \$11.95

Reviewed by Tom Worsnop

AIDS burst upon the world as a 'gay disease' with the full force of religious crusading, multimedia hype and expertism masquerading as knowledge. Instead of being informed we were shouted at. With this book the context of the AIDS problem is explored; the problem facing mainly gay men is discussed from a viewpoint very much attuned to those most affected, both physically and emotionally, and on whose shoulders the trauma landed. There is a largely American bias in the work, but it quite easily translates to an Australian situation and to Western living generally. Importantly this book, more than most others dealing with the topic, has had the clear insight to include some truths about the political influences on the spread of AIDS, while dealing with the personal sympathetically.

Altman's discussion begins from the gay community, experiencing contradictory moralist and liberal influences. At one end of the spectrum is the gay liberation movement of the seventies and the freedom of expression gained from it, and at the other the shove-us-all-in-boxes-and-be-thankful-we've-even-got-them ethic led by the Reagans and Falwells of the new right. Thrown upon this confusing array of acceptability came the AIDS epidemic, and scapegoating was the result. This syndrome ate at the very core of gay sexuality, and also at the self-respect of an emerging community. Neither gays, nor the rest of the world was given a clear understanding of the AIDS problem, and it was left to the competition of scientific discovery and patenting to solve a complex disease. The French and American research teams finally resorted to the courts to decide who were the first to identify the source organism, while those afflicted were

dying or seriously ill. This was the world's response to the epidemic, a response totally out of tune with the psyche of the gay subculture.

AIDS AND THE NEW PURITANISM

DENNIS ALTMAN

From this point Altman goes on to the way different groups responded to the AIDS threat. Coming in for particular criticism is the US government's health service. The epidemic's quick spread was largely due to the policies of successive conservative governments who were cutting back on public health to fund the worldwide offensives by the military. He emphasises the way the AIDS virus could afflict anyone, though its path of infection was particular to a few communities (intravenous drug users, haemophiliacs and Haitians as well as homosexual men). The combination of social stigma, poor public health facility and a swing of consciousness to external political threats meant AIDS as human suffering was forgotten.

There is, however, a relief to this, and credit is given to the many gay groups who worked to organise a disparate and frightened gay community into a politically intelligent and informative AIDS service. The personal sufferings and losses were

also cared for by these groups, and a well-researched plethora of groups came in for congratulations.

Sexual behaviour and the changes and challenges brought about by the Aids epidemic are then considered. While the epidemic is still around, without a known cure this topic could not be fully concluded. Altman, however, points to several possible behavioural and emotional points to be considered:

One of the problems in talking about sex is to disentangle what people actually do from what they think about it — that is to separate behaviour from ideology. It is not merely that gay men have drastically altered their sexual behaviour in response to AIDS: even more importantly, the epidemic has forced us to think very differently about sex, and to question many of the assumptions about the sort of life gay men have been constructing over the past ten years.

Overall, 'AIDS and the New Puritanism' offers a clear-sighted view of the gay community and its ability to respond to the deadly disease. The insight into the psyche of a community having to come to terms not only with a threat to individual lives but also to itself as a whole and to the right to self-expression is impressive. Although a somewhat heavy text, the messages are clear and accessible, and what we face has surfaced well.

Tom Worsnop is a member of FOE Collingwood and the 3CR Gay Radio Collective.

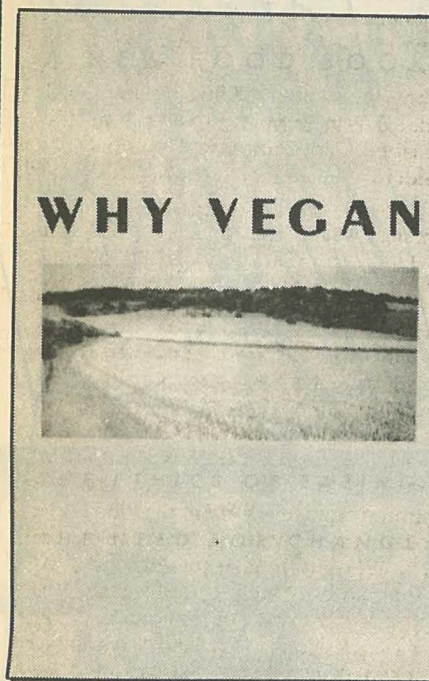
Why Vegan: The Ethics Of Eating And The Need For Change by Kath Clements, GMP Publishers/Heretic Books, London, 1985, 96 pages, \$9.95 (paperback).

