

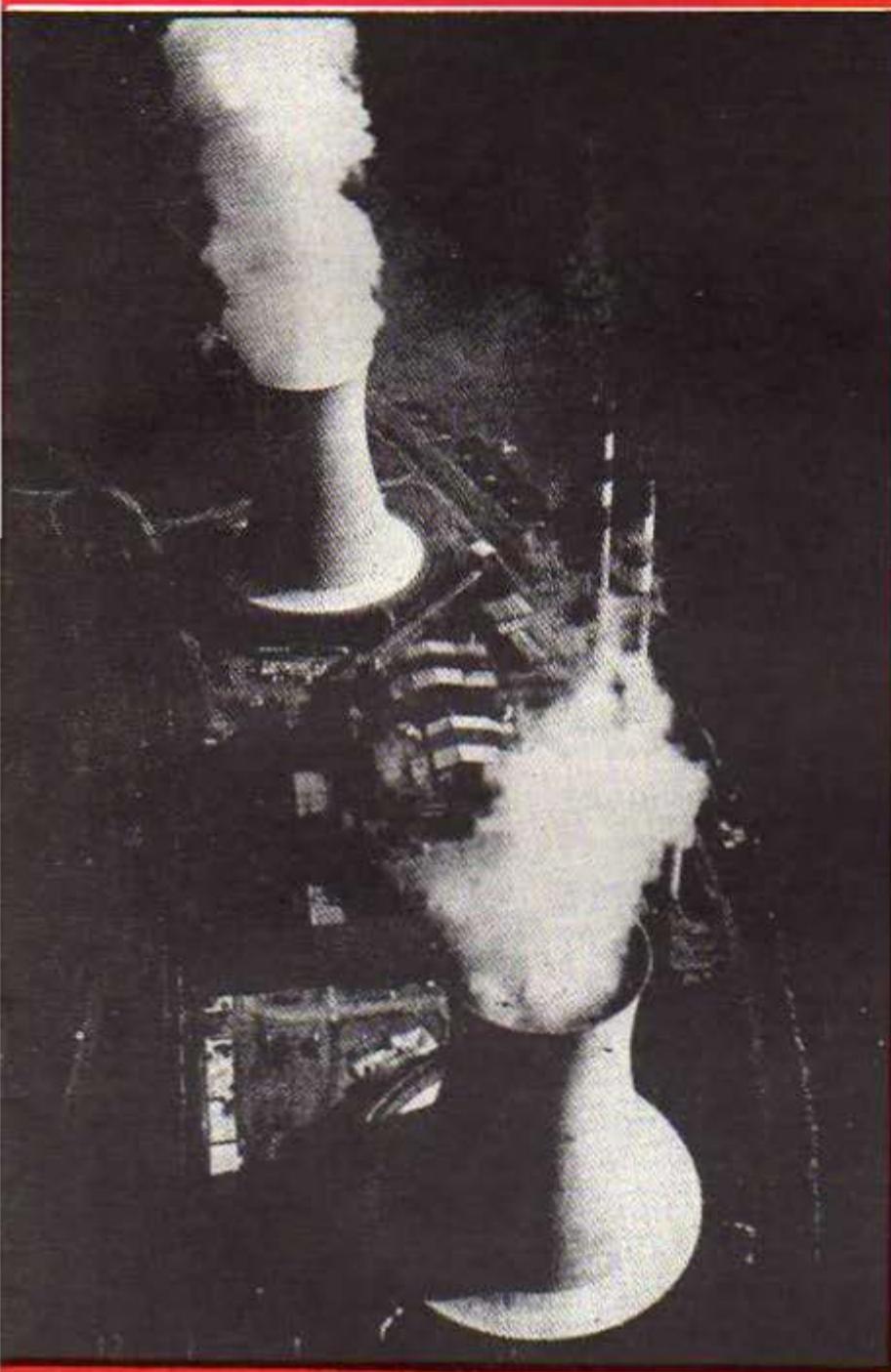
July/August 1979

Vol. 11 No. 4

\$1.25

SCIENCE FOR THE PEOPLE

THEIR PROFIT — OUR POISON



Runaway Nuclear Power
and

Three Mile Island

★ ★ ★

Chemical Wastes at
Love Canal

also:

Anti-Nuke Resources

Food in China, Part II

Science in Vietnam

SftP Conferences

Affirmative Action

CHAPTERS AND CONTACTS

Science for the People is an organization of people involved or interested in science and technology-related issues, whose activities are directed at: 1) exposing the class control of science and technology, 2) organizing campaigns which criticize, challenge and propose alternatives to the present uses of science and technology, and 3) developing a political strategy by which people in the technical strata can ally with other progressive forces in society. SftP opposes the ideologies of sexism, racism, elitism and their practice, and holds an anti-imperialist world-view. Membership in SftP is defined as subscribing to the magazine and/or actively participating in local SftP activities.

ARIZONA: Sedley Aileen Josserand, 3730 East Bellevue No. 9, Tucson, AZ 85716

ARKANSAS: Joe Neal, P.O. Box 1772, Fayetteville, AR 72701. Dotty Oliver, P.O. Box 2641, Little Rock, AR 72201

CALIFORNIA: Berkeley Chapter: Science for the People, P.O. Box 4161, Berkeley, CA 94704. Kevin Cadogan, 1033 Rose Ave., Oakland, CA 94611 (415) 658-7263. **San Francisco Chapter:** Lou Gold, P.O. Box 34161, San Francisco, CA 94134 (415) 584-0992. **Palo Alto Chapter:** c/o Palo Alto Tenants Union, 424 Lytton Ave., Palo Alto, CA 94306. **L.A. Chapter:** c/o Al Heubner, P.O. Box 368, Canoga Park, CA 91306 (213) 347-9992. Shel Plotkin, 3318 Colbert Ave., Los Angeles, CA 90066 (213) 391-4223. **Santa Cruz Chapter:** c/o Suzanne Serat, 2-3905 E. Cliff Dr., Santa Cruz, CA 95062, (408) 475-3471. Michael J. Williams, 328 51st St., No. 2, Sacramento, CA 95819, (916) 456-3647. David Schnitzer, 808 Roberto Ave., Santa Barbara, CA 93109, (805) 966-2057. Allan Stewart-Oaten, Biology Dept., UCSB, Santa Barbara, CA 93106. Al Weinrub, 104 So. 16th St., San Jose, CA 95112, (408) 292-2317. Dave Offen, 2044 Oakley Ave., Menlo Park, CA 94025, (415) 854-2422. Helen Nunberg, 802 E. 16th St., San Bernardino, CA 92404. **Irvine Chapter:** SftP, P.O. Box 4792, Irvine, CA 92716. **Davis Chapter:** c/o P. Hardt, 318 J St., No. 40, Davis, CA 95616.

COLORADO: Greeley Chapter: Michael Higgins, Dept. of Anthropology, U. Northern Colorado, Greeley, CO 80639, (303) 351-2021. Ted Scheffler, 1217 26th Ave., Apt. 103, Greeley, CO. 80631, (303) 351-0835.

CONNECTICUT: N. Sadanand, Dept. of Physics, University of Connecticut, Storrs, CT 06268. David Adams, Psych. Lab., Wesleyan Univ., Middletown, CT 06457.

DISTRICT OF COLUMBIA: Walda Katz Fishman, 6617 Millwood Rd., Bethesda, Md. 22034, (301) 320-4034.

FLORIDA: Gainesville Research Collective, 630 NW 34th Place, Gainesville, FL 32601. **Tallahassee Chapter:** c/o Progressive Technology, P.O. Box 20049, Tallahassee, FL 32304. Science for the People Communications Committee, Box U-6912, Tallahassee, FL 32313. Dinesh C. Sharma, 270 Delmar, Ft. Myers, FL 33931 (813) 463-0395

ILLINOIS: Chicago Chapter: c/o Ivan Handler, 2531 N. Washtenaw, Chicago, IL 60647 (312) 342-6975. **Urbana-Champaign Chapter:** 284 Illini Union, Urbana, IL 61801 (217) 333-7076

IOWA: Henry Howe, Dept. of Zoology, University of Iowa, Iowa City, Iowa 52242. Paul C. Nelson, 604 Hodge, Ames, IA 50010 (515) 232-2527

MARYLAND: Baltimore Chapter: c.o. Alternative Press Center 2958 Greenmount Ave., Baltimore, MD 21218

MASSACHUSETTS: Amherst Chapter: Marvin Kalkstein, University Without Walls, Wysocki House, University of Massachusetts, Amherst, MA 01002.

Boston Chapter: Science for the People, 897 Main St., Cambridge, MA 02139 (617) 547-0370.

MICHIGAN: Ann Arbor Chapter: 4104 Michigan Union, Ann Arbor, MI 48109, (313) 971-1165. **Lansing Chapter:** Eileen Van Tassell, 2901 Lovejoy Rd., Perry, MI 48872, (517) 625-7656.

MINNESOTA: Micky Lauria, 1418 E. 22nd St., Minneapolis, MN 55404 (612) 871-8874, (612) 323-4581.

MISSOURI: St. Louis Chapter: Science for the People, Box 1126, Washington University, St. Louis, MO 63130, (314) 533-1936. Joe Eker, Rm W-137, Box 29, Univ. of Missouri Medical Center, Columbia, MO 65201.

NEW HAMPSHIRE: Val Dusek, Box 133, Durham, NH 03824.

NEW YORK: Marvin Resnikoff, 84 DeWitt St., Buffalo, NY 14213, (716) 884-0497. Tedd Judd, Dept. of Psychology, Cornell Univ., Ithaca, NY 14853. **New York City Chapter:** c/o Red Schiller 233 E. 21st St., Apt. 18, New York, NY 10010, (212) 254-1365. **Stony Brook Chapter:** P.O. Box 435 E. Setauket, NY 11733, (516) 246-5053.

NORTH CAROLINA: Marc Miller, 51 Davie Circle, Chapel Hill, NC 27514, (919) 929-9332, 929-2141. Lesley Real, Dept. of Zoology, North Carolina State U., Raleigh, NC 27650.

OHIO: Jenny Thie, 2147 Fulton Ave., Cincinnati, OH 45206, (513) 281-6149.

OREGON: Portland Chapter: c/o Jacqueline Germain, 6916 NE Mallory St., Portland, OR 97211.

PENNSYLVANIA: Ruth Weinstein, 2116 Walnut St., Apt. 2R, Philadelphia, PA 19103, (215) 561-4323.

TEXAS: Ed Cervenka, 911 Blanco St., No. 104, Austin, TX 78703, (512) 477-3203.

VERMONT: Steve Cavrak, Academic Computing Center, University of Vermont, Burlington, VT 05405.

VIRGINIA: Jean Loria, Route A, Box 496, Apt. 7A, Charlottesville, VA (804) 973-1206.

WASHINGTON: Phil Bereano, 316 Guggenheim, FS-15, Univ. of Washington, Seattle, WA 98195, (206) 543-9037.

WISCONSIN: Cal Pierce, 525 W. Dayton No. 2, Madison, WI 53703, (608) 255-7019.

Chapters and Contacts Outside U.S.

AUSTRALIA: Tony Dolk, 17 Trade St., Newtown, New South Wales, 2042, Australia.

BELGIUM: Gerard Valenduc, Place Galilee, B.P. Galilee 160, B-1348, Louvain-la-Neuve, Belgium.

CANADA: Roy Johnstone, c/o Argyle High, 30 Argyle St., Winnipeg, Manitoba, Canada. **Toronto Chapter:** Science for the People, P.O. Box 25, Station "A", Scarborough, Ontario, Canada M1K 5B9. Allan C. Vaisius, Errindale Campus, University of Toronto, Mississauga L5L1C6 Canada, 416-828-5271.

DENMARK: Susse Georg & Jorgen Bansler, Stigardsvej 2, DK 2900, Hellerup, Denmark.

ENGLAND: Dave Hayes, 14 Goodwin Rd., Sheffield 8, Yorkshire, England. British Society for Social Responsibility in Science, 9 Poland St., London, W1V3DG, England, 01-437-2728.

INDIA: M.P. Parameswaran, Kerala, Sastra Sahitya Parishad, Parishad Bhavan, Chirakulam Road, Trivandrum 695001, India. Anand Kushwaha (Centre for German Studies) and B.S. Narwal (Postbag-01), Jawaharlal Nehru University, New Delhi 11067, India.

IRELAND: Hugh Dobbs, 28 Viewmount Park, Waterford, Eire. Phone 051-75757.

ITALY: Michelangelo de Maria, Via Torre Argentina 47, Rome, Italy.

QUEBEC: Bob Cedergren, Dept. of Biochemistry, Univ. of Montreal, Montreal 101, Quebec, Canada.

WEST INDIES: C. Raymond Mahadeo, Caroni Research Station, Carapichaima, Trinidad, West Indies.

W. GERMANY: Paul Otto-Schmidt, Forum fur Medizin, Kaiserdamm 26, 1000 Berlin 30, West Germany.

A chapter consists of three or more people meeting regularly. If you want to help start a chapter or be a contact person for your area, please contact Science for the People, 897 Main St., Cambridge, MA 02139. Tel: (617)547-0370

MAGAZINE COMMITTEES

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about this issue

In this issue we present an edited version of a pamphlet written by two SftP members in response to the Three Mile Island disaster in late March. We hope that this article will serve as an organizing tool to help build a larger anti-nuclear movement. The article surveys the catastrophic potential, long-term health hazards and economic myths surrounding the nuclear power industry. In its clear call to action, it reminds us that what is needed is not merely a better understanding of the dangers of nuclear power, but a political force with the power to "end this nuclear madness."

Although the problem of nuclear waste disposal has been brought into focus since the disaster at Three Mile Island, the disposal of industrial chemical wastes may pose a hazard of more immediate and even greater magnitude. In addition to the thousands of known dumps, each year hundreds of hidden and illegal disposal sites are discovered. An ever widening circle of people find their lives affected by these chemical poisons. The article on Love Canal in New York State describes the consequences for an unsuspecting population of the disregard for their health by the chemical industry and the local government. This article demonstrates that this is an issue that can make people conscious of the injustices of our economic system and of the need for a militant response in dealing with these issues.

In this issue, we also present the text of a speech and subsequent question and answer session by Nguyen Van Hieu, a Vietnamese scientist who visited this country early this year. Hieu describes the development and present structure of scientific research and education in Vietnam. It is apparent that the Vietnamese people face a task of enormous proportions in rebuilding their many-times ravaged country. We are hopeful for their success, given the heroism and persistence expressed by the Vietnamese in their decades of struggle against imperialism. This interview gives a picture of a surprisingly broad-based Vietnamese science. However, it raises as many questions as it answers about the present structure of research and education, the class nature of present day Vietnam (especially with regard to the position of scientists and other intelligentsia) and the extent to which progress against elitism has been made. To answer these questions requires a greater exchange of information and resources between our two countries, an effort in which we hope that SftP can play a role.

Any discussion of class relations in Vietnam raises questions about its internal development, its foreign policy, and its relationships with other socialist countries. Similar questions are raised with regard to a discussion of the Chinese situation. In printing this article about Vietnam and the continuation of the article on the agricultural system in China, we are not taking a position with regard to these broad questions. We feel that each article can teach us something about the specific issues raised. We would like, however, to solicit debate among *SftP* readers regarding the important questions not dealt with in these articles. To what extent can one compare strategies for development and socialist transformation between countries with different histories and levels of industrialization? How much progress in egalitarian relations can we anticipate in socialist nations given a prolonged crisis situation where survival is the first goal? Is it possible, or even desirable, for a developing country to become industrialized without pursuing a model of development similar to that of the advanced capitalist nations? What is the relation, if any, between domestic industrialization, internal social structure and a "socialist" foreign policy?

