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Cloud of Death Hits India Accident Highlights Dangers of Chemical Production

John Pavitt

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The Bhopal tragedy has raised international concerns about the production and use of hazardous chemicals in developing countries. New information indicates that the gas leak that killed over 2000 was avoidable. It is just one example, critics charge, of the lower safety standards multinational corporations have when operating in the Third World.

The public at large is rarely exposed to high levels of pesticides. By conservative estimates, however, 500,000 farm workers, pesticide plant employ-ees, and children worldwide become sericusly ill and about 5000 die each year from exposure to pesticides (World Watch Institute, 1978). According to the World Health Organization, someone in the Third World is poisoned by pesticides every minute. In the United States, roughly ¹5,000 poisonings and 200 deaths are caused by pesticides anually (Living In The Environment, Miller, 1982).

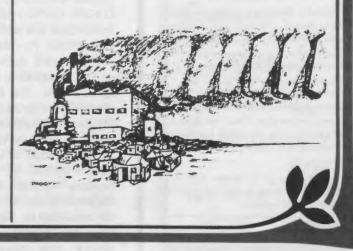
The cloud of methyl isocynate gas that swept through Bhopal was the same as that used in the production of many pesticides. Methyl isocynate (MIC) is made from phosgene, which was devel-oped during World War I as an extremely efficient biocide. The chemistry that makes phosgene a killer also makes it a useful building block for synthetic products.

One pesticide, Sevin, is effective on as many as 100 different crops and some 180 types of insects. These benefits should be balanced against the costs of maintaining an agricultural system dependent on expensive and potentially hazardous petrochemicals.

Inhalation of MIC causes liver and kidney damage that can prove to be fatal; respiratory damage, and in some cases, sudden death by suffocation. It is estimated that some 200,000 people were injured in the gas leak December 3 (<u>New York Times</u>, 2/4/85).

Although most pesticide poisonings are caused from misuse on crops, the leak in India occured at a plant owned by one of the world's largest chemical manufacturers. Union Carbide as a reputation of being one of the more safety-conscious chemical companies. Why did the leak happen there, and who was responsible?

A recent inquiry by the <u>New York Times</u> found that the gas leak resulted from operating errors, design flaws, maintenance failures and training deficiencies. Among the *Continued on*



PLANET PEOPLE

Editor: Dave Kuester Contributing Editors: John Pavitt, Chuck Dingee, Doug Dobyns, Lynn Robbins, Laurie Stephan Advisor: Lynn Robbins Thanks for the smile, Jayne!

Editor's Note

When we stop to look around us, we don"t always see beyond our own home.

The world is interrelated. There are no more fantasies of pure isolation; we are linked. Thus, it can be said that what occurs in one place effects the entire globe. Though we may not witness an event, we are, nevertheless, effected by its repercussions.

This issue of the <u>Monthly</u> <u>Planet</u> has been dedicated to helping us see beyond our backyard. Enjoy.



To Our Readers

The Monthly Planet is a publication that strives to inform, entertain and stimulate thought on environmental issues. We, the MP staff, know that environmental interest and concern is not confined to just the experts and the radicals. By broadening the focus of the Planet we hope to appeal to a community-wide audience. Let us know what you like or would like to see in the Planet; reader participation is invited in all aspects of its publication.

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Greetings from E. C.

Laurie Stephan

Hello faithful readers, this is the Environmental Center sending information your way. As many of you may know, we had to hire a new assistant coordinator this quarter. Roger Taylor had to resign due to health problems and Vaughn Bresheares was hired in his place. Vaughn was instrumental in establishing the Peace Resource Center on campus last year and has been key in organizing the Bellingham green network. Welcome Vaughn!

An update on E.C. events for this quarter includes a film and speaker/slideshow on uranium mining and its environmental effects; a film on hunger and the food system in Zimbabwe in conjunction with Hunger Awareness Wednesdays; a presentation and field trip to Meares Island in British Columbia and a weekend retreat to Orcas Island with environmentally concerned students from B.C. and Washington. The Orcas Island event went particularly well. If you have questions about these events or the specific subjects, please contact us.

Next quarter we are sponsoring three major events. The first is a Hazardous Waste Week and Symposium. This event will happen April 8-13 and will include panels, speakers, films, fieldtrips and workshops for industries and education students. Look for the publicity.