Reviewed by Phil Shannon.

The slim manifesto 'Why Vegan', by Kath Clements of the Vegan Society in England, will be a boon to all of us who suffer verbal jests about the quirks of adopting our healthy meatless food and exercise regimes. You know, the office jibes of the flesh-eaters and sugar-junkies at the morning tea-break like 'go on have a piece of cake — it's free-range sugar' or 'we'll outlive you yet — if you don't starve from your diet of

seaweed and raw eggs, you'll be run over while jogging one day by a health-food truck'. We can retort, aided by the arguments in 'Why Vegan', about our office colleagues committing mass nutritional suicide, or their stoicism in facing death by chicken liver pate and white bread, or being proto-fascists in perpetrating food trade exploitation against the poor of the Third World.

But there is a literally deadly serious aspect to all this good-natured banter. Clements argues that a vegan diet in the West is essential both for the health and moral well-being of our overfed but undernourished population, and for life itself for the starved and dying in the poor countries.



Veganism is the radical wing of vegetarianism. The vegan not only rejects meat but any food of animal origin including dairy products and eggs. Veganism has its own 'ultra' wing which renounces the use of animals for any human purpose such as wool, leather, soap, zoos, circuses, farms, pets, sport. Clements belongs to this wing and is critical of those 'moderate' vegetarians who, by consuming milk and cheese for example, are complicit in animal suffering by propping up the evils of the dairy industry such as forced pregnancy and the 'daily mass slaughter' of calves to obtain rennet for cheese-making. She is abruptly dismissive of 'vegetarians' who drink milk or own pets, but although logic and morality are on her side, she could be more generous to those who have made the rather large and challenging step of renouncing meat but who are not yet prepared to go the whole vegan way.

Clements sprints through the familiar arguments against meat. A meat diet is

ecologically wasteful because only one-tenth of plant protein consumed by an animal is converted into meat protein and even that meat is poisoned and laced with degenerative disease-causing fats. A meat diet exploits our poor countries by forcing them to grow grain for export to fatten our livestock instead of for agricultural self-sufficiency. For every overfed meat-eater in the rich countries there are ten malnourished in the poor. Every bottle of milk contains a large measure of death of calves and pain and suffering of the cows. Meat-eating is ethically indefensible and un-Christian — a non-vegan diet means 'a Belsen every day' for animals. If none of these altruistic reasons cuts any carnivorous ice, there is always the selfish appeal to the taste-buds; in terms of eating pleasure, giving up meat is 'liberation not self-discipline or going without'.

Clements dismisses with a polite snort the 'necessity' of animals for protein and vitamin B12 without which we would supposedly die. There are, she says, alternatives to the allegedly essential animal nutrients. Clements also takes her demolition derby against the 'meat and milk myth' into the fields of anthropology and metaphysics. We are not, she believes, hunters by origin (we are primarily frugivores) or nature (our teeth, jaws and intestines are totally different to carnivores). Killing is a reluctantly learned behaviour. 'Where does our revulsion against killing come from?', she asks. 'The true carnivores', she answers rhetorically, 'kill without compassion. Might we suspect from this that killing for food is not natural to us?'

Clements' arguments cover an impressive range but by not grappling with the counter-arguments in detail, they may sound like mere assertions and fail to convince the flesh-eaters. Another of the book's weaknesses concerns Clements' strategy for social change. After correctly pointing to the two prongs of the problem, the 'colossal vested interests' of the food multinationals and the 'blinkered table habits' of consumers, she opts for a naive solution based solely on cumulative individual dietary changes without the need for any bothersome class struggle or collective political action against the economic system responsible for the food capitalists' power. 'Different social structures', she wistfully hopes, 'would arise as the rich and powerful elite of the world's meat-eaters changed their diet, and new economic patterns would emerge'. Vegan capitalists, however, although not exploiting animals would still louse up the environment (which includes animals) and people, in their rapacious search for profit. Ron Reagan switching to tofuburgers will not halt Star Wars.