We are pleased to include in this issue brief reports from the first National Conference of SftP and from the Western Regional Conference. The fact that after ten years SftP has held its first national conference hopefully signals a new period of growth and development for the organization. Translating the resolutions of these two conferences into a vital national organization will require continued commitment and discussion. Much of this discussion will take place in the SftP Internal Discussion Bulletin over the next year and we invite everyone interested in SftP to take part in this process. □

SPECIAL ISSUE ON CANCER

The SftP Editorial Committee for the Midwest Region has decided to do a special issue of *SftP* magazine on the theme of CANCER. We are now soliciting articles, reviews, outlines for potential articles and graphics. Publication will be in the spring of next year. Material can be sent to any of the following Midwest chapters: Ann Arbor, Chicago, Champaign-Urbana and St. Louis. See the chapters & contacts list on the inside cover of this magazine for the addresses.

letters

Dear SftP:

Firstly, I would like to let you know that the Nov./Dec. 78 issue was one of the best issues put out in a while. A central theme for the issue was a great idea, and the editorial committee deserves a pat on the back for the diversity of articles within that theme.

The stories were all testimonials for the virtues of *action* after research, and certainly progressive people need very positive, action-oriented, people-oriented programs to work around, helping ease the paradoxical strain of life with capitalism.

I was very impressed with the deep level of commitment and passion for hard work the People's Coalition to Stop Institutional Violence has mustered up for the struggle about the psychiatric prison for women proposed for Worcester, Mass.

As they pointed out, there is much to be skeptical about as to the function of psychiatry, psychology etc. that asserts to adjust people to behave in a group (society) while totally ignoring that group in the methods of rehabilitation. Using all individualized forms of diagnosis, treatment, needless prolongation of treatment at community centers, points very clearly to the motives of those who wish only to have a market for extensive technology, myriad drugs, impressive salaries and most importantly, control of the bonds people might form to fight back.

Of course, behaviorists, sociobiologists, psychologists, newly developed theories, and the ones that have endured some scrutiny down through the years, all must be shown for what they really are, the efforts of the ruling class to subvert *any* kind of people's group, solidarity, unity programs. Our culture turns on the individual, a dangerous situation, no doubt. That's at the base of any progressive cause, that's really what the battle's all about. Can people control their individual selves, to be effective for the group.

As far as the scientific fields of struggle you people are doing a very exceptional job. The depth of research for articles has greatly increased.

With thanks, in struggle,
Marty Bauman

Dear SftP:

Science for the People has consistently contained articles, and focused on issues of relevance to our clinic's work. The recent article on institutionalization of women, and previous articles on the drug industry (Eli Lilly Co.) & psychosurgery were particularly valuable resources for our drug education and mental health advocacy projects. We continue to use and appreciate the comprehensive and timely articles featured in your magazine.

Sincerely,
Roanne Olonoff,
Switchboard/Crisis
Intervention Coordinator
Berkeley Free Clinic
Berkeley, CA 94704

Dear SftP,

Still the best but slipping slightly. Don't know exactly why. I enjoy the letters and chapter reports most so I suppose I am interested in concrete political activity and opinions. The articles seem to be of more archival value. That is, when I need to know about Occupational Health I pull down SftP's and then Fran Conrad's article is absolutely first rate. But until I *need* to know it there is too much to absorb. Still, I would not like to see such articles changed. Perhaps a good sharp summary would help. Would like more political articles about people's feelings about socialism.

Joseph Schwartz
London

Dear SftP:

1) I thought I renewed my subscription a while back in the fall. Please check your files, and extend for 2 years if I did.

2) I read *SftP* to keep aware of the failures of materialism/capitalism/industrialism. However, I believe the problems are far deeper than your analyses indicate. Both capitalists and socialist/Marxists share far too many to me unsound assumptions, some materialistic, some manipulative, some arrogant about the relationship of man to nature and to the earth. As the industrial world, human society and our environment slowly disintegrate, we shall have to examine the scientific/technological premises at their roots. As a scientist I see no sign of this happening outside the 'mystical' community. Good luck.

A.K. Betts
West Pawlet, VT

Dear SftP:

SftP contains interesting articles and analyses of social, political, and economic situations in USA and abroad, which is also our background for the information we need and publish in our Tricontinental Magazine.

OSPAAAL
Havana, Cuba
"Tricontinental" Magazine

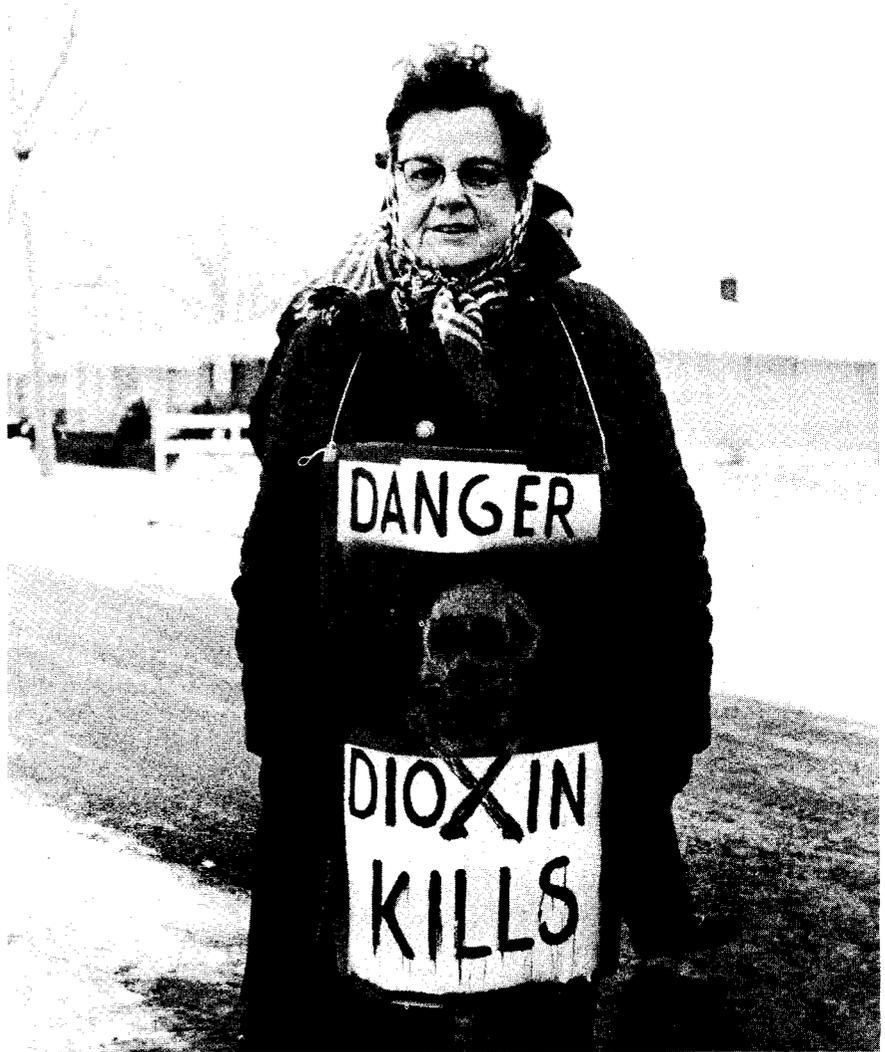
Dear SftP:

Generally I like *SftP* and find it useful in my work. In particular your articles on recombinant DNA & sociobiology have been helpful and I have used them in my teaching. I would like to see more articles on scientific controversies & ethical issues, especially when the articles have something new to say. Your recent emphasis on health care issues is less relevant to me — important as these issues are, it seems that there are other organizations (eg. Health/PAC) which deal with these questions. I am more interested in the politics of scientific research. I appreciate your articles on science & technology in developing countries and would like to see more of these. Finally, although I appreciate your political perspective & analysis, I think that your use of rhetoric is often counter-productive: it can confuse people and in some instances may result in our movement's losing potential allies. And above all I believe that SftP needs wider distribution and exposure.

Margaret Alic
Portland, OR

LOVE CANAL: CHEMICAL WASTES BACK UP

by Buffalo NAM Chapter



Niagara Falls is a small city in western New York state, a few miles from Buffalo. It is now known as the home of Love Canal, a former chemical dump, which was covered over with residential housing in the 1950s. Dark pools of foul, stinking chemicals seeping upward into the basements of homes were the first signs of the disaster. Within weeks, what at first had seemed a localized pollution nuisance suddenly exploded into a health and environmental catastrophe with international significance. Much has already been written and said about Love Canal. Yet, in all this writing and discussion, Love Canal and its political meaning remain poorly understood. Most of the journalistic analyses have ended up where the chemicals are — on the surface of things. It is worth asking why.

An answer begins by noticing that nearly all the media attention has been focused on the cleanup, the disaster relief, the roles of the state agencies and the Environmental Protection Agency (EPA), and the other aspects of emergency response. What has been conspicuously missing from this extensive reporting is any

sustained discussion of the causes of Love Canal. It is not just that Hooker Chemical, the producer of the poisonous wastes in question, is rarely mentioned. The point more generally is that the economic and industrial practices that created Love Canal, including Hooker's "business as usual" approach to the disaster, have gone unexamined and uncriticized. Reading much of the coverage, we might think we had been hit by some natural disaster. But Love Canal is not some sort of "Blizzard of '78"; it is, quite clearly and simply, a business-made disaster. And the way to understand it is not as a problem of waste disposal, but rather as part of a gigantic system of waste production and waste mismanagement that is routinely practiced by American industry.

It is almost impossible to grasp the extent to which environmental poisoning has been a central feature of Hooker Chemical's operations. The first lab findings, made at the insistent prodding of concerned residents in

This article is reprinted from the March 1979 issue of the Buffalo Newsletter, a publication of the Buffalo chapter of the New American Movement (NAM).

the Love Canal area, revealed over 80 chemical compounds in the oozing sludge — most of them toxic and many of them known cancer causing agents. Subsequent tests have found more. The lengthening list has recently been capped by the discovery of dioxin — perhaps the most lethal chemical in the tested samples. Study of the affected residents has revealed a grisly pattern of genetic damage. The first searches of health statistics revealed that women in the area had 50% more miscarriages than normal and gave birth to children with an extraordinary incidence of birth defects. In the southernmost section of the area, four of twenty-four youngsters are retarded. Researchers warn that these are only the most obvious indicators. The sophisticated testing now underway is certain to detect more subtle manifestations of environmental disease and toxification; they add that it may be more than twenty years before the full effects of the

waste poisons become visible in the tissues and bodies of Love Canal residents.

It would almost be a relief if we could blame all this on Hooker Chemical and consider Love Canal an exception. But the truth is that this disaster is only the most recent and, for the time being, most spectacular incident in a developing pattern of disasters caused by the production systems of American industry. The deadly chemicals discovered in the canal area are typical creations of the post World War II chemical revolution. In the frantic competition of the postwar era, corporations scrambled to be the first on the market with a new "miracle" product or process, and to reap the enormous rewards associated with these new chemicals. In a pressure cooker race for profits, operating in great secrecy and haste, corporations gave little attention to the hazards presented by these compounds, and the problems

Canal Residents Organize

Love Canal is a disaster of enormous scope and complexity. But the residents of Love Canal, suddenly thrust into an international spotlight, have refused to play the role of passive, frightened disaster victims, grateful for crumbs of assistance. Instead, they have built an increasingly well-informed and effective defense organization, led entirely by local women.

This group, the Love Canal Homeowners Association (LCHA), has fought steadily for a governmental response adequate to the scale of the disaster. In the process, they have begun to define an important new kind of community based environmental politics.

The LCHA was founded in July 1978, and rapidly achieved a membership of 1200 families, comprising most of those living in the Love Canal area. New York State met the initial demands of the residents by evacuating 235 families living in what was defined as the immediate emergency zone, buying their houses at full value. But it has refused to acknowledge that residents in adjacent streets are also in urgent need of redress, their homes worthless in market terms, and their health gravely endangered.

The state has clung to its position despite mounting evidence that the chemical contamination has oozed well beyond the first ring of houses and that its toxicity is more terrible and uncontrollable than anybody can really gauge. The LCHA's battle for expanded protective and rehabilitative programs has therefore become, of necessity, a battle to force broader public recognition of the catastrophic extent of Hooker's chemical warfare against people and the environment. They have had to take on the larger task of demonstrating the alarming inadequacy of the "business-as-usual" response of the corporations and public agencies.

In December 1978, after months of inconclusive and frustrating meetings with Albany, the LCHA turned to direct action. Picket lines were set up outside the Love Canal site in an effort to halt the initial remedial work undertaken (digging drainage trenches and clay-capping

the surface) because studies indicated the work might expose un-evacuated residents to further hazards. More generally, the pickets sought to build public support for their efforts to win broader, immediate protection for all those whose lives and property had been affected.

Seventeen people were arrested during the first days of picketing, but all charges were subsequently dismissed by a Niagara Falls judge undoubtedly aware of the growing public support for the Love Canal residents.

More recently, the LCHA has carried the battle beyond Niagara Falls. On January 11, a delegation came to Buffalo to confront Dr. David Axelrod, the New York State Health Commissioner. He declined to act, refusing to acknowledge in any way the legitimacy of the residents' claims, or the urgency of the situation. But his refusal at least made clear to the residents that they could expect very little more from the state without massive public pressure. Consequently on January 13 LCHA sent representatives to the public hearing in Buffalo conducted by the U.S. Department of Energy on the nuclear waste problem at West Valley N.Y., the site of Getty Oil Co.'s now abandoned nuclear reprocessing plant. At that meeting they underscored their solidarity with those fighting the threat of further nuclear contamination.

By striving to identify the common issues in these two different struggles, the Love Canal Homeowners Association has helped to generate a broader political momentum which may prove to be one of the most important results of the Love Canal disaster. Because of the struggles arising from the Love Canal and West Valley, Western New York is rapidly emerging as a focal point of a new environmental politics, a movement focused on issues of industrial waste and based on coalitions of neighborhood groups, environmentalists, organized labor, and activist community-based socialist organizations. □

encountered in their disposal after use, nor did they investigate the effects of wastes generated in production. As concern mounted outside the chemical industry, and early environmentalists began to point to the dangers of the reckless proliferation of these compounds, chemical companies refused to consider the criticisms, often vigorously attacking their opponents as anti-progress while deliberately withholding new information that reflected badly on their products. In such a situation, irresponsible waste disposal policies and environmental disasters like Love Canal became inevitable.

25 Year-Old Bargain Becomes Modern Nightmare

The Love Canal was originally intended to be an inter-lake ship canal, bypassing the Niagara cataract. It was abandoned in 1894. In the 1920's, the City of Niagara Falls began dumping garbage and fly ash in the 30 foot deep canal. Hooker purchased the big ditch in the 1930's and dumped chemical waste into it between 1942 and the early 1950's. In 1953, it sold the canal to the Niagara School Board for one dollar. A clause in the deed carefully exempted Hooker from any liability for damages to people or property traceable to the buried chemicals — indicating that Hooker was aware enough of the potential dangers to pre-arrange a legal cover. And they weren't alone in this awareness. A study done at the time of the sale urged the Board to reject the purchase because of the chemical dangers. But the School Board apparently was too tempted by the bargain to care about the predicted health problems. The canal was capped with clay, and in 1955 the 99th Street School was built directly on top of the chemical vaults. Neighborhood development followed soon after.