Our next major event will be a bioregional conference on April 26-28. The Peace Resource Center and the Bellingham Green Network are helping us on this one. We will be examining what bioregionalism is and what parameters define our Cascadia bioregion. Peter Berg, Ernest Callenbach and Bruce Brown will be speaking at this conference. Come to learn about and celebrate the beauty of our bioregion. Registration will cost \$5.00 plus \$1.00 if you wish to attend the informal gathering Friday night where Charlie Murphy and Jamie Sieber will be performing.

May 29th and 30th, we will end our quarter of events with Starhawk, a spiritual feminist author. She will be leading a workshop on techniques of ritual and how ritual can help to bind us into community. The workshop is limited to 35 people and will cost \$10.00. Don't miss this chance to work with an internationally known feminist activist. The following day she will be presenting a lecture on spirituality and politics and what she learned in Nicaragua about the blend of the two.

You could also work for the Environmental Center as the Coordinator, the Assistant coordinator or the Monthly Planet Editor. We will be hiring soon. As the Coordinator this year, I can testify that you will gain invaluable experience in holding this job. Not only do you learn how to program; coordinate a staff; run a budget; and organize yourself, others and time better; but you get paid to put some of your ideas to work and meet some very interesting and often well-known people. If you are at all motivated in the direction of public education and participation, you should seriously consider one of the three salaried jobs at the Center. We also always have room for workstudy in the office and the library.

As usual, I encourage you to come on down and peruse our information resources in Viking Union 113. Good luck with the firal week of craziness.



World Game Promotes Change Through Research and Invention

Chuck Dingee

World Game, Inc. is a nonprofit, non-partisan, peace research, education and planning organization that develops tools to help individuals and organizations recognize, define, and solve global problems and local problems in a global context. It was originated by Buckminster Fuller and has been conducting workshops, seminars, and lectures since 1969. Presently it is based in Philadelphia under the direction of Medard Gabel, Judith Parisean-Holt, and Howard Brown.

During the Winter quarter 85, a group of 10 students enrolled in Huxley seminar 499-b have been studying the concepts and methodology of the World Game and gave a presentation at the International Environmental Conference on Orcas Island Feb. 16th.

In the 1930's Buckminster Fuller believed that most politics are based on two fundamental assumptions:

1. That there are not enough resources on Earth to support everyone. Therefore, we must not only make sure that we have enough for ourselves, but also we must keep others from using what we may need.

2. That the only way to determine which political group will survive is by war.

Fuller believed that both of these assumptions may not be true. The first assumption is based on the findings of Thomas Malthus, who made the first attempt to collect a "complete inventory of world resources" through the British Empire's East India Company College in 1600. Malthus found that resources (food, raw materials, etc.) were growing at a much slower rate than population, therefore, he assumed, there will never be enough for everyone.

Since Malthus' day many important changes have taken place. For instance, the electromagnetic spectrum was discovered, which allowed physical resources to include frequency levels that are imperceptible to humans, thus expanding "reality". Other developments in technology have allowed us to progressively do more and more with less and less raw material. Perhaps Malthus' theory is actually a myth—the myth of scarcity.

The second assumption has already been proven false, since a "trial by armed might" today would destroy the entire world.

Out of these refutations World Game was born.

The World Game is a comprehensive inventory of all the world's people, resources, and technology. This information allows more understanding of the interrelationships between each.

You need a microscope to see things too small for the naked eye. You need a telescope to see things too for away for the naked eye. World Game is a macroscope a tool to see things too big to see in one glance, too slow to detect movement in a glance, or too seemingly unrelated to detect a pattern in a glance. All of this is available through books, charts, and computer materials.

World Game is also a methodology for problem-solving that incorporates all of these ideas and data into a process called Design Science. The idea is to design a system that makes the problem obsolete, usually by achieving greater output using less input. This, of course, may not instantly solve the problem, but frequently makes available a solution.

A large, ocean-going ship is steered by a rudder located in the rear of the vessel. But a 1000 ft. ship has a rudder that is so large it is nearly impossible to move it through the water. To remedy this problem a trim-tab is used. A trim-tab is a small rudder within the larger rudder which steers the larger rudder which steers the ship. World Game believes that individuals or small groups of people can be trim-tabs and make it possible for big systems to change direction.

An old Chinese proverb says "If we don't change our direction, we'll probably end up where we're headed."

To find out more about the World Game contact the A.S. Environmental Center or write to: The World Game, 3701 Chestnut St., Philadelphia, PA 19104



Ethiopia's Starving Millions

Famine Intensified by Civil Strife and Poor Distribution

Dave Kuester

E maciated bodies, swarming with flies, starved corpses... This is the grim reality of Ethiopia's starving millions. Drought has left these people with hardly enough water to moisten their lips. Yet the drought is but one problem facing the people of Ethiopia.