Clements as political theorist and strategist may be hard to digest but not so her vegan recipes for adults and babies included in the book. Through practical advice and moral persuasion she succeeds in arguing that people by going vegan will at least be able to absolve their 'blood guilt'. The book will leave flesh-eaters and milk-drinking vegetarians with an uncomfortable feeling, both morally and in the stomach, and this is the first step on the road to social change.

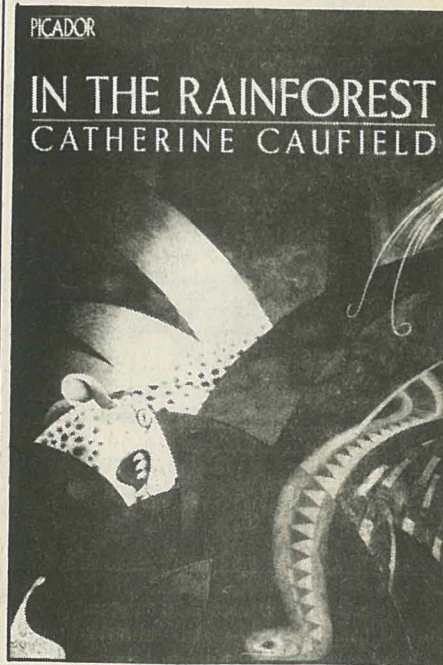
Phil Shannon is a member of the Communist Party of Australia and a public servant in Canberra.

In The Rainforest by Catherine Caulfield, Picador London 1986, 304 pages, \$12.95.

Reviewed by Flick Wright

One reason that the Central American rainforests seem doomed to disappear is that their destruction takes five cents off the price of an American hamburger.

In The Rainforest is a marvellous book. Catherine Caulfield, an American journalist who lives in London, has combined a battery of statistics and information about the state of the world's rainforests with an explanation of the political, economic and social factors that have affected their past and will determine their future. This information is impressively conveyed in an entertaining and thoroughly readable way.



Even while the reader is repeatedly shocked and outraged by the variety of ways rainforests have been and are being degraded and destroyed, it is impossible to

REVIEWS

stop reading. Caulfield's treatment of her material is fascinating; frequently ironic, often amusing but never lapsing into hysteria.

In The Rainforest is primarily about tropical rainforests as distinct from seasonal rainforests. 'Two-thirds of the world's rainforest is the wetter, richer equatorial type. The major concentrations are in lowland Amazonia, the Congo Basin, Sumatra, Borneo and Papua New Guinea.' It is a fact that much of the world's rainforests have already been destroyed and virtually all of what remains is under threat. Environmentalists are now familiar with the US National Academy of Sciences 1980 estimate that: 'Over fifty million acres of rainforest — an area the size of England, Scotland and Wales — is destroyed each year'. The obvious questions are why is this happening and how can we prevent it?



Ms. Caulfield travelled extensively to observe a number of activities currently being undertaken in rainforests as well as viewing the legacies of previous ventures. She describes in detail an almost laughable plan to generate hydro-electric power in Brazil that involves flooding areas of rainforest that make the Tasmanian HEC plans for the Franklin/Lower Gordon look like those for a back yard swimming pool. The project has already begun despite the lack of any detailed environmental study. There are a number of very

good reasons why the project would be well advised not to proceed based on problems found with similar projects, not to mention that the rainforest to be flooded is inhabited. Discussion of the projects visited by Caulfield is all the more pertinent being interspersed with observations and quotes from critics and advocates. Her detailed research took her to: transmigration (re-settlement) in Indonesia, mining and logging operations in New Guinea, cattle-raising, logging and crop growing in Columbia and numerous other places. She spoke to a range of people including scientists, company employees, bureaucrats, politicians and peasant farmers.