It took 25 years for the price of the 1953 bargain to be fully realized. Alarm has been widespread since early August, when an announcement by the New York State Health Commission recommended the evacuation of all pregnant women and children due to "the extremely serious threat and danger to health and safety." Although the State and Federal authorities have tried to move quickly, their efforts have been controversial and generally unsatisfactory, which isn't surprising given the enormity of the human problems, the lack of preparation, the legal complexity and the enormous costs of an adequate response. Estimates of the cost of the cleanup begin at \$22 million and there is really no assurance that the most hazardous chemicals can ever be eliminated from the soil.

More frightening still is the realization that the Love Canal is by no means a lone example. In the Buffalo area alone, surveys have identified 30 industrial waste disposal sites and the EPA now estimates that there are as many as 32,000 inactive hazardous waste dumps throughout the country of which at least 638 pose "a significant imminent hazard to public health." There are some 20,000 toxic chemicals in commercial

production: another 500 are added each year. The health risks they pose have never been fully evaluated. About 270,000 companies produce toxic wastes and roughly 10,000 contractors work to dispose of them.

The situation is clearly out of control. The government estimates that about 2 billion pounds of hazardous wastes are generated in this country every week. Only a small percentage of this waste is properly disposed of. Essentially, hazardous waste disposal is managed by a host of small companies operating under little or no government regulation. In those few states where regulation does exist, it is often more form than substance. In Oregon, for instance, the state is required to examine and approve every type of waste material put into a site. But these requirements are undercut by the same realities hobbling regulation elsewhere: a lack of trained investigators, absence of technical backup and unclear investigative procedures. In Oregon, both the disposal companies and the regulators are forced to rely on a single source for detailed analysis of the waste contents — the producing company itself. "We don't do any testing ourselves," said one beleaguered official, "we rely on the integrity of the manufacturer." This concession points to the problem — the huge chemical corporations have other priorities in mind than integrity.

Inadequate or non-existent regulation at the state level has also shifted the spotlight to the Federal government where environmentalists look to the EPA to protect communities against the chemical companies. But EPA has fallen far behind in the battle to recognize the waste problem and deal with it. As was frequently pointed out in the news coverage of Love Canal, the powerful agency has become tangled in contradictory programs and conflicting directives. It has not even issued the waste control regulation required of it under the 1976 Resource Conservation and Recovery Act.

The frustration of dealing with the agency has produced a good deal of the anger and resentment characteristic of the local response to the Love Canal crisis. Most of this criticism has certainly been deserved. But there is something suspicious about the demand for stronger regulation coming from the media — which have so warmly embraced Jack Kemp, Howard Jarvis and others who cry for the limitation of funds for government regulation and who would undercut the ability of government agencies to address social needs. These same voices now unite to denounce the EPA's failure to act more strongly and aggressively. Such criticism has a darker side as well — by barely mentioning the corporations and blaming the whole mess on the easily targeted bureaucracy, the local media encourages cynicism and discourages the kind of strong public role so obviously needed. Hardly coincidentally, such coverage effectively deflects attention away from the waste producers.



The producers remain central to every aspect of the problem, including the inability of the EPA to carry out its work. The agency has claimed that a good part of its failure stems from funding that is nowhere near adequate to perform the investigative and regulatory tasks assigned to it. EPA officials complain of intensive political pressure on Congress and the agency from large chemical corporations, a claim verified by observers in the nation's capital who have witnessed the steady stream of industry lobbyists working to further limit the power of the EPA — in the same way that they hobbled the Occupational Safety and Health Administration (OSHA). These lobbyists argue that excessive concern with safety and the environment will undercut productivity, profits and jobs.

Larger 'Love Canals' Ahead?

Questions about regulation, government response and bureaucracy, while important, must not be allowed to dominate public discussion of the issue. To do so is to allow business to shift the focus away from itself — away from the source of the problem and onto the effects. More accurately understood, the catastrophe at Love Canal should serve to direct attention towards an immense problem facing our society, one that the large corporations have ignored and disguised for over thirty years. The problem, simply put, is a production system whose high rate of profit depends on minimizing or avoiding the costs of waste disposal — either by dumping wastes into the "public" air, land and water, or by transferring the costs of environmental safeguards to the public.

Until this problem is confronted directly, until responses to the waste disposal crisis work their way back to the waste production system at its root, we can expect little more than a succession of ever larger Love Canals. It is increasingly clear that we must organize politically to point the debate in the right direction. The corporations of America, increasingly churning out products for profit have created vast quantities of waste — actually a system of waste production, whose byproducts become increasingly more toxic as technology becomes more advanced. They have successfully resisted all efforts to regulate what they may produce, how they should produce it, and where they will dump the wastes. The fish-killing sludges in the Atlantic, radioactive waste in West N.Y. state, and Hooker's chemicals in Love Canal — these and a wide array of pollutants like them have entered our bodies, seeped into our houses, and threaten our future generations. The limits of corporate evasion and irresponsibility have long been passed. "There is no place to hide."□

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Three Mile Island and Nuclear

Even though federal inspectors knew in the early afternoon of Wednesday, March 28 that the uranium core in the reactor at Three Mile Island (3MI) was seriously damaged, two days went by before news of the danger was made public (1). By not ordering an immediate evacuation, corporation and government officials chose to gamble with the lives of a million people in four surrounding counties in order to protect the reputation of the nuclear power industry.

Media coverage of the 3MI disaster reflected a similar attitude. Although extensive, it generally underplayed the true magnitude of the actual and potential hazards and gave feature coverage to the NRC and other government officials who showed more concern about the future of the nuclear industry than about the health and safety of the people. The nuclear industry and its government supporters are already issuing false threats of electrical blackouts and economic dislocation if the nuclear spigot is closed. Clearly, the nuclear industry will not give up without a struggle. We must be willing to engage them in that struggle. *Now* is the time to end this nuclear madness.

The Harrisburg disaster has resulted in a groundswell of antinuclear sentiment and activity. A growing number of scientists, technicians, health workers, economists, and politicians — many of whom were originally pro-nuclear — have come to recognize that the continued development of nuclear energy poses clearly unacceptable threats to our health and safety without prospect of cheap electricity. It is now our job to learn the facts about nuclear power so we can help to educate

Carol Cina and Ted Goldfarb are longstanding members of the Stony Brook chapter of Science for the People. Ted teaches chemistry and Carol is a graduate student at Stony Brook SUNY. Both are very involved in the anti-nuke movement on Long Island.



Miriam Struck

our neighbors and co-workers. It is time to join coalitions and to organize a powerful political force opposed to both nuclear power and the intimately related and ominous issue of nuclear weapons. This article is designed to contribute to that process of education and to suggest an appropriate course of action.

How close the 3MI reactor came to a complete meltdown we will probably never know. Uncharacteristically, Metropolitan Edison (Met Ed) and officials of the Nuclear Regulatory Commission (NRC) admitted that they were concerned over a period of several days that such a catastrophe might indeed occur. The extreme degree of concern and confusion is reflected in the transcripts of the NRC's secret hearing held during the emergency (2).

Power

by Ted Goldfarb and Carol Cina

Immediately following a water coolant failure, the energy releasing fission process is supposed to be shut down by the imposition of neutron-absorbing control rods into the reactor core. The problem, however, is that reactor shutdown alone will not control the heat buildup due to the intense radiation in the reactor — the core must still be cooled by circulating water. During the operation of any reactor more than 200 different types of radioactive atoms are produced in the fuel rods and the cooling water. Although 3MI was in operation for only about three months, its core was already loaded with highly radioactive material. If the same accident had occurred several months later when much more radioactive waste had been created, the results might have been much worse.

At the time the fission reaction was shut off, water had to be quickly circulated through the core or the temperature would have risen above the 3200°F melting point of the fuel rods, causing their molten contents to dump onto the containment floor. This would have resulted in one of two consequences: the water present could have been rapidly vaporized causing a steam explosion that would have ruptured the four-foot thick steel and concrete dome, spewing forth its lethal contents into the air above. Alternately, the intensely hot core could have melted down through the base of the building and through the earth below until it reached the geologic water table (not far beneath 3MI or most other reactors) where it would produce a geyser of steam and debris containing huge quantities of radioactive materials. In either case, the prevailing winds would distribute the waste over thousands of square miles. Tens of thousands of people would die within days, hundreds of thousands would suffer serious short-term after effects, and increases in the cancer and muta-

tion rates would affect incalculable numbers of people. The contaminated area would be unsuitable for human habitation and agricultural production for hundreds or thousands of years.

In the 3MI nuke, enough of the core remained uncooled for a sufficiently long time to cause considerable damage and a partial meltdown.(3) In addition, the cooling water reacted with the overheated fuel rods to produce a large gas bubble, an event not anticipated by reactor designers or safety regulators. This bubble interfered with the cooling process and presented the serious threat of a hydrogen-oxygen gas explosion. Such an explosion could easily have ruptured the cooling pipes and triggered a complete meltdown, a catastrophic result which was fortunately averted — this time. The crucial questions in the 3MI disaster — how much radiation was released, and what will be its long term effects — still remain unanswered.

The Radiation Release

Contaminated steam vented from the reactor containment building carried with it some of the more volatile radioactive atoms which leaked from the damaged reactor rods.

The threat to health and life posed by a radioactive substance depends on several factors. These include the amount of material released, the length of time it takes for the substance to disintegrate (measured by half-life, the time required for half the atoms to decay away), the likelihood that the substance will enter the human body through inhalation or through the food we eat or drink, and the fate of the substance once inside the body.

The gases released from 3MI contained radioactive krypton and xenon(4). These gases were primarily responsible for the high radiation levels recorded in a one to fifteen mile radius of the reactor. Another radioactive substance released was iodine-131. This substance, which can enter the body through milk, other dairy products, and seafood, was a contaminant in both the vented steam and the cooling water which was dumped into the Susquehanna River(5). It was detected in milk produced near Harrisburg a few days after the reactor failure(6). Iodine is concentrated by the human thyroid and poses a particularly serious threat to infants and young children.

For how long do these radioisotopes pose a threat? Krypton and xenon are inert gases and dissipate relatively rapidly after their release. Most of the radioactive forms of these atoms and iodine-131 have short half-lives (a few hours to a few days), and this fact is often used to suggest that they are dangerous for only a short period of time. This is not *necessarily* so — if large quantities are initially present they can remain a danger to health even after the passage of many half-lives.

Many other highly radioactive substances remain in the reactor core and cooling water. Some may still be released during the reactor cleanup. A total meltdown would have caused them to rain down on hundreds of thousands of people. One of these substances is strontium-90. This long-lived substance is a close chemical relative of calcium and would be deposited specifically in bones and teeth.

One of the most irresponsible statements featured in the media coverage of 3MI was the early assurance by HEW Secretary Califano that the radiation released would result in no injuries or deaths among the exposed workers or the two million people living within 50 miles of plant(7) — a statement which has already been modified twice by Califano as of this writing(8).

Met Ed president Creitz admitted that the amount of radioactive material released during the first several hours of the disaster is not known, since it wasn't monitored.(9) Since then, the NRC and other official agencies which control the information have issued sporadic reports of radiation levels in the area, making it impossible to determine the total public exposure accurately.

In striking contrast to Califano's assertion, some experts on the effects of radiation have calculated that approximately 60 excess cancer deaths had already been assured from the radiation level reported during the first week following the reactor failure.(10) No estimates have been released as yet of the genetic damage which will show up as birth defects in the children of those exposed. Califano's statement is an echo of the industry's ludicrous claim that no one has been killed or injured by any commercial nuclear reactor. Those who spread these lies hope that the public will not recognize that low-level radiation is an insidious killer. No immediate damage is apparent and laboratory tests will reveal nothing. Nevertheless, the hidden injuries will show up with absolute certainty during the next 30 years.(11)

Radioactive substances emit high energy x-rays (called gamma rays) and tiny particles which move at high speeds. Gamma rays can penetrate our bodies, while tiny alpha and beta particles are a threat when we swallow or breathe in the substances that produce them. These rays and particles cause chemical havoc within the cells they strike. If the chemicals that control cell division are affected the cell can divide wildly, producing cancer. If the blood-forming cells are affected, leukemia can result. The time between the damage to the cell and the onset of the disease is unpredictable — but can often be as long as 20 or 30 years, or more. If egg cells or sperm cells are affected, a wide variety of birth defects will show up in future generations.

The pro-nuclear propagandists stress the fact that we are all exposed to radiation from cosmic rays and from small amounts of naturally-occurring radioactive material that is literally everywhere. This should provide no comfort since this unavoidable background

radiation is suspected by most experts of being responsible for as much as 2% of the naturally occurring cancers and mutations! It has long been suspected by many radiation and cancer experts that any additional public exposure to radiation, no matter how small, will cause an increase in cancer and mutation rates. This expectation is now being confirmed by long-term studies on workers at military nuclear installations. The results of epidemiologists and statisticians such as Samuel Milham, Thomas Mancuso, Alice Stewart, and George Kneale indicate that low-level radiation is far more hazardous than studies of Japanese survivors of Hiroshima suggested. (11) As soon as Mancuso's painstaking studies began to uncover these consequences, his contract was terminated by the Department of Energy, which had originally commissioned the work.

In response to these revelations many radiation experts have demanded that the radiation standards for worker exposure be lowered. The industry has strongly resisted, since lowered standards would mean hiring more workers. In fact this may not be a progressive step since the total exposure and its effects would probably remain the same. They would merely be spread out over more workers!

Radiation is still being emitted by the heavily contaminated plant. The removal of the thousands of gallons of highly radioactive water and debris from the damaged reactor core threatens future atmospheric releases of unknown magnitude. Small amounts of radioactive iodine have already appeared in milk from the surrounding area.(12) Yet the public has been officially informed that the emergency is over(13) and no worker in the threatened area can be absent from her or his job without fear of reprisals.

Most curious is that in all of the media coverage of the 3MI disaster there seems to have been absolutely no mention of plutonium. This is a strange omission because plutonium is present in *all* nuclear reactors.

The Plutonium Factor

No mention of plutonium — the ultimate poison? Could it be that the NRC and other government officials were afraid that public panic might result from calling attention to this super-lethal substance? Surely they must know that a reactor the size of 3MI which had been operating for three months would already contain over 200 pounds of plutonium.(14)

Plutonium is one of the most lethal substances ever produced. It does not occur naturally on Earth, but is formed in all nuclear reactors from the uranium fuel. In a meltdown the hot plutonium would react with the oxygen in the air to form a cloud of tiny dustlike particles of plutonium oxide. Based on animal studies it can be estimated that if only one of these dust particles containing as little as 10 billionths of an ounce of plutonium

is inhaled, the human victim will be almost certain to develop cancer within the following one to 30 years.(15)

Put another way, if only one ten-millionth of the plutonium in the 3MI reactor core had ended up in the lungs of human beings, over 200,000 cancers would have resulted! What's more, plutonium can also get into the human body through the digestive tract. It ends up in the bones, gonads and other glands where it can cause a wide variety of cancers. Plutonium-239, the form produced in the largest amounts in reactors, remains deadly for over 200,000 years.

The underestimation of the magnitude of the plutonium threat has been recently confirmed in studies done by epidemiologist Dr. Carl Johnson. He reports a 140% increase in testicular cancer and significant increases in other malignancies due to small amounts of plutonium released during the manufacture of nuclear warheads at the Rocky Flats, Colorado military installation.(16) Dr. Johnson's carefully-controlled studies involved people living as far as 13 miles downwind from the plutonium source.

It requires less than 20 pounds of plutonium to make a nuclear bomb. The plutonium being manufactured in the fuel rods in all of the 72 presently licensed U.S. nuclear reactors — as well as the many others around the world — could be diverted through theft or sabotage to any nation or group interested in entering the atomic weapons club. In 1945 there were only a few hundred pounds of plutonium in the world. Today the U.S. alone has several hundred thousand pounds. Each reactor adds 1,000 pounds more per year to the inventory of this unimaginably hazardous material.