The Western world has begun to pour in aid by the tons. This benevolent gesture aimed at providing a short-term fix to the worst famine of the century has met several obstacles on its way to the mouths of the needy.

Ethiopia is currently engaged in a large-scale civil war. The areas that are needing the greatest relief happen to be the northern, guerrilla-held areas. Relief aid is not reaching these areas. The communist regime blames the guerrillas for making distribution "too risky" in the North. It has been reported that guerrillas attacked an aid convoy and burned the vehicles.

But critics have accused the government of trying to starve-out the guerrillas by purposefully witholding relief aid. Caught in the middle are the innocent peasants of the Northern Eritrea, Tigre, and Wollo regions of Ethiopia.

One farmer complained that he was beaten and turned away after standing in line for food for an entire day. The reason was that he came from the North and lacked the official membership card which the government requires peasants to carry. The card allows them government aid and requires them to serve in local militias.

In addition to civil strife, the distribution of short-term relief aid is hindered by a poor transportation system and port facilities. Rumors have come to the West that relief grain shipments are rotting on the docks of the Port of Assab, waiting to be distributed. Many observers feel that what Ethiopia really needs is relief in the form of economic aid which would help provide more long-term solutions to the drought problem. But the United States government has been unwilling to give monetary aid or approve credit to the Soviet-backed regime. The reason for this is that in 1974, when Ethiopia nationalized all economic instituions, many U.S companies were victimized. The U.S has since imposed economic sanctions against Ethiopia.

The Hickenlooper Amendment to the Foreign Assistance Act prevents any further aid without prior compensation to expropriated U.S. companies. The Gonzalez Amendment demands that the U.S. vote to deny multinational bank loans to Ethiopia until debts are settled. Some charge that these U.S. policies are aimed at weakening the unfriendly Soviet country.

If the U.S. does decide to help economically they should not expect to gain political clout in the region. The Ethiopian government is highly suspicious of the intentions of the U.S.

The Soviet Union has responded to the crisis by donating airplanes and trucks to help with distribution of food. Though the Soviets send large amounts of monetary aid, most of this is earmarked for military expenditures. In fact, half of the government's money is spent on the military for controlling the rebels. Many see this as selfdefeating in the wake of the crisis.

Victims of Canada's Uranium Industry Choose Direct Action

Doug Dobyns

The Caradian government has not been responsible in their control over health hazards in the uranium industry, and especially when the hazards have been imposed on the Indian peoples. After trying conventional methods and failing to get this situation into the parliamentary process, the Indians of Northern Saskatchewan have decided to begin direct action. In the Wollaston Lake area the Council of the Cree People has asked for help from the International Community. There will be a gathering in early June to review the problems these people face from living on the doorstep of uranium mines and a mill At this time a rolling blockade of the roads will be initiated and maintained with help from peace movement activists in Europe and the United States.

People in Bellingham who are interested in participating in this action can contact the Environmental Center on the Western Washington University campus for details about scheduling rides, weather conditions, what supplies will be needed, and the status of the development plans. There will be workshops held to brief people on conditions before leaving, and there will be additional workshops for people who plan to take part in the actual civil disobedience actions.

There is a core group in Vancouver, BC, which will be publishing reports and doing networking on the issue for the West Coast. One of the members of this group recently came to Western to conduct a slide show and lecture and gave out materials about the core group's plans for this summer. These materials are available for review at the Environmental Center.

Africa's Drought Accelerates Desertification Process

Past Aid Programs Lack Ecological Insight

Dave Kuester

Although it has recieved the most media attention, Ethiopia is not the only African country plagued by drought. The countries affected span from Cape Verde on the Atlantic Ocean across the Sahara countries of Ohad, Mauritania, Senegal, to Ethiopia, Sudan, and Somalia; continuing South- Tanzania, Zambia, Mozambique, Zimbabwe, Lesotho and Botswana; up the West coast through Angola, Benin, the Central African Republic to the Ivory Coast.

The most serious long-term damage facing Africa's droughtplagued area is the ever-growing desert. Desertification is a result of soil erosion which renders the soil virtually unproductive. The drought is not solely responsible for this phenomera. Man's interaction hastens the destruction of the soils.

During the decade of 1955-65, more rain fell on Africa's arid Sahel region than had fallen in the previous 50 years. Because of this chance climatic shift, marked increases in livestock grazing occured. The grasslands where these animals graze are a very delicate ecosystem. The increased consumption of grasses disrupted the replenishing process.