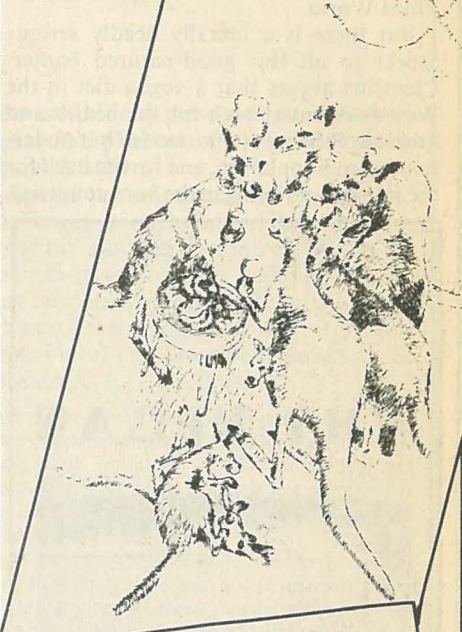
The chapters describe specific projects and activities undertaken in rainforests or address features of rainforests that make them distinctive such as the flora and fauna, soil fertility, rainfall and water catchment, as a home to forest dwellers and usefulness to the world at large as possible sources of medicines and reservoirs of carbon. The chapters could be used independently for study purposes as unfamiliar terms and concepts are explained each time they appear and the book is free from jargon. Combined, the chapters present a consistent and intelligent argument for the need of greater care and understanding of the complexity of rainforests.

Throughout *In The Rainforest*, Caulfield also includes an analysis of the factors that cause the destruction of the rainforests apart from the alleged need for rainforest products and the land it grows upon. It becomes increasingly clear that governments throughout the world have ultimate responsibility for the state of the rainforests. The issues behind the exploitation in each and every country with rainforest include: land distribution, population densities, distribution of wealth, farming techniques, land management, logging and mining practices, education, foreign investment, export markets, energy consumption, and the list goes on. There is also the issue of the violation of human rights each time an area of rainforest inhabited by indigenous people is felled, flooded or similarly destroyed.

In The Rainforest is not difficult reading. However, it is often saddening. Human folly on such a large scale is irresponsible and the effects are tragic. Thankfully the reader is frequently rewarded with beautiful descriptions of those forests we do have left which must surely serve as an incentive for us to become active in their preservation. I thank Ms. Caulfield for her sane, intelligent and rational book. I only hope I have done it justice.