The Radioactive Waste Problem

The failure of the nuclear industry and the NRC to take the problem of radioactive waste disposal seriously is one of the clearest examples of their criminal irresponsibility. For years the public has been assured that a safe disposal system was being developed. Recent reports by various government agencies make it clear that no such solution is anywhere in sight.(17) Indeed, a growing number of scientists believe that no acceptable solution will ever be found.

Hundreds of thousands of pounds of radioactive wastes are being produced by the nuclear industry each year. Mining and milling of uranium ore produces huge piles of waste material called tailings. These tailings release lethal radon-222 gas which threatens the lives of mine workers as well as residents of towns near the huge, dusty, windblown piles into which they are heaped. Additional wastes are generated in every other phase of the uranium fuel cycle as well as in the reactors themselves. During the reactor's operation much of the non-radioactive core materials become radioactive due either to neutron absorption or to neutron-induced

splitting. Consequently reactors significantly increase the amount of radioactive material in existence. Not only is this an increase in quantity, but much of the radioactive material produced is more deadly than the U-235 with which the reactor was fueled.

So-called low-level wastes are buried in rural sites in six different states. Leakage of radiation into nearby streams has occurred in at least two of the sites.(18) At Hanford, Washington 500,000 of the 65 million gallons of high-level wastes stored there have already leaked out into the ground only five miles from the Columbia river!

Each year one third of the fuel rods in each commercial nuclear reactor must be replaced. These rods containing their burden of plutonium and other high-level wastes are presently being stored in large pools of water at each of the reactors. The reason is that no plan exists to deal with them. But this temporary solution is unsafe. They were supposed to be reprocessed at commercial plants which would remove the plutonium and remaining uranium for fabrication into new fuel elements. The only such plant that ever existed in the U.S. was operated for a few years by a Getty Oil subsidiary in West Valley, New York. It was an economic and ecological disaster,(19) since it could not operate while keeping internal radiation at safe levels. A legacy of 600,000 gallons of high-level wastes remain, steadily

NYC NAACP ON NUKES

Statement by Leon Harris, President, Greenwich Village-Chelsea NAACP:

The NAACP national board recently reaffirmed its position in *favor* of nuclear power. I am here today to say that I think this is a deeply mistaken position, and that I do not believe the membership of the NAACP is behind it at all. It is especially discouraging that our national board is virtually *alone*, except for corporate hirelings, in defending nuclear power after the Three Mile Island incident.

Black people in America have nothing to gain and everything to lose from nuclear power. We reject as false the idea that nuclear power creates jobs. The increase in cancer rates and the danger of calamitous accidents threaten Black people as much as — and maybe more than — the population in general.

Our branch of the NAACP has been campaigning for some time *against* nuclear power. We've held public meetings and debates on the subject, have joined in anti-nuclear demonstrations, and have submitted a resolution against nuclear power to the NAACP national convention, to be held next month.

We hope our national convention will discuss this issue. We believe that if it does, the national board's pro-nuclear position — which puts us on the wrong side of one of the most important social issues of the day — will be soundly defeated.

corroding their way through storage tanks. Estimates of the cost of cleaning up that mess — if anyone ever figures out how to do it — run to a billion dollars. There is no plan to charge Getty a penny for this outrage.

The "Cheap Power" Lie

Although the 3MI disaster has seriously discredited the "safe power" assurances of the nuclear power industry, most people still seem to believe the claims of the utilities and their suppliers that nuclear power is "cheap power". Nothing could be further from the truth.

The costs of building a nuclear power plant have skyrocketed.(20) The reactor being built by the Long Island Lighting Company (LILCO) at Shoreham, New York was initially estimated to cost \$262 million. Now, 10 years later, with about 80% of the work completed, the current price tag is \$1.4 billion. And that estimate was made before 3MI, a disaster which is sure to lead to requirements for additional costly "safety" features. Shoreham may seem like an extreme example — but other reactors being built or planned are experiencing similar soaring cost escalations. For example, the 1150 Megawatt Green County, N.Y. nuclear power plant proposed for 1988 was just cancelled by the Power Authority of the State of N.Y. because the latest cost estimate had risen to \$3.1 billion from "only" \$1.8 billion in less than two years.(21) At this rate nuclear power plants will soon be twice the cost per kilowatt of capacity as coal plants in the Northeast, and almost this expensive elsewhere.

Other factors contributing to the steeply increasing price of nuclear-generated electricity include the fuel costs. Concentrated uranium ore (yellowcake) jumped from \$7 to \$42 per pound in only five years due to manipulation by the cartel that controls the international uranium market. Low operating efficiency is another key cost-increaser. Due to frequent shutdowns for repairs and "safety" improvements, nuclear plants have operated at less than 60% of their rated capacities.(20) (For example, the NRC recently ordered five nuclear plants along the East coast to shut down because a "design error" makes them vulnerable to damage due to earthquakes which geologists consider a definite possibility in the vicinity of these plants.) Nuclear plants are constructed in such large sizes (they're "cheaper" that way) that they actually increase the need for more power generating capacity by about 28% when compared to smaller coal, oil, or gas fired plants in order to provide equally reliable service.(35) This is because when they break down and require emergency repairs, relatively more generation capacity is required for back-up, since each nuclear plant is so large in size.

All this has led Charles Komanoff, the leading economic expert on comparative energy costs who is not

connected with the energy industry, to conclude that within the next few years electrical energy generated by nuclear power will be far more costly than electricity produced by other means.(22) He estimates that generating costs for electricity produced by new large nuclear plants will be 9¢ per kilowatt hour (a unit of electrical energy) compared to 6¢ for the same amount of energy from a coal plant equipped with highly effective "scrubbers" to reduce air pollution.

Who Benefits from Nukes

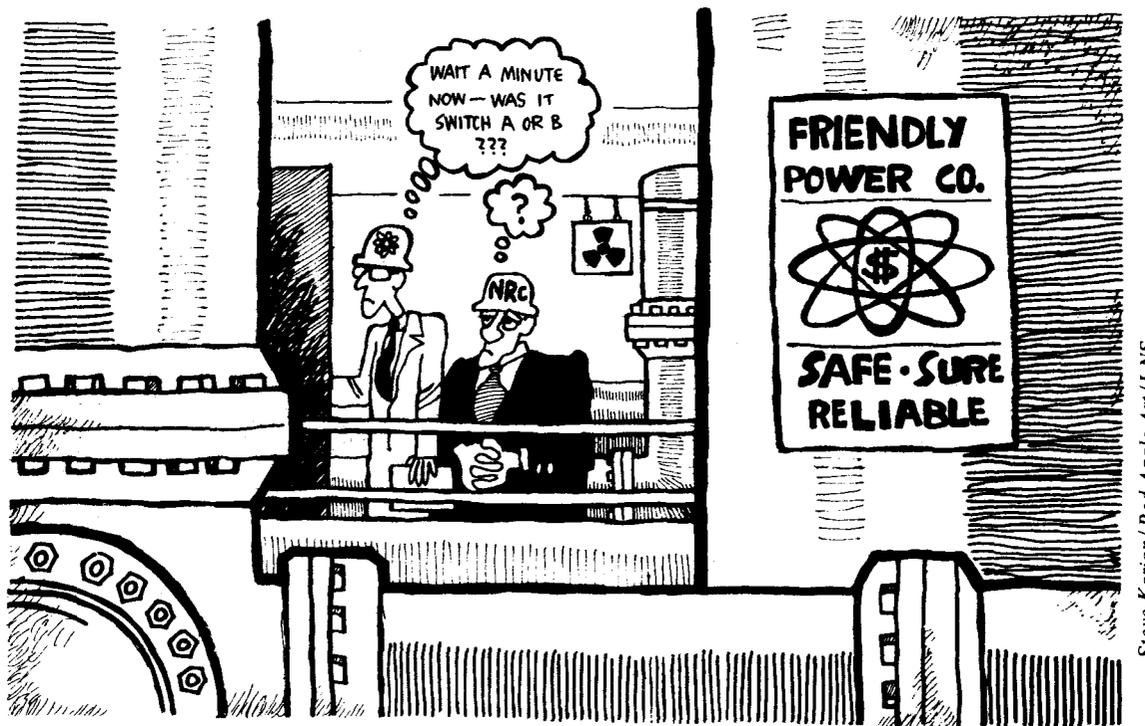
If it isn't safe and it isn't economical, why is it still being pushed? Exxon, Gulf, Getty, Kerr-McGee, General Electric and Westinghouse all have large investments in mining rights or production facilities to protect. But why are the utilities also pushing it? In most states the laws which grant utilities a monopoly over production of electricity also guarantee them a "fair" rate of profit (in some cases 14% per year or more!) on all their electrical generating equipment(23). This means that the more expensive the facility they can convince their supposed regulators to let them build, the more profit they will reap. A study done by the Energy Systems Research Group has shown that New York State utilities continually resort to enormously inflated predictions of demand for electrical energy in order to justify new plant construction.(24)

But there is a catch. In order to reap the windfall profits, the utilities must be able to raise the capital to complete the project and put the plant into operation. The soaring costs are making an increasing number of utilities nervous about not being able to raise the capital to complete the job. In response to the problem of capital costs, the already heavily subsidized utilities and nuclear industry have been lobbying for even more federal and state subsidies. They also want changes in regulations, either to allow an individual utility to charge the public in advance for the full cost of building a new power plant or to permit several utility monopolies to pool their resources to help finance plant construction.

Are We Hooked?

The nuclear energy pushers would like to convince us that we are already hopelessly addicted to nukes. Since 3MI the energy industry, the utilities, and their friends in government right on up to President Carter have been telling us that all sorts of dire consequences will result if we fail to build any more nuclear power plants and shut down the ones that are now operating. They talk about electrical shortages and dimouts, about the effect of oil supplies or fuel prices, and about potential loss of jobs. All three of these scare tactics are unjustified.

Nuclear power presently supplies about 12% of our electricity and about 4% of our total energy.(35) Nation-



Steve Karian/Red Apple Art/LNS

wide there is an excess of 38% of electrical generating capacity.(26) Thus, for the country as a whole, if all nuclear plants were shut down, about 26% over-capacity would remain. Since nuclear plants are often shut down for repairs, refueling or testing, utilities operating these plants must have alternate means of producing power. These alternate means could immediately take up a great deal of the slack if all nukes were immediately shut down. Transmission networks allow utilities to buy power from one another, providing a second means by which nuclear-generated electricity could be immediately substituted-for. In many areas of the country an immediate shutdown of all operating nuclear facilities would be possible without creating unacceptable hardships. In the other areas a phase-out of nuclear power over a period of a few years is certainly possible.

Since shutting down nukes would increase our demand for oil by only about 7%, this action would not have an overwhelming effect on the supply or price of petroleum products. Furthermore, improvements in automobile gas mileage and home insulation could more than make up for the oil required by utilities to replace nuclear power. *Business Week* reported in April 1979 that our supposed oil shortfall is "proving to be something of a mirage. Stocks of gasoline, heating oil, and crude are not seriously low by any measure."(27) The possibility of future shortages, according to this article, depends more on policies of the Department of Energy with regard to regulating the oil industry than on any intrinsic petroleum supply problems involving either imported or domestically produced oil.

As far as jobs are concerned, capital-intensive facilities like nuclear power plants have a negative long-

term effect. During the building phase many jobs are created, mostly of a highly skilled nature. A large percentage of these jobs is taken by workers who move into the area rather than local laborers. Decentralized power-producing facilities using renewable energy sources and conservation measures produce many more permanent jobs.(28)

We aren't hooked yet. There is still time to break the nuclear habit!

What Are The Alternatives?

The media would have us believe that the increased use of coal is the only immediate realistic alternative to nuclear energy. They also point out that coal use — even with the "scrubbers" now available to remove much of the sulfur dioxide and other atmospheric pollutants — has undesirable environmental consequences. Present mining conditions are unsafe, unhealthy, and produce water pollution as well as general ecological devastation in the case of strip mines.

Much of this could be corrected by passing and enforcing new legislation. In countries like Wales, Australia, and the Soviet Union, coal mining is done much more safely and without the high incidence of crippling black lung disease which results from the dusty conditions in U.S. mines. The so-called "risk-risk" comparisons which attempt to show that coal mining is more hazardous than nuclear power production are totally invalid. They generally ignore or underestimate the considerable radiation hazards associated with every step of the uranium fuel cycle. Most significantly, they fail to

recognize the unique potential for a totally unacceptable, catastrophic meltdown accident which is associated *only* with nukes.

Increased reliance on coal, though it may be unavoidable as a short-term measure to unhook us from our nuclear habit, has another serious disadvantage. Like nuclear, it is a technology which is suited for use only in centralized, capital-intensive power plants. Recognizing this, the huge oil companies and other energy industry giants have bought up much of our domestic coal mining land.(29) Switching from nuclear power to coal will keep us in the grip of these huge corporations and the utility company monopolies which now control our electric power.

The utilities and energy industry are fond of talking about renewable energy sources as if they were some vague hope for the distant future. This is sheer nonsense! In fact, decentralized renewable energy sources would lessen our energy and financial dependence on these huge corporations. Many of these technologies for producing electricity are available right now.(30) Aside from the direct conversion of sunlight to electricity, which admittedly requires more development before it will be cost-competitive, these include:

(a) Wind power. A recent analysis shows that this one source alone has the theoretical potential for producing 75% of total U.S. energy consumption.(31)

(b) Methane digesters, which convert organic wastes into methane gas. China is one country where people in many localities build and use these for both illumination and cooking.

(c) The burning of garbage. For example, the town of Hempstead, N.Y. has recently built a plant for recycling

glass and metal which will, at the same time, produce 15% of the town's electricity.

(d) Biomass conversion, in which fast-growing plants are produced on marginal lands for use as fuel either directly or after conversion to methane or alcohol.

Most renewable energy sources are uniquely suited for decentralized use. Their development is therefore directly at odds with the interests of the utility companies and the huge energy industry companies. When Exxon or a utility does talk about developing solar energy, they talk about centrally controlled and capital-intensive schemes that will earn large profits, such as huge solar satellites beaming back dangerous microwave energy to large arrays of receivers. Such schemes can only perpetuate control of our electrical energy by those who are already in control of the energy system, as well as introduce new and unacceptable health hazards.

Federal funding for energy research is presently allocated almost entirely to the development of nuclear and coal energy technologies. Only a very small percentage of our federal energy research budget goes to solar and other renewable resources, and even these funds primarily support the inappropriate adaptation of these technologies for use in our present capital-intensive centralized delivery system(32). For example, little money is being spent on developing low cost solar collectors which could be installed on individual homes, apartment buildings, and factories for direct production of electricity from sunlight. Many experts in this field claim that with proper funding this technology could be made cost-competitive with coal and nuclear in less than ten years.(33)



Carol Cina

Many analysts have pointed out that our most neglected energy alternative is conservation. (24) This doesn't mean doing without present comforts, but rather changing our totally inefficient and wasteful practices, which compare very unfavorably with other countries. Both district heating (the use of waste heat from power plants to warm factories and living space — a tactic which is not compatible with nuclear power plants) and cogeneration (the use of heat produced in industrial processes to make electric power) are two methods in wide use elsewhere which are not widely used here and are frequently blocked by the legislation that gives our electrical utilities their monopoly control.