If one half of the grassland foliage is consumed, its ability to sustain itself is seriously impaired. If overgrazing persists and erosion takes over, it can take 100 years to become productive once more, assuming that it has not become a permanent part of the desert.

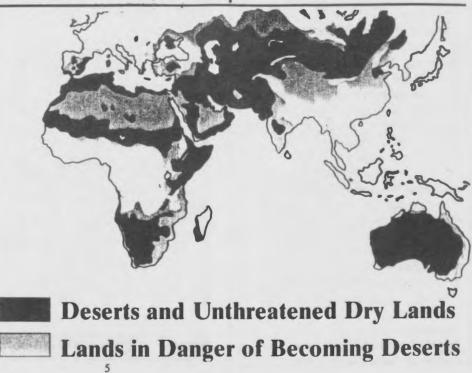
In addition, when these expanding herds confronted the drought that occured in the late 1960s-early 1970s, the grasslands shrunk more and more rapidly because output was diminishing while consumption was not During this earlier drought, Western aid organizations, in an attempt to solve the water shortage problem, promoted the digging of deep water wells. The result of this was to further the overgrazing problem. People and their herds tended to centralize near the wells. This concentration of stress on the environment speeded up the destruction of the grassland which, in turn, speeded up erosion.

Overgrazing is not the only human factor contributing to desertification. Western aid programs have promoted a shift from the practice of subsistence farming to an exporting, cashcropping agribusiness. As a result, the most optimum agricultural regions were taken over by coffee, cotton and other trade crops. The peasant farmer, still on the subsistence level, has been driven to till the marginal areas where soils are already threatened.

As aid programs promote donated food distribution, medical and veterinary assistance, as well as cash cropping and well digging, the populations of people and livestock increase beyond the carrying capacity of the environment. Thus, putting an everincreasing stress on the soils and other resources. The Western world may have to prepare to take care of these people for a prolonged period.

The media appeal should cease its overemphasis on the short-term fix, begin to examine the ecological principles involved, and help to begin progress toward longterm, sustainable food production for Africa.

Some recent suggestions have included the decentralization and deurbanization of populations, planting of appropriate vegetation in marginal areas that have been proven to curb desertification, a return to subsistence level agriculture in the optimum growing areas, the establishment of local food-producing cooperatives, the rebudgeting of money spent on the military, and the sacrifice of livestock that have seriously accelerated the desertification process.



S. I. A.

Social Sciences Expand to Meet Community Needs

Lynn Robbins

In recent years there has been a new movement in the social sciences which calls for the protection of communities. It has been labeled "Social Impact Assessment" and its emphasis is on research into communities that are subject to change from proposed projects, policies and programs. The research is expressly conducted to acquire an understanding of how communities work, how people who comprise them make their living, interact with one another, the values they share, the range of preferences and expectations they embrace, their reservations about social change, their creativity, labor force, sense of identity to a place, their esthetic choices, history and the laws that protect them from adverse, undesired impacts.

Social Impact Assessment began as a branch of Sociology and its initial impetus came from the environmental movement of the 1960s and 1970s when the National Environmental Policy Act was passed and when so many Americans were vitally concerned about environmental and community degradation from unplanned growth and harmful techniques in manufacturing, processing and consumption and when there was a national movement in opposition to the role the United States played in the Southeast Asian war. Social Impact Assessment as a specific sub-discipline was adopted by other social sciencespolitical science, anthropology. history, some aspects of legal studies, and others-- and it now comprises a large community of scholars, public employees, citizen's groups, political officials, and many people from other walks of life. There is a journal for the discipline (Social Impact Assessment, published in New York State) which publishes brief summaries of Social Impact Assessment techniques, case studies, and a network of names associated with SIA.

SIA as a sub-discipline is similar to Applied Anthropology and Applied Sociology but it is different from these fields in that it focuses on environmental legislation that protects communities (urban neighborhoods, minority groups, religous organizations and other aspects of social life that lend diversity to cultures) and attempts to accomplish two major goals: reduce human suffering and allow for more informed decision-making through community organization and planning. It is non-reactionary; it is creative and rigorous in approach.

One social organization that is using SIA techniques and goals is the Green Party. It fosters regional and local community integrity, encourages democratic procedures and reviews, encourages local initiative, and supports local self-sufficiency.



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the most revealing findings were:

* The three main safety systems were unable to cope with the leak. In addition, one of the systems had been inoperable for several days, and a second had been out of service for several weeks.

* Instruments at the plant were unreliable, according to the MIC supervisor on duty at the time of the accident. For that reason, he said, he ignored a reading on a pressure gauge that gave the first warning of the impending disaster.