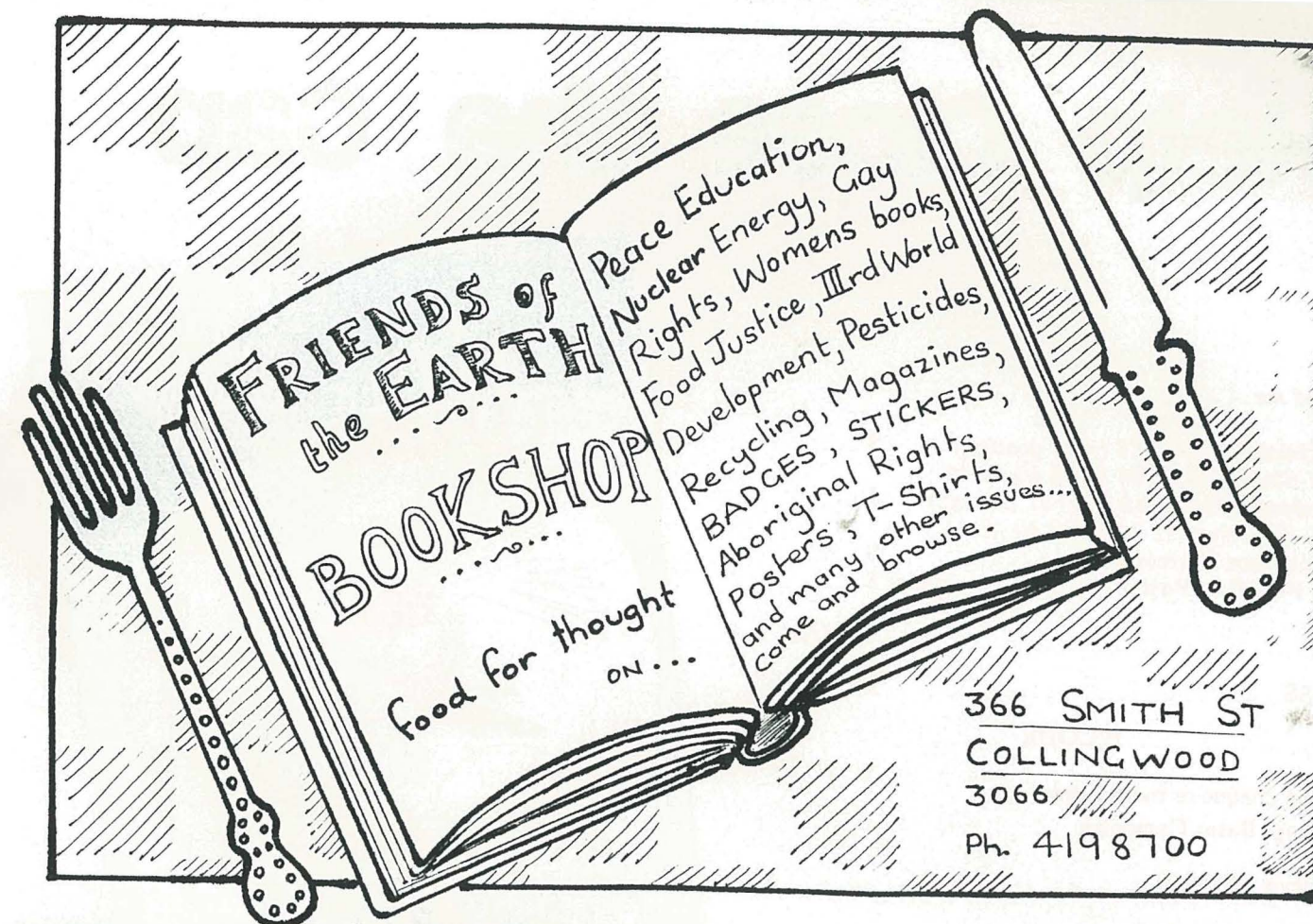
Flick Wright is an activist and a member of the Chain Reaction collective.

Australian Native Greeting Cards

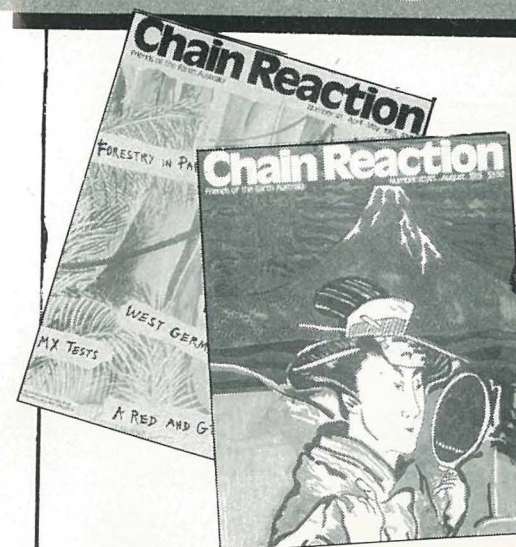


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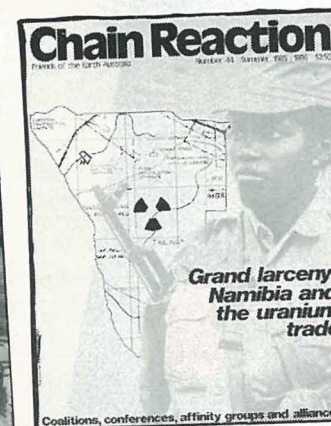
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Black Cockatoos T-Shirt \$18 (+\$1 postage) \$ _____
 Chinese T-Shirt sizes 32 34 36 38 40 42 44
Black Cockatoos Postcard 80¢ \$ _____
Clean-up Pine Gap Poster \$5 (+\$1.70 postage) \$ _____

NAME _____ TOTAL _____

ADDRESS _____ \$ _____

_____ P/CODE _____

Please send cheque or money order to:
 Alice Springs Bases Campaign
 PO 1637
 Alice Springs NT 5750