What Needs to Be Done

First we must agree on a set of goals. The following are offered as a minimal set of demands which should be supported by the entire antinuclear movement:

- (1) Immediately cancel all plans to build new nuclear plants and stop construction of nukes now being built.
- (2) Shut down all presently operating nukes in areas where sufficient alternative electrical power exists to meet essential needs.
- (3) Phase out as quickly as possible the few remaining nukes by construction of alternative facilities.
- (4) Retrain and relocate all workers deprived of employment by these actions.
- (5) Change the many federal and state laws which both give the utilities and energy industry giants their monopoly status and which discourage the development of decentralized, renewable energy technologies.
- (6) Shift our present federal and state subsidies (tax write-offs, depletion allowances, etc.) away from support of nuclear development and replace them with incentives designed to encourage the development and use of decentralized alternative energy programs.
- (7) Redirect our federal- and state-financed energy research programs away from nuclear and fossil fuels and toward the exploitation of renewable resources.

How To Do It

The above program *can* be accomplished. It will require the building of an effective, *massive* movement to counter the well-funded opposition of the energy industry and its supporters in the Department of Energy. The movement began years ago, but the 3MI disaster has given it new impetus and urgency. *Join it today.* Here are some suggestions for getting involved:

- (1) Educate yourself about nuclear power and its alternatives. (See accompanying resource list.)
- (2) Find out about organizations in your area that are involved in the antinuclear, pro-safe energy movement. (See resource list.)
- (3) Join these organizations and convince your friends and neighbors to do likewise. If no such organization exists in your area, start one. The Long Island

Shad Alliance has available a short organizers guide written by some Long Island residents who got activated by the 3MI calamity (send self-addressed envelope with 28¢ postage.)

- (4) Set up forums, debates, living room discussions, town meetings, and film showings in your neighborhood. Put the safe energy issue on the agenda in any organization you belong to.
- (5) Seek media coverage for the movement.
- (6) Organize letter-writing campaigns to local, state, and federal legislative and other officials.
- (7) Be creative in efforts to organize a wide range of activities to publicize the movement. □

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14. "Safety of Nuclear Power Reactors (Light Water Cooled) and Related Facilities," WASH-1250, Wash., D.C., U.S. Atomic Energy Commission, 1973.
15. *Bulletin of the Atomic Scientists*, Sept. 1976, pp.27-37.
16. *New York Times*, April 10, 1979, p.A16.
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18. *Critical Mass Journal*, Aug., 1978, p.4; Nov. 1978, p.6; Reference 29, pp. 55-63.
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23. *Nuclear Plants: The More They Build the More You Pay*, R. Lanoue, Center for Responsive Law, Wash., D.C., 1978.
24. *Long Range Forecasting Model: Electrical Energy and Demand in New York State*, Energy Systems Research Group, Inc., Boston, Mass., 1978.
25. *Wall Street Journal*, April 2, 1979, p.28.
26. *Electrical World*, Sept. 15, 1978, p.72.
27. *Business Week*, April 2, 1979, p.25.
28. *Jobs and Energy*, R. Grossman and G. Daneker, Environmentalists for Full Employment, Inc., Wash., D.C., 1977.
29. *No Nukes: Everyone's Guide to Nuclear Power*, A. Gyorgy & Friends, South End Press, Boston 1979, p. 151.
30. Reference 29, section 3, chapter 4.
31. *Science*, April 13, 1979, p.13.
32. *Science*, July 22, 1977, p.353.
33. *Science*, July 29, 1977, p. 447.
34. Reference 29, section 3, chapter 1.
35. Edward Kahn, testimony before the New Jersey Public Service Commission, 1978, p.140.

ANTI-NUKE RESOURCE LIST

by Ted Goldfarb and Carol Cina

Periodicals

Critical Mass Journal, monthly newspaper on antinuclear movement and safe energy. \$7.50/year. P.O. Box 1538, Wash., D.C., 20013.

Groundswell, monthly newsletter on anti-nuke organizing. Nuclear Information and Resource Service, 1536 16th St., N.W., Wash., D.C.

Not Man Apart, monthly newsletter of the Friends of the Earth, 124 Spear St., San Francisco, Ca. 94105.

Science for the People, bimonthly magazine of the organization of the same name. \$7/year. StP, 897 Main St., Cambridge, Ma. 02139.

Films

Green Mountain Post Films, P.O. Box 177, Montague, Ma. 03151. Wide selection of excellent, international, anti-nuke films for rent or sale.

Mobilization for Survival, 3601 Locust Walk, Philadelphia, Pa. 19104. Audiovisual catalog 50c.

Center for Documentary Media (sole distributor of *Paul Jacobs and the Nuclear Gang*), 1501 Broadway, Suite 1904, New York, N.Y. 10036. \$750 purchase of 16mm film, tv cassette also available.

Books and Pamphlets

No Nukes: Everyone's Guide to Nuclear Power, Anna Gyorgy and Friends, South End Press, 1978 (\$8). P.O. Box 68, Astor Station, Boston, Ma. 02123.

The Menace of Atomic Energy, Ralph Nader & John Abbots, Norton, 1977 (\$4.95).

The Poverty of Power, Barry Commoner, Bantam 1977 (\$2.75).

Nuclear Madness — What You Can Do! Helen Caldicott, Autumn Press 1978 (\$3.95). 7 Littel Rd., Brookline, Ma. 02146.

The Nuclear Fuel Cycle: A Survey of the Public Health, Environmental and National Security Effects of Nuclear Power. Ford, Hatfield, Hollocher, Kendall, MacKenzie, Ross, Sheinman, & Schurgen, MIT Press, 1975, \$5.25.

Jobs and Energy, R. Grossman & G. Daneker, 1977 (with 1978 update). \$2 from Environmentalists for Full Employment, 1101 Vermont Ave., N.W., Wash., D.C. 20005.

Comparison of Nuclear and Coal Costs, Charles Komanoff, 1978. \$10, from Komanoff Energy Associates, 475 Park Ave. South, New York, N.Y. 10016.

Soft Energy Paths, Amory Lovins, Ballinger, 1977 (\$5.95).

All Atomic Comix, Leonard Rifas. \$1.25 each (bulk rates available) from Last Gas, Box 212, Berkeley, Ca. 94104.

People's Energy Primer, 1979. 50c from Syracuse Peace Council, 924 Burnet Ave., Syracuse, N.Y. 13203.

Nuclear Plants: The More They Build the More You Pay, R. Lanoue, 1978. Available from Critical Mass, P.O. Box 1538, Wash., D.C. 20013.

Some Antinuclear Organizations

(For an updated list of organizations, write to the Nuclear Information and Resource Service, *Groundswell* Monthly Newsletter, 1536 16th St., N.W., Wash., D.C. 20036.)

Abalone Alliance (California). Abalone Alliance Clearing House, 452 Higuera, San Luis Obispo, Ca. 93401.

Arbor Alliance (Mich.) P.O. Box 7828, Ann Arbor, Mi. 48107.

Armadillo Coalition of Texas, P.O. Box 828, Fort Worth, Tx. 76101.

The Bailly Alliance (Indiana, Ohio, Illinois), 711 S. Dearborn, Room 548, Chicago, Ill. 60605.

Cactus Alliance (New Mexico & Nevada), 312 Mountain Rd. N.E., Albuquerque, N.M. 87102.

Catfish Alliance (Southeast), P.O. Box 20049, Tallahassee, Fla. 32304.

Citizen's Action for Safe Energy (Oklahoma), P.O. Box 924, Claremore, Okla. 74017.

Clamshell Alliance (New England), 62 Congress St., Portsmouth, N.H. 03801.

Crabshell Alliance (Washington), P.O. Box 7027, Olympia, Wash. 98507.

Detroit Safe Energy Coalition, Box 1074, Detroit, Mi. 48231.

Great Plains Federation (Iowa, Missouri, Kansas), 811 Cherry St. Room 319, Columbus, Mo. 65201.

League Against Nuclear Dangers (Wisc.) RR1, Rudolph, Wi. 54475.

Lone Star Alliance (Austin, San Antonio, North Texas), c/o T. Samusson, 2521 Enfield, Austin, Tx. 78703.

Mobilization for Survival (umbrella antinuke organization), 3601 Locust Walk, Philadelphia, Pa. 19104.

North Anna Environmental Coalition (Va.), Box 3951, Charlottesville, Va.

Paddlewheel Alliance (Ky.), 1426 Highland Ave., Louisville, Ky. 40204.

The Potomac Alliance (Wash., D.C.), P.O. Box 9306, Wash., D.C. 20005.

SEA Alliance (New Jersey, Delaware, Eastern Pa.), 324 Bloomfield Ave., Montclair, N.J. 07042.

SHAD Alliance (N.Y.C., Long Island Sound, Westchester). L.I. SHAD, 333 Terry Rd., Smithtown, N.Y. 11787; NYC SHAD, 339 Lafayette St., N.Y., N.Y. 10012; Westchester SHAD, 255 Grove St., White Plains, N.Y. 10601.

Tennessee Valley Clean Energy Alliance, Solar Beat, 814 S. Webb Ave., Crossville, Tenn. 38555.

Trojan Decommissioning Alliance (Oregon), 215 S.E. 9th Ave., Portland, Oregon 97242.

Twin Cities Northern Sun Alliance (Minnesota), 1513 E. Franklin Ave., Minneapolis, Minn. 55404.

Union of Concerned Scientists, 1208 Massachusetts Ave., Cambridge, Ma. 02138.

Defend Affirmative Action

by the Affirmative Action Workshop, SftP National Conference

In the last year, the attacks on affirmative action programs have sharply escalated. The Bakke decision overturned educational programs based on admissions quotas for minorities and women. This will cut back the limited gains in access to higher education won in the 1960's. In another case, since dismissed, Sears Roebuck Co. sought to avoid instituting affirmative action programs, by blaming inequality in employment on government programs (such as the G.I. bills after W.W. II) which created an all-white educated male workforce. Now, the Weber case threatens to reverse all advances in equal employment opportunity won by the civil rights and women's movements.

Brian Weber was a white male lab technician at a Kaiser Aluminum plant in Louisiana. In 1974 the United Steel Workers negotiated an affirmative action program with the three major aluminum producers. In Kaiser's case, federal investigations and threats of lawsuits played a strong role in acceptance of a "voluntary" program.

Under the affirmative action provision that removed prior work experience as a requirement for entering training programs, Brian Weber applied for a craft training program. He was denied entrance, while two blacks with lesser seniority were accepted. Like Allen Bakke, Weber challenged the affirmative action program on the basis of "reverse discrimination".

"Reverse discrimination" attacks affirmative action on the basis that minorities and women are given unfair advantage in competition against white males for educational and employment opportunities. Proponents of reverse discrimination claim that the gains won in the 1960's have eliminated discrimination against women and minorities. Continuing these programs actually "threatens" to push white males into a subordinate position.

The basis of claims for reverse discrimination is simply untrue. In no field have women and minorities achieved equality of opportunity with white males. The proportion of women and minorities in skilled positions has yet to reflect their proportion in the workforce. Since 1975 the income gap between white and black families has widened.

Brian Weber won his case in a one day trial, and in appeals court. Kaiser and the USWA appealed. In neither trial, were women or minorities explicitly defended by their own organizations. The Supreme Court began hearing the case on March 28, 1979.

As was true in the Bakke case, the Supreme Court can take several approaches. It could rule illegal all quota programs not ordered by the courts, eliminating the power of unions to negotiate effective affirmative action programs. As in school desegregation cases, it could require proof of past discrimination before imposing quotas. By throwing every affirmative action program into the courts, real changes could be delayed for years, just as some school desegregation orders have been blocked in the courts for nearly ten years. Or as in the Bakke case, it could rule all quotas illegal. The history of discrimination in employment shows that only definite goals, quotas and timetables can force employers to stop discriminating against women and minorities.

Representatives of over thirty organizations met to plan a national campaign against the Weber Case. May 26 — June 2 was declared the National Anti-Weber Mobilization Week. Educational programs, and local and regional rallies are to culminate in a national demonstration in Washington D.C. on June 2. These campaigns will be unified around the slogans:

Reverse the Weber Decision

Defend and Expand Affirmative Action Programs for Minorities and Women

Fight Racism, Sexism and National Oppression

Support the Efforts of Labor Unions in the Struggle for Affirmative Action

The First National Convention of Science for the People passed by acclamation the following resolution, drafted by the Affirmative Action Workshop: "Science for the People supports affirmative action and opposes all attacks on it. In particular, the conference urges all chapters to participate in activities against the Weber suit and other attacks on affirmative action."

We urge that wherever possible, chapters of Science for the People join local coalitions in support of the Anti-Weber Mobilization. □

CURRENT OPINION

THE FIRST SftP NATIONAL

After ten years, Science for the People came together for our first international conference. Fifty individuals and chapter representatives from California, Texas, Illinois, Missouri, New York, New Jersey, Michigan, Washington D.C., Massachusetts, Florida, and Montreal, Canada met in Ann Arbor, Michigan on the weekend of March 23-25. Preparations for the conference had been made at the Eastern, Mid-Western and Western regional conferences. (See the Jan./Feb. 1979 issue of SftP.) People came to the conference prepared to begin building Science for the People as a national organization. The regional conferences had discussed proposals for national decision-making bodies, democratic policy-making by the membership, decentralization of editorial control of SftP magazine, and common political principles for SftP.



With less than two full days of meetings, the conference agenda was very tight. We began early Saturday morning (8 A.M.!). After the inevitable procedural matters of final revisions in the agenda, and agreement on conference rules, we began with presentations on the history of Science for the People. Reports were given on the history of SftP activities in areas such as: Sociobiology, Science for Vietnam, the SftP trip to China, XYY research and AAAS actions. To set the stage for later discussions of political principles within SftP, a history and analysis of the 1974-1976 period within SftP, in which political caucuses debated SftP goals and strategies, was given. The plenary session then broke up into working groups, to begin drafting proposals on national decision-making, chapter-building, editorial reform, a new national flyer and principles of unity.

After lunch, two sets of workshops open to the public, were scheduled. These workshops covered the broad range of SftP activities and interests: Occupational Health and Safety, Nuclear Energy and Disarmament, Politics of

Pollution, Affirmative Action, Working with Unions, Health Care, Cuba, Sociobiology, Alternative Technology, and the Farm Labor Organizing Committee (FLOC) support work. Workshops enabled members to exchange information on activities in different chapters, and to develop projects which could tie chapters closer together through joint work.

The topics for discussion at various workshops were:

Health:

Discussions focused on the problems of various proposals for a system of National Health Insurance, and the contradictions facing such programs operating within a profit oriented medical system. Attention was also drawn to the struggles to maintain existing health care facilities for poor, minority and working class families, against cutbacks such as Proposition 13 in California, and the threatened closure of Cook County hospital in Chicago.

Occupational Health and Safety:

After sharing personal experiences in the field, members talked about the role of SftP chapters in supporting regional

Committees on Occupational Safety and Health, such as the ones in Chicago and Massachusetts (CACOSH and Mass-COSH). A major concern was the role SftP should play in the movement to defend OSHA legislation from attacks by large corporations and weakening by the federal government. Many urged an expansion of educational work by SftP, in coalitions with unions and community groups. A network of SftP activists in the OSHA field was established.

Cuba:

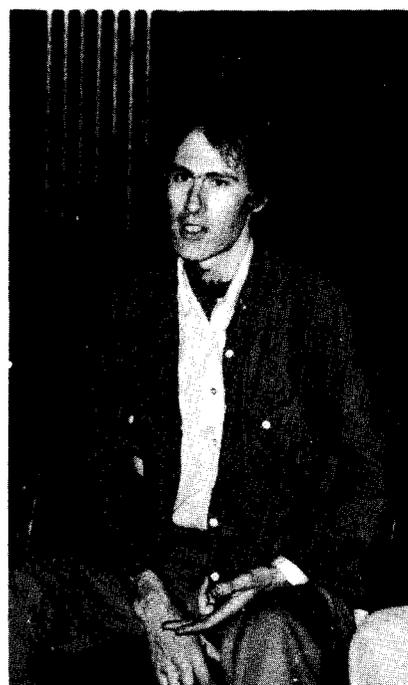
The original impetus for this group was to explore the possibility of an SftP trip to Cuba, similar to the two delegations which have visited China. However, most people agreed that planning for such a trip was premature. A group was formed to study the interaction of science, ideology and political economy in Cuba, and to try to establish close contact with individuals within Cuba.