* The Bhopal plant lacks the computer system that more sophisticated plants use to monitor functions and alert staff to leaks.

* According to many plant employees, most workers panicked, ran for their lives, and ignored busses that sat idle on plant grounds ready to evacuate nearby residents. (<u>Seattle P.L.</u> 1/28/85)

The possibility that safety standards were unnecessarily low at Union Carbide's Bhopal plant has not been ignored. New Delhi's <u>Statesman</u> (Dec. 5) asserts that the accident's implications will be "far worse if it came to be suspected that (safety) standards are diluted in Third World countries." <u>The Times of India</u> (Dec. 5) calls the accident "avoidable" and urges the Indian government to "enact and enforce stern laws to arrest the slide in safety standards."

From the Frankfurter <u>Rundschau</u> of Germany (Dec. 5):"Third World countries, in their need, are inclined to overlook danger, and First World manufacturers are inclined to exploit this need."

Union Carbide maintains that their safety standards are the same in India as in the U.S. Recent findings by the EPA, however, suggest that Union Carbide doesn't have much to brag about. During the last five years Union Carbide's MIC plant in W-Va. has had 28 leaks. The plant failed to meet a legal requirement to report some of the larger leaks, an EPA spokesman said.(Seattle P.L 1/24/85) Residents who live near the plant have expressed their fears that what happened in India could happen to them as well; trust is at an all-time low. According to a report by the EPA, MIC is "a major source of air pollutants" in the region known as "Chemical Valley." (Seattle P.L 2/10/'85)

In addition, Union Carbide knew of the possibility of a "runaway reaction" of MIC at its plant in West Virginia less than



Lauran' Innes of India/New Delhi Bombay three months before one occured at its sister plant in Bhopal. This was revealed when a memo prepared by a Union Carbide safety inspection team was made public by Rep. Henry Waxman, D-Calif. "It looks like there's a possibility Bhopal could have been avoided," he said. (Seattle P.L. 1/25/85)

The risks associated with the production and use of pesticides are becoming more evident to developing rations, some of which view themselves as dumping grounds for chemical products that have been banned or inadequately tested.

Producers of toxic substances have responded to the Bhopal tragedy. Dr. James Gideon, an expert on control technology for the National Institute of Occupational Safety and Health put it in terms of the "deep pockets theory." "The concept that one accident can bankrupt even a large company is making them go back and seriously review their safety procedures," he said. (Onristian Science Monitor 1/30/85)









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Political and economic pressure is starting to mount. In Scotland, Union Carbide was refused permission to build a chemical plant after thousands campaigned against the plan, fearing a repeat of the Bhopal gas leak. More than 35 suits have been filed against the company, for a total of over \$200 billion.

A group of House members are pushing for legislation that would help prevent industral disasters in the U.S. The legislation would require the EPA to list 36 substances, including MIC, as hazardous pollutants under terms of the Clean Air Act. This would require regulations on the manufacturing of the substances. It would also establish a right-to-

know requirement, informing workers and the public about potential hazards.

On Dec. 17, 1984, the U.N. General Assembly voted on a resolution that will make available detailed information on pesticides and other hazardous chemicals that have been barned or carefully regulated in certain countries; the U.S. cast the only negative vote. (<u>Sterra Club News Letter</u>, 12/26/84)

The systematic sharing of information about hazardous chemicals is critical because of the ease with which industrial products and processes can cross national boundries. Less developed countries, their governments intent on promoting economic growth, often lack the means or the desire to effectively regulate toxins. At least 25 percent of U.S pesticide exports are products that are barned, heavily restricted, or have never been registered for use here. (Circle of Poison, Weir and Schapiro, 1981)

Exempting American exports from the high standards imposed on domestic products has two drawbacks. It may be accentuating the toxic substances problem in the Third World, and ironically, pesticides shipped out often come back contaminating the crops that they were used on. Approximately 10 percent of our imported food contains illegal levels of pesticides, according to the U.S. Food and Drug Administration. (1978)

For example, DBCP, a nematocide that kills worms which damage fruit, is believed to cause cancer and make humans sterile. Although its use in the U.S was suspended by the EPA, (except on Hawaiian pineapples) it is widely used on Central American barara plantations which service American markets. (Circle of Poison)

It is sad that tragedies need to be witnessed before corrective action is taken. In the case of Bhopal more than 200,000 people were affected. The backward approach that industry has taken, setting standards after an accident, is no longer acceptable when the price becomes human life and suffering.