Politics of Pollution:

The major concern was how SftP's involvement in various sectors of the environmental movement could be used to raise broader political issues such as: industrial "runaway shops" exporting en-

CONFERENCE, SPRING 1979

by Champaign-Urbana SftP



Photos by Dale Fast

vironmental hazards (such as asbestos and pesticide production) to the Third World to avoid stricter U.S. standards, the defense of current standards against calls for reduced "bureaucracy" and de-control from industry, and how to defend the jobs of workers threatened by "runaways" and cutbacks blamed on environmental controls.

Affirmative Action:

The Bakke case and its impact on minority and women's access to education was discussed. Criticism of SftP's lack of involvement in the Anti-Bakke coalitions was general. A comparison of experiences at various universities and federal agencies brought out the lack of significant gains in the participation of women and minorities in scientific/professional fields. The workshop drafted a conference resolution, calling on SftP to join the movement to overturn the Weber case, dealing with affirmative action in employment. The group will draft a current opinion piece for the magazine on this subject.

Alternative Technology:

Participants discussed their experiences in community-based alternative

technology experiments. Chapters had worked on projects such as assisting minority neighborhoods develop alternative heating sources, and collective greenhouses. Major problems with alternative technology concerned maintaining collective control of technologies developed, against the threat of monopolization by government and industry.

Nuclear Power and Disarmament:

The interactions between nuclear power and weapons development were discussed. The need for SftP to bring a wider political perspective to the anti-nuclear movement was seen as central. Particularly important is an understanding of why nuclear disarmament has not been as strong an issue as the anti-nuclear power movement, and how this can be changed.

The evening agenda was rearranged so that we could join a picket line in support of the Farm Labor Organizing Committee (FLOC). The Ann Arbor chapter of SftP has been active in supporting the FLOC strike against tomato growers and the food processing multinationals which dominate tomato growers and farm workers. The FLOC

picket line at a local supermarket was part of a nationwide boycott against these multinationals, particularly Libby's and Campbell's.

A brief plenary session brought everyone up to date on progress in the working groups. This was also our first chance to evaluate how the conference was proceeding. A women's caucus held prior to the plenary raised the discussion of how the structure of the plenary sessions tended to limit participation by women.

Working groups then took the rest of the evening to produce the final proposals for discussion at the Sunday morning plenary. What follows, are the proposals in their final form as adopted by the conference. The proposal on national decision-making lays out the procedure for approval of these resolutions by the entire membership.

PROPOSAL FOR NATIONAL ORGANIZING

This proposal concentrates on building new chapters of SftP, and publicizing SftP for general recruitment. St. Louis and Tallahassee chapters are tak-

ing on the responsibility for organizing material on starting a chapter and working in coalitions. The goal is to create organizer's packets which can be sent to groups wishing to start a chapter. Hopefully, current chapters will be able to assist in starting chapters in nearby areas. A speakers bureau will be organized by the Stony Brook chapter.

In terms of general SftP organizing and publicity, the conference passed a resolution that the 1980 AAAS meeting in San Francisco be a major focus for outreach and organizing. The proposal was amended to strongly urge chapters to also organize at conventions which attract less elite members of the scientific/professional strata, such as nurses (the American Public Health Association) and teachers (National Science Teachers Association).

NATIONAL DECISION- MAKING

Currently, by default, national decisions are made within the Boston chapter, which is also responsible for editing and producing *Science for the People* magazine. To democratize these processes, while assuring real control by the membership was the major objective.

The resolution passed calls for a National Coordinating Committee to be established, consisting of two members (one woman, one man) from each region. (Currently SftP is divided into a North-Eastern, Mid-Western and Western region). The national committee will have jurisdiction over administrative decisions, and will be responsible for submitting policy decisions to a vote of the membership.

National Committee members will be selected by each region, within one month after the conference, and will serve for one year. (SftP expects to hold its next national conference by then, to review this structure.)

The membership voting process will be a simple majority vote for passage of policy issues. The Internal Discussion Bulletin, which goes to all members of SftP, will be used to submit policy issues to a vote. At any time recalls can be launched against any national committee member (10% of the region) or any policy decision (10% of the national membership.)

The National Committee shall be responsible for proposing the role of the next national convention.

EDITORIAL REFORM

SftP has published a magazine consistently for ten years. At the first national convention a priority was given to developing a structure whereby all chapters of SftP would have equal editorial control over the magazine. While the proposal calls for three editorial collectives, corresponding to the three major regions of SftP chapters, the newness of most of the Western chapters makes it unlikely they will participate immediately. Hence the rest of the organization has a responsibility and commitment to providing support to the Western chapters in developing their editorial capabilities.

The proposal consists of three sections. The first deals with increasing distribution of the magazine, and raising funds for efforts in that direction. The second deals with guidelines for exchanging magazine subscription lists with other progressive publishers and organizations. The third deals with actual editorial reform. In detail its provisions are:

—Each year, there will be three topical issues and three general issues, alternating.

—Editorial collectives will be set up in each of the three regions. Articles will be sent to a central chapter in each region for distribution to editorial members for collective editing.

—Each editorial collective shall be responsible for soliciting and editing approximately one-third of the articles in each general issue.

—Each editorial collective shall be responsible for one topical issue per year.

—Women shall be substantially represented on the Editorial collectives.

—Editors shall not edit their own articles.

—Boston shall coordinate the general issues during the transitional period.

—The production committee in Boston shall retain its autonomy with respect to its current tasks (layout, length of magazine, cover design, etc.)

—The editorial committees shall be financed from national funds.

The goal is one year for the transitional period, although this is dependent upon activity in each region.

PRINCIPLES OF UNITY

The principles of unity working group had by far the most difficult task. Although some discussion had gone on at previous regionals, little firm consensus had been reached. Sharp disagreements arose as to what issues should be addressed in the principles of unity, and over strictness of language to avoid ambiguity. As this report was the final workshop report, we reached it rather late. Therefore sharp time limits had to be imposed on the discussion. This prevented a resolution of the differences at the conference. Further discussion had to be postponed to upcoming regional conferences.

The working group produced four principles that they reached agreement on, along with a set of principles where varying formulations were offered, and a list of issues they considered important but didn't have time to discuss. They reached agreement on the following statements.

—Science is not neutral. In any society, scientists and science serve the particular social and economic interests of those in political power.

—In North America, the development of science is for profit at the expense of the majority of the people.

—We advocate science for the people, for science can serve the people only when they control it.

—We urge people involved in science and technology to participate in and contribute to progressive economic, political and social movements.

An open discussion followed. There was general support for each of the above draft principles when taken as an individual statement. However, there was strong reluctance to adopt this set of statements as a basis for principles of unity, because they were seen as seriously incomplete. The importance of dealing with issues such as sexism, racism, and anti-imperialism was discussed. Although no votes were taken to submit anything as a resolution, informal counts were taken to get the consensus of the conference. The present statement of principles (inside front cover of the magazine) was adopted as an interim position. One vote called to submit the entire discussion, and all documents of

(continued on page 26)



A very successful Western Regional Conference was held in San Francisco on Saturday, February 24, 1979. About 40 SftP members came together representing chapters from way down Los Angeles/Irvine way to the outer reaches of the San Francisco Bay Area. The preparation of an agenda and chapter reports well before the conference date allowed for a very productive, albeit exhausting, one-day meeting.

Saturday morning began with a brief theoretical presentation by the Bay Area study group on the political economy of science: an analysis of the nature of science in the U.S. together with some discussion of why science is this way, concluding with suggestions for what needs to be done — particularly by SftP. As examples of the political economy of science, short presentations followed on sociobiology, recombinant DNA and nuclear weapons presented by SftP members working locally on the issues.

This theory and practice focusing on the political economy of science served

as the launching point for morning workshops divided into four groups: (1) sociobiology, recombinant DNA, racism, sexism; (2) energy and alternative technology issues, nuclear weapons and power; (3) food and nutrition, agriculture, pest management; and (4) occupational health and safety, health care, medicine.

Related issues were purposely grouped together to direct the discussion toward the most fundamental aspects pervading through all the issues. Workshops charted their own course, but all shared in the pursuit of three kinds of

questions: (1) What common political elements pervade the science issues under discussion? (2) How should we direct our work on these issues to be most effective? What priorities should be set? (3) How can we work together on related issues? What is the work that needs to be done?

Following lunch and summaries of the Issue Workshops (following), general discussion centered on questions of the national organization and chapter reports. Red, Blue and Green Organizational Workshops filled up the rest of the afternoon. Each workshop was responsible for discussion of national matters (organization, National Conference, magazine, IDB). Attention then divided to focus on (1) racism, sexism and elitism within SftP chapters, (2) chapter dynamics: methods, problems, etc., and (3) chapter membership: new, continuing, recruitment, outreach, etc.

A report of these workshops will appear in the IDB. Several of the workshops spent time on the question of Principles of Unity and drafted resolutions for final plenary discussion and approval.

One Principle of Unity was adopted: "Our central commitment is to combat the use of science and technology to support and perpetuate the governing capitalist elite. We all agree that the political economy is the most important aspect of any science issue and we agree with the stated goals in *Science for the People* magazine."

The concluding plenary voted on Conference resolutions to be taken to the National Conference. A general feeling of accomplishment pervaded the by then weary conference participants. Discussion continued on through Chinese dinner and further still to a wild dancing party that evening.

SOCIOBIOLOGY WORKSHOP

The Problem: Sociobiology provides a genetic explanation for human social behavior and human social institutions. At the same time it sweeps aside the impact of culture and minimizes the complexities of human behavior. It is compatible with capitalist ideology and offers a pseudo-scientific rationale for maintaining the inequities which exist in a society explicitly committed to equal opportunity. While still being theoretically argued it has already been applied to a variety of social policy decisions — e.g., in criminal justice, economics and education.

Isolation of Critical Issues: (1) Sociobiology presents itself as a quantitative scientific theory with the accouterments of respectability. (2) It has historical precedents. (3) It confuses genetic with biological explanations. (4) It validates only certain aspects of human social behaviors such as competition, aggression and individualism, while explaining the existence of other behaviors — such as cooperation and altruism — as strategies to attain them. Thus it offers the potential solutions to current social contradictions.

Plan of Action: We resolve to develop a broad educational campaign around these issues. Audiences should include high school students and teachers, academic researchers and meetings of professional societies, ourselves and SftP, museums and the general public. Vehicles by which this can be achieved in-

clude guerrilla theater, pamphlets, articles, comic books, television, video, radio, slides, tapes, endorsements for our literature from community groups.

ENERGY & ALTERNATIVE TECHNOLOGY WORKSHOP

The Problem: We agreed that we need to break down the institutionalized and industrialized character of science. Yes, science needs to be decentralized; but politically and economically decentralized, not necessarily physically decentralized. At the same time it is clear that certain technologies are capable of being physically decentralized — e.g., solar, wind — while others are inherently centralized — e.g., nuclear, tidal and probably fusion.

The manufacture and distribution of energy technologies are only the symptoms of the most important issue: the *power structure*. Even the money being spent on alternative energies — e.g., solar and fusion (alternative?) — goes to large energy oriented corporations and utilities to build capital intensive, centralized systems. While capital intensive, centralized systems are not necessarily inappropriate, the fundamental question is WHO CONTROLS?

Plan of Action: It was clear the decision-making should be decentralized and involve working people more directly. To reach such a broad spectrum of working people, we realize the need to focus on those aspects of issues relating directly to people's working lives — i.e., jobs . . . economics. This brought up the significant limitation of SftP as presently constituted with its limited class make-up (basically white "middle class"). It was resolved that we should therefore make connections with progressive union activity and connect with minority leaders.

This workshop also endorsed items of an earlier presentation suggesting immediate tasks for SftP. (1) SftP should analyze and then demonstrate the political character of capitalist science and technology and how it is used in the production process and used as a tool of social control. (2) SftP should further develop links with scientific workers, labor, and other progressive groups, and consolidate relations among SftP members as a base for the organization. (3) SftP should consider among its activities the

critical examination of existing socialist models in their use and organization of science. (4) SftP should further develop political analysis for individual and organizational focus. (5) SftP should work to develop socialist forms of work in laboratories/research units — a sense of socialist community in scientific workers, unionization of scientific workers, discussion of scientific problems with all concerned members of the community.

Disagreement arose as to strategies in our work. Some believed it was sufficient to concentrate on the issues alone and that the politics would naturally be brought out. Others, however, emphasized that the politics behind all the issues needs to be explicitly put forth and emphasized with at least as much importance as the issues themselves.

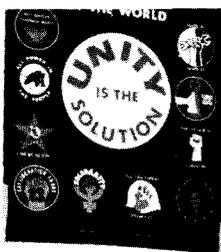
FOOD & NUTRITION WORKSHOP

The Problem: The problem may be articulated in one of two ways, both of which are dominated by issues pertaining to the political economy of science: (1) the quality of our food and (2) the question of organic vs. ordinary food. No agreement was reached on the desirability of pursuing one or both of these courses, although it was agreed that the audience would remain more or less constant and would include: small farmers, food distributors, food processors, workers in agribusiness, consumers. The group has resolved to meet again in a week to develop its conference resolutions.

OCCUPATIONAL HEALTH & SAFETY

The Problem: It was quickly brought out that U.S. doctors are inadequately prepared to handle occupational health problems — medical students rarely receive training in those problems unique to the workplace, and this prevails although the workplace is such a common aspect of everyone's lives.

Plan of Action: The idea of a "worker's clinic" (or occupational medicine clinic) was discussed in which integrative, broad spectrum approaches and collective decision-making are utilized to deal with occupational problems. One example of such a clinic (just getting off



the ground in San Francisco) uses teams composed of legal, medical, industrial hygiene and community workers to discuss problems from a variety of standpoints. It is recognized that solutions to occupational problems may lie in the legal, community or political realm, rather than solely the medical.

Broader political issues around health care were then discussed along the lines of the excellent special "Health Care" issue in the *SftP* magazine (Nov-Dec 1978, vol. 10:6). Discussion continued with emphasis on ways of connecting SftP with ongoing community health projects such as the worker's clinic.

RED WORKSHOP

*National Magazine & Conference;
Racism, Sexism, Elitism*

We began by discussing magazine work. We agreed that all members should subscribe and solicit subscriptions, and that chapters might handle local distribution. Increasing circulation can secure the organization's financial position.

In addition, the Western Region should participate more actively in the magazine. We should provide feedback on articles, perhaps setting aside meeting time specifically to discuss the magazine. We might also solicit articles, write

them ourselves, and do some editing. Most ambitious would be to take on an issue as Ann Arbor has done for May.

Speaking of Ann Arbor, we also talked about the National Conference. The issues of centralism vs. anarchy, and people's fears of being manipulated based on previous bad experiences were raised. We drafted a resolution on the Conference's decision-making process, which was submitted to and passed by the afternoon plenary.

We then discussed the triple threat of racism, sexism, and elitism within SftP. Racism was related to the small number of minority scientists and their corresponding "thin spread" among community, professional, and other groups. We noted that women entered our chapters most easily together in groups and when issues especially pertinent to them were raised; it might be the same with minorities. Four elitisms were mentioned: classist, scientific (using academic rank or abstract claims to greater knowledgeability), political (condescending to those with less theoretical training), and organizational (the formation of cliques).

We decided that these problems could be resolved by: working more in coalitions with minority, community, and women's groups; using criticism/self-criticism; being sensitive to new members; and trying to cut down on jargon, big words, and arcane acronyms.

BLUE WORKSHOP:

*Chapter Dynamics, SftP
Goals, Organization and
The National Conference*

The following are the conclusions of our working group:

(1) Science should be controlled by those it affects; we (in SftP) are in a position to show how this control has presently not been achieved by (a) identifying the myth of neutrality of scientists and science, and (b) pointing out the productive forces of society and hence its social relations. Another related observation made was: although higher degrees of training, education and status have traditionally set science workers off from "the working class", the growth of technical processes routinely used in production is leading to their proletarianization.

(2) The strength of SftP as an organization should be "diversity within unity".

(3) The National Conference should result not in dictates but should initiate a year-long grassroots process by which to arrive at guiding principles for SftP.

(4) An important criticism of SftP chapters is that there is a tendency toward complacency and not to translate knowledge into political action. Further, that the character of a chapter's group — i.e., the lifestyle of its members, sexual and ethnic make-up — affects the kind of people attracted and should be considered in outreach strategies.

GREEN WORKSHOP:

*SftP Chapter Stability and
Principles of Unity*

This group's discussion focused first on problems of recruiting members and maintaining a chapter; thereafter the topic shifted explicitly to national Principles of Unity.

There was discussion about the reasons why some chapters collapse after an apparently successful start. A primary problem seemed to be that many chapters' activities depended on one member's initiative or connections; and that when that member withdrew, everything fell apart.

Questions were raised as to how chapter activities should relate to what kinds of members we want to attract. The point was made that we never could de-

cide a priori on a specific "type" of membership, and that the main criterion for deciding on projects should remain their specific goals.

It was stated that if SftP's significance as an organization is to extend beyond whatever particular project a local chapter happens to be working on at a given moment, that then we must develop a set of guiding principles or concerns which provide an overall context for our specific activities; moreover, that such principles should be made explicit in our actions and discussion, so that we, prospective members, and also others whom we address can develop a sense of our direction, of our ultimate desires. This led into discussion of national principles of unity.

Some participants proposed that the principles of unity should define our role in the struggle against monopoly capitalism, and should therefore include a commitment to develop a class analysis of SftP and its membership. The pointlessness of discussing "socialism" in the abstract was stressed.

Other members warned against overly explicit resolutions; and also voiced concerns about using Marxist and other technical vocabulary, about the danger that these be interpreted as jargon, as well as the danger that these terms be

unclear to both users and hearers — and thus in fact jargon. One person stated that he had found the whole debate in the I.D.B. about the pamphlet and the principles of unity very boring; he added that most useful education comes from specific actions at the local level. The same person recounted how his chapter fell apart partly because of a continuing theoretical argument between two of the members.

The question was raised as to what criteria should be used to decide on activities in the absence of national principles of unity. In response, some people felt that anything that was educational, that involved or organized among the masses of people, and that opposed the existing power structure was worthy of SftP participation from a political standpoint. One person suggested attempting to specifically reach out to several types of people in order to create useful diversity within SftP. Someone also suggested that there actually was considerable unity of purpose within SftP, and that the divisive tendencies of theoretical debate obscured that fact. A response was that the degree of unity could not be ascertained without it being articulated; and furthermore, that the level of unity would therefore be

severely limited if the use of appropriate analytical vocabulary were to be dispensed with.

As to the character of the Principles of Unity, some stressed that their adoption should represent the beginning of continuing discussion and reexamination, and should not just be viewed as an obstacle that must be once surmounted.

In that context, it was felt that the principles of unity should reflect the points we presently can agree on, but also a commitment to develop our understanding further. It was not felt that we should come across as "having all the answers"; the principles should rather arrive at questions we see as important.

In general, some people were enthusiastic about developing principles of unity, and wanted to spur on the discussion in the upcoming national conference with specific suggestions. They were very concerned that the national conference should not only discuss the adoption of principles of unity, but actually go about adopting some. Other people remained with strong reservations about the whole process and its dynamics, and expressed a concern for maintaining the ideological diversity within SftP, and for preventing its isolation from the people we want to address.

NATIONAL CONFERENCE

(continued from page 22)

the working group to the internal discussion bulletin. Another vote amended principle 2 to read:

"In the capitalist world, the development of science functions to: (1) increase the profits of corporations at the expense of the majority of people; (2) control and dominate various aspects of the lives of people, especially workers, women and minorities; (3) legitimize the existing political, economic and social structure of society."

CONCLUSIONS

In the time remaining after the principles of unity debate was cut short, the conference rushed to finish final administrative business. A third staff position was added to the national office in Boston. A brief criticism/self-criticism session focused on how to increase individual interactions between members

(swamped by large plenary sessions and working groups), the advantages of large plenaries vs. smaller sessions in encouraging wider participation, and on institutionalizing procedures to widen participation, especially of women.

The first international conference of Science for the People did not result in any drastic changes. Members from across the country were able to meet for the first time, and to begin to coordinate activities on a regional and national basis. We started a process of more sharply defining SftP's analysis of the control of science within our society. By creating structures such as the National Coordinating Committee, and decentralizing editorial control of the magazine, we began to tie SftP more closely together as a national organization.

But the problems within SftP are still with us. The women's caucus perpetually brought up the obstacles preventing full participation of women within SftP. For future work on this problem, an informal session met on Sunday to discuss Women in Science and SftP.

They suggested that SftP should include in the chapter-building materials suggestions for drawing women in and setting up structures that would encourage their staying. Future conferences should include workshops on women's issues. SftP should support women-led issues such as the abortion struggle, SftP must continually institutionalize these and other structures to encourage full participation by all members, and pay continual attention to the dynamics of meetings.

Two days were hardly enough to accomplish even half of what most of us wished for. Many members regretted the lack of time, particularly in discussion of political principles for SftP. Time was so filled with workshops, plenaries and working groups that little time was left for more individual discussions.

But we now have the experience of a national conference successfully behind us. This next year can be devoted to putting these resolutions into practice, and expanding and improving on them for the next convention. □

Scientific Research and Education in Vietnam

A Speech and Interview with Dr. Nguyen Van Hieu

Science for the People was founded in the late 1960's by a group of scientists and engineers opposed to U.S. intervention in the Vietnamese struggle for national liberation. Now, almost ten years later, we are pleased to report on science education and scientific research in the Democratic Republic of Vietnam. The slightly edited text of a talk given on November 4, 1978 in San Francisco, by Dr. Nguyen Van Hieu, a Vietnamese scientist, appears below. Although Dr. Hieu's was a private visit, it is an historic occasion, for he is one of the first Vietnamese officials to be awarded an American visa since liberation.

With minor stylistic changes, the text presented below is a transcription of Dr. Hieu's talk. We have, however, reorganized the question and answer session so that related questions appear together. We feel these changes are consistent with the spirit of Dr. Hieu's presentation, and his call for continued support for reconstruction and scientific development in Vietnam. At the end of the report readers will find concrete suggestions for increasing contact with and support for the Vietnamese scientific community. Since Dr. Hieu's visit was in November, 1978, readers will also note there is no reference in either the text of the talk or in the question and answer session to the recent struggle in Kampuchea (Cambodia).

Dr. Hieu is introduced by a representative of the Association of Vietnamese Patriots in the United States.

In the three years since the complete liberation of our country, the Vietnamese people have devoted tremendous effort to defending and rebuilding their homeland, despite numerous difficulties, including national calamities and attacks by imperialists and international reactionaries. In the socialist construction of our country, the role of scientific and technological revolution is of prime importance. The speaker for tonight is an active participant in these scientific efforts. Dr. Hieu is presently the Deputy Director of the Vietnamese Science Institute and the Director of the Institute of Physics. Dr. Hieu received his degree in theoretical physics and mathematics in the Soviet Union and has since held many high scientific and administrative positions, not only in Hanoi, but Ho Chi Minh City. Dr. Hieu has attended many conferences overseas, but this is his first visit to the United States. Accompanying him is Dr. Nguyen Van Quy, a civil engineer and a cadre in the Vietnamese Science Institute. It is therefore an honor for me to introduce our speaker, Dr. Nguyen Van Hieu.

Dr. Nguyen Van Hieu:

Ladies, gentlemen, and dear friends:

Before beginning my talk I would like to express our deep gratitude for your support of our people's struggle for independence and freedom, for your sympathy, and your readiness to continue helping us in the reconstruction of our country. This is our first visit to the United States, and I hope that in the future we shall see each other again and again. I should mention that this is only a private visit.

I am a physicist, and this is the first time I have given a talk about some general topic in English. I have many friends in the United States whom I have known for a long time, having met them at many international conferences. This time I was invited to attend an international conference on high energy physics near Chicago, and I and my colleague are using this opportunity to visit different cities, laboratories, and universities in this country, to meet old friends who supported us for so long, and also to meet you and know you. Since I am a science worker, I cannot tell you very much about general conditions in the country, because my data are not exact on all these general things. But I can tell you about the present situation in the domain where I am working. I would like to tell you about education and scientific research in Vietnam.

I think that the development of public education in our country has been richly successful. Before 1945, the founding of the Democratic Republic of Vietnam, 95% of the people were illiterate. The number of high schools in the whole country could be counted on the hands. Similarly, the number of people with university degrees was less than ten. At that time, under such conditions, we could not say anything about scientific research. After the founding of the Republic, President Ho Chi Minh said that one of our urgent tasks was to liberate the people from illiteracy.

As you may know, a few days after the founding of the Republic the war against French colonialism began. In the hard conditions of this war, which began first in the South and then involved the whole country, we worked to develop public education. More and more new schools were organized, and through the efforts of the government and the whole people, we have developed very quickly. In 1954, at the time of the Geneva Agreements, we organized schools for children in many parts of the liberated regions. In 1975 in the north of

Vietnam all children were required to finish seven years of education before they could go to professional school or work in factories or on collective farms. Our government wanted to be able to give all children a high school education (i.e., up to ten years of schooling), but it was a difficult goal. We did not have enough schools, and there was a shortage of teachers. Thus, only about 40-50% of the children who finished the seven year school were able to go on to the school of the third level (i.e., grades 8-10) which is a prerequisite for going to the university. We are now trying to organize more and more schools, and to establish pedagogical institutes for training teachers. We hope in the near future to give ten years of schooling to all children in the country. As well as organizing public schools for the children, we created evening schools of complementary education for people who before had no possibility of becoming educated. Many engineers, doctors, and teachers were trained this way. Attending school in the evenings, after some years they are able to finish high school, and after high school they can continue on to study, either directly at the university, or in the university of complementary education.

During the war against the French we also organized the medical school. This university was founded in the jungle, because at that time all our cities were occupied by the French. In 1954, following the Geneva Agreement, our government came back to Hanoi and we organized the new pedagogical university for training high school teachers. I am a student of the first year of this pedagogical university.

In 1956 the government decided to organize three new universities — the University for Science in Hanoi, the Polytechnical University for Engineering, and the Agricultural University. Since then from time to time other new universities were founded, and by 1975, before the liberation of the South, we had in the North a total of 38 universities. With the liberation of the South we gained some universities which already existed there, and also founded others, so that at this moment in our country we have altogether sixty universities.

Many universities in the North were founded during the war, and throughout the war all of them continued to operate. When we suddenly found that we could not live in the cities and towns, all the universities were evacuated to the jungle, and there, under the hard conditions — bombing, no electricity, no buildings — we lived and we taught the students. We continued our training of the people in very small houses of bamboo with leaf roofs, lit by petrol lamps at night. Under these conditions, by 1974, before the liberation of the country and thirty years after the founding of the country, we had in the North of Vietnam 100,000 scientific workers at the university level of education. We consider this a very great success. Since 1960 our government has every

year sent post-graduate students abroad for training, and in 1974 we had 1,500 scientific workers at the Ph.D. level, a number which has been doubled since then.

As well as creating universities during the war, we also organized many scientific research institutes and laboratories, and we now have about sixty research institutes in the country. During the war, scientific research, and in particular the applications of new techniques in agriculture and scientific research in medicine, contributed very significantly to improving the lives of the people. Now that we have begun some very nice programs for the reconstruction of the country, scientific research has become more and more important. We now have many laboratories, many universities. But in fact this number of universities and laboratories is very small. It is not enough for our needs. And so we must concentrate all our effort, all our potential — scientific potential — on some scientific program. At this moment we cannot study just any program we like. We must choose some specific problem for research. I would like to tell you about the directions of scientific research in our country.

One of our most important scientific programs is devoted to the study of Vietnam's natural resources and natural conditions. We are now looking at the mineral



Women of Vietnam

resources of the country, at the richness of the Vietnamese forests, at the sea of Vietnam. We are studying the country's geography in order to determine which regions can grow what kind of plants. All this research will be the basis of a long-term program for developing our economy, and we are trying to update our techniques for this research. The Western countries, the highly developed countries, have already had hundreds of years to do this work of learning about their countries. For us, this work must be done in a very short time, and we think the new methods and inventions of the sciences can be applied to this end. For example, in studying the natural conditions of the country, we are going to organize some laboratories which will use data from satellites, allowing us to study the whole and to gain general knowledge about the country. This research program is supported by the United Nations.

Our next important program is devoted to researching problems which will serve the development of agriculture. Up till now we have not had enough food for the people. But we think that with the effort of the people, with the new progress of the sciences and technology in the country, we can solve the food problem after some time.

During the war we did much research in medicine, and we are now continuing to develop research in this direction. Along with the scientific problems closely connected to the needs of the people, the government is also supporting scientists to do research in some fundamental scientific field, so-called pure science. We think that in order to have good teaching in the university, in order to have a high level of science and technology in the country as a whole, in order to be able to apply the new advances of technology made in the war to the conditions of Vietnam, research in fundamental fields, research in pure science is also needed. However, we cannot have too many people working in the basic fields; we must concentrate the country's forces on applied research. But we are still keeping a few people, a small proportion, to study the fundamental sciences. And the few people who are working in this field receive the support of the government, and so they can feel enthusiasm for doing work not closely connected with the reconstruction of the country. But in fact all this work is important and has some long-term direct contribution to reconstruction also.

Today I would like to tell you that for the development of education in our country, for the training of the scientific worker of our country, for the development of science, the international cooperation of our country with other countries — with the progressive scientists in the world — plays a very important role. During the war, as well as training undergraduate students in Vietnam, we also sent a very large number of students abroad. Each year our government sent to the Soviet Union and other socialist countries about three or four thousand students. Now we are still continuing to send

U.S. Committee for Scientific Cooperation with Vietnam

Individuals interested in assisting the Vietnamese with the rebuilding of the technical and scientific spheres of their country can obtain more information by contacting the following contacts for the committee: *West Coast*: Edward L. Cooperman, Chair, Physics Department, California State University, Fullerton, CA 92634. *Midwest*: John H. Levan, Chief, Dept. of Clinical Radiation Physics (TRS-114B), VA Medical Center, Hines, IL 60141. *East Coast*: Arthur Galston, Dept. of Biology, Yale University, New Haven, CT 06520.

students abroad, though not such a large number, because in peacetime conditions we have the possibility of training them ourselves. But we do send a small number of undergraduates abroad to study, and we send about 400-500 people to many other countries for the Ph.D. degree. We also invite many scientists from other countries to come to Vietnam to give lectures and to help us do experimental work. Many scientists came, even during the war, and they did not come to work with us in Hanoi, but to the jungle, to work with the people. Since the Paris Agreement of 1973, when the bombing was stopped in the North, we have been able to invite many, many scientists from other countries, and since the reunification in 1975, we have had a very large program of cooperation with the Academy of Science of the socialist countries — the USSR, the GDR, Hungary, Czechoslovakia, Poland, Bulgaria — and have enlarged our international cooperation with other countries as well. We began a very nice program of cooperation with France, an official program with Holland, with Sweden, and with the United Kingdom.

Within the framework of the Dutch-Vietnamese cooperation program, scientists from Amsterdam have sent to Hanoi the equipment for a very nice laboratory in physics, and also equipment to help physicists in the Polytechnic Institute organize a new laboratory for microelectronics. Each year many Dutch scientists come to Hanoi to work in these laboratories, and each year the Polytechnic Institute in Hanoi and Hanoi University also send many young scientists to be trained in the corresponding university in Holland.

France has also sent equipment to Vietnam. We now have a very nice laser physics laboratory, thanks to help from France, and with French help we have also been able to organize a small number of other new laboratories. Since 1975 we have been able to send scientists to France for training, and now each year we have about fifty Vietnamese postgraduate students going to France, and we invite about twenty-five or thirty professors from France to Vietnam to lecture and do experimental work.

We have also begun a program of scientific research with some Southeast Asian countries — Singapore, Malaysia, Indonesia, Thailand, and the Philippines. I think that the international cooperation of scientists in Vietnam is very large and very profitable.

As of now, Vietnam and the United States still have no official diplomatic relations. Even under these circumstances, though, we have begun some programs of action with United States scientists. During the war many delegations of American people, many delegations of many progressive organizations in the United States, visited Vietnam. All these visits were visits for political purposes. But in fact since 1975 we have had a small number of scientific visits with scientific purposes only.

At the National Center for Scientific Research, where I am working, we have organized a very, very modern laboratory in tissue culture, with the help of Arthur Galston, a professor of biology at Yale University. Work begun in this laboratory three years ago is soon going to yield concrete results in agriculture. Another professor from the United States helped us to apply nuclear physics to geology in order to study the mineral resources of the country. Soon this scientist, Edward Cooperman, from California State University at Fullerton is going to return to Vietnam to help us put this work on a higher level. So in fact, even without official relations between the two countries, the Vietnamese scientists already have some relations, some actions, with United States scientists.

United States scientists have made very important contributions to the development of science in our country. As well as equipment and direct help, they have sent us many scientific books and journals, so that we now have many complete sets of many important journals. For example, in physics we have *Physical Review*, in chemistry we have *Chemistry Abstracts* — in several libraries. These libraries were organized with the help of scientists from many countries.

During this visit I have had the opportunity to discuss [scientific cooperation] with our American friends, in order to push for this very nice, very beautiful work. We think we now have some good libraries in Hanoi. With the help of American friends we are going to organize new libraries in Ho Chi Minh city. I would like to emphasize that our visit is the first one of Vietnamese citizens coming to the United States with the American visa.

We are glad the United States State Department supported this visit, and in fact assisted us very much during our visit. So we believe that a new period, a new time is coming. This is a time of improved relations between the two countries, and in these conditions our sincere friends in the United States can contribute more and more to the reconstruction of our country. I believe that this cooperation, this contribution of American scientists to the reconstruction of the country, will be also a contribution to the friendship of the two people. Thank you very much for your actions.

QUESTIONS & ANSWERS

Q: *How have scientists in the U.S. responded to your visit?*

NVH: I would like to tell you that the purpose of my tour in the United States is to establish contact with American scientists in some universities and laboratories, and to know who wishes to help Vietnam actively — who can visit Vietnam and which U.S. laboratories are now ready to accept Vietnamese students for training.

I must tell you that in my very short visit of only three weeks (a very short visit for such a very big country that has so many universities and laboratories) we met many scientists who are ready to go to Vietnam next year. We are now preparing a list of those scientists who can go to Vietnam, and we now know exactly what kind of experiments they can do there, and what lectures they can give. I must now find the corresponding body in Vietnam and try to organize the appropriate contacts with scientists in the United States.

In the United States a new organization has been founded, the U.S. Committee for Scientific Cooperation with Vietnam, which many American scientists have joined. Heading the committee we have professor Arthur Galston from Yale University, who has already been in our country twice, and professor Edward Cooperman from the California State University at Fullerton.

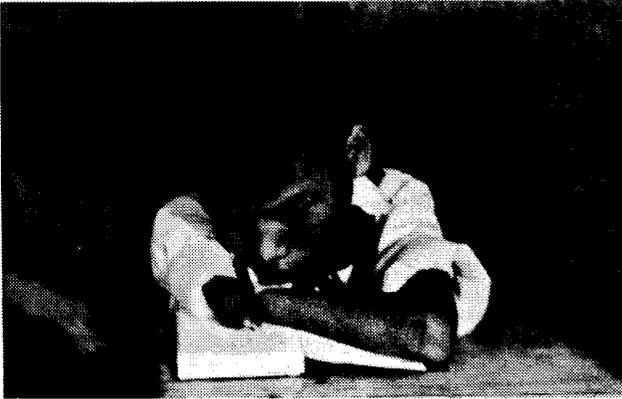
Women in Science

Q: *Are many women entering the sciences?*

NVH: Oh, many. This depends on the branch of science. In medicine, in biology, in agriculture, I think there are many, many women — at least 40 to 50%. In other sciences — in particular in technology, in high industry — the number of women is very small, because the work is very hard.

Q: *In the United States, as the technology advances the work place becomes more and more dangerous for the worker. What is happening in Vietnam?*

NVH: I think that in Vietnam technology is now a very powerful tool of the people in the reconstruction of our country. Now it is not dangerous, it is needed for the development of the country. But if we do not look out for the future, if we do not predict the dangerous consequences of the technologies, in the future our technology could become dangerous. So we must learn the experience of the highly developed countries in order not to repeat the same mistakes. I think in the conditions of Vietnam, in the conditions of socialism, we can further the development of agriculture and the use of science in industry while still avoiding all the dangerous consequences of very big industry.



Le Van Dang lost both parents and his arms in a B-52 raid on Quang Tri. He is a hero because he taught himself to write.

Socialist Character of Science

Q: *What is the socialist character of science in Vietnam? And in the training of the scientist in Vietnam and in the scientist's experience in Vietnam, what steps are taken to prevent an elite of scientists from forming?*

NVH: I think that in Vietnam today, and also in the future, that scientists do not form a privileged class, you see, because of the policy of the government. In the social activity, in the life, in the distribution of the social product there is not a big difference between the scientist of a high level and the worker. So I think that in our country to be a worker or to be a scientist is only some division of work. I must tell you that, for example, at this moment the life level of the worker and of the scientist are almost the same. And many workers if they want to become a good scientist can learn at the university in the evening, and eventually the worker too can receive the degree of the engineer and then he can also become an engineer. So I think that the educational system in our country is organized in such a way that there is very little difference between the people who are working in science and the people who work as the worker.

Q: *Is there a government policy with regard to who is selected to be trained to become scientists? Do you consider class background or is it based on a person's individual ability?*

NVH: The selection of the people to be trained in the university is done by the admission examination — we choose the best student with the largest mark.

Q: *What kind of political education do students get as they go through secondary school and the university?*

NVH: Political education is a part of the general education. So we have the lecture, the lessons in economy, in political economy at the start.

Q: *Back on the question of how you go about preventing an elite, are students graduating from the secondary schools required to put in a certain amount of time in national service, for example, one or two years?*

NVH: I think that in order not to have a big difference between the worker and the scientist, first we must create the conditions so that anyone who wants to study science — so every worker, along with factory work — can study and become a scientist. Second, in the social and economic life of the people, there is no difference between the worker and the scientist. So many people prefer to be the worker rather than to be the scientist — they want to work by hand and there are no economic attractions to be a scientist. Which people want to be workers, which painters, which musicians, which scientists, that is determined by the whole of the people.

Q: *How are decisions made about the priorities in various scientific fields?*

NVH: In order to determine the priorities in science we must know the decisions of the government as to the main directions of the economy. Science and technology must be a part of the whole life of the people: science for the people, for the economy, for the life of the people. So we must start from the program for economic development in order to decide the program for science. We have no science for science, but only science for the life of people.

That is only the principle; but how do we do it? First, the Central Committee of the Communist Party of the government must set some program for the country's economic progress. For example, the Vietnamese Communist Party decides that by 1980 we must produce 21 million tons of rice per year. After the Congress of the Party we have the Congress of All Sciences and we discuss how to organize the scientific work given our condition: what problems do we work on in order to have 21 million tons of rice per year? So you see, the scientific problem, the division of the work and the methods of organization of the research, the network of the laboratories and the institutes — all were decided by the Congress of scientists. But the purpose of scientific research was decided by the government and by the Communist Party.

China and the Soviet Union

Q: *What can you say about the relations between Vietnam and China?*

NVH: Until 1964 we had very good cooperation and exchange with the universities and the laboratories in China. In 1964, with the beginning of the Cultural Revolution, the Chinese closed the universities — as you know — and so we had no people with whom we could cooperate. So almost all cooperation between scientists and almost all university activity were stopped at that

time. We hope that we can resume cooperation when all the universities in China begin to work once more. Unfortunately the political relations between the two countries now are very bad, so we do not think we can have good exchanges in science.

Q: *What about relations between Vietnam and the Soviet Union—in particular, are most of the post-graduate students who go abroad going to the Soviet Union now?*

NVH: I think that the relations between the scientists in Vietnam and in the Soviet Union are very good, very good indeed. I think that about 70 or 80 students get their Ph.D. degree in the Soviet Union. Many laboratories were constructed with the help of the Soviet Union. And last time when Vietnam became a new member of Comecon, the Soviet Union decided to help Vietnam construct several modern institutes for scientific research. So I think that relations are very good and they are becoming more and more important in the scientific life of our people.

Agriculture & Mining

Q: *What are the areas of research in agricultural sciences and how are the people who work on the farms involved in that research?*

NVH: The people who are working on the collective farm are not involved so much in the scientific research, but they apply it. They learn the new techniques and they apply them in their work. Scientific research in agriculture is now done mainly in the big national institutes of agricultural research. But we have also organized many stations, many small laboratories in different provinces, in order to study various problems and to check the new technology before training the people in the collective farm to use it.

Q: *Could you speak a little about what you're doing in mining and mineral processing and how many students are being trained in those areas?*

NVH: I think that the mining engineering in our country at this time and in the near future is very important. We have organized many institutes for research in this field and we also have a separate university for mining and geology. So I think that for our country's reconstruction we must have something to export in order to buy the equipment and the other things we need, and mineral research is one such resource.

Nuclear Power and Energy

Q: *Does Vietnam have any plans to go into nuclear reactor construction as an energy source? What are some of the energy projects in Vietnam?*

NVH: For about 10 years in the future we do not consider it a possibility. I think there are, however, some projects for energy development. The first is to have a good program of industrial development so that we do

not need too much energy. Before we try to find new energy sources we must find ways to economize.

In the future we think that we shall continue to have more and more energy from thermoelectric stations, because we have good coal and we think that the country's oil is also a big asset. We have already done some work together with the French to develop our oil industry and we plan in the near future to extract oil from the sea in the south of Vietnam. With the help of the Soviet Union we are presently constructing new hydroelectric stations in the north — and this is also a very important source of energy in our country. So we think that we have two realistic forms of energy: thermoelectric and hydroelectric energy.

Together with this kind of energy we have also begun some programs of research in solar energy and energy from biomass. And I think that in all these areas of research the United States is the country which goes before all other countries. So what we learn from U.S. scientists in solar energy and energy from biomass will be very important for Vietnam, and we hope that with the help of U.S. scientists, in the future we can apply the advances of research in this field.

How Can We Help?

Q: *What are some of the ways, that as scientists, we can assist the reconstruction of Vietnam?*

NVH: In the past, U.S. scientists have helped in at least three ways. First, some scientists have already come to Vietnam to work together with us and to contribute to the reconstruction of our country. Second, the universities and the laboratories in the United States have received Vietnamese scientists for training, and these Vietnamese scientists have already put their experience to work for our country. Third, books, journals, a small amount of chemical material, scientific equipment, etc., have been sent to libraries and laboratories in our country. In the future, perhaps there will be some official help of the government, that would be better.

Following the talk, the Association of Vietnamese Patriots in the U.S. read an urgent message asking for direct assistance to Vietnam. Since September of last year Vietnam has suffered its worst natural disasters in 35 years. Typhoons and unusually high floods swept the entire country, leaving a wake of countless deaths and immeasurable destruction of crops and physical property. Thus the Association earnestly asks for any form of assistance individuals or organizations can give. To expedite the process of assistance, the Association has asked that checks be sent to:

Flood Fund

The Association of Vietnamese Patriots in the U.S.

P.O. Box 16332

San Francisco, CA 94116

FOOD AND AGRICULTURE

IN CHINA

PART II

by Michael Hansen and Stephen Risch

The following is the concluding half of a two-part article. The first part appeared in the previous issue of SftP, May/June 1979 issue.

Pest Control in China and the U.S.

Yet another aspect of the production process which distinguishes U.S. agriculture from Chinese agriculture is their relatively greater emphasis on cultural and biological methods of insect control as opposed to chemical control. In practice, this emphasis involves a two-stage approach to the problem. First, insect populations must be carefully monitored so as to know precisely at what stage a control agent should be used. In each production team, individuals are assigned the task of conducting censuses of eggs, larvae, and /or adults of certain pests at particular stages of crop development. These are made by either directly counting the insects on the plants or by daily monitoring the number of adult insects caught in various kinds of traps placed in the field. An especially common insect trap for this purpose is a black light which attracts certain night flying pests to a water-filled basin (indeed, our nighttime train rides through the Chinese countryside were punctuated every few miles by such a "black light display").

The value of such locally obtained information is not only in predicting exactly when a particular control agent should be applied. In addition, these data are organized by technicians at more central levels who then use them to develop long-term predictive models of insect abundance and uncover the underlying causes of the insects' abundance and distribution. Such systematic insect counts over time and space are relatively uncommon even in developed countries and their availability in China results directly from the organized nature of the local agro-science infrastructure.

Once it is determined that some control agent is needed, local personnel decide exactly what it will be.

Mike Hansen, a graduate student in biology at Michigan, and Steve Risch, who teaches biology at Cornell, both do research on biological control of insects, and have been active in the Ann Arbor chapter of Science for the People.

The methods of biological and cultural control employed in China are essentially the same as employed in the U.S. and the rest of the developed world. What is different, however, is the extent of the usage of these methods — the degree to which biological and cultural techniques are chosen instead of chemicals. We noted (as did the National Academy of Sciences Insect Study Group) that the use and understanding of non-chemical methods of insect control are extremely widespread throughout China, and that whenever there appears to be a choice between a chemical or non-chemical means of control, the non-chemical means are chosen. By 1977, methods of biological control were employed on more than 6.6 million hectares (more than 70% of the land under permanent cultivation for crops) and this was to increase in 1978 and 1979.(12)

All the brigades we talked with were trying to decrease their use of pesticide even further. We observed many examples of such efforts — a typical situation occurred at the Xia-ding-jia Brigade, located in Huan county of Shangdong Province. In 1976 they started using a parasitic wasp, *Trichogramma*, to control pests on fruit trees. These tiny wasps lay their eggs inside the eggs of pest insects; when the wasp larvae hatch, they consume the pest egg and thus act as a control agent. In China, large populations of these wasps are raised in the brigades by using the eggs of giant silkworms. When it is desired to use the wasps against a particular pest insect in the field, a large number of silkworm eggs (each one containing approximately 40 wasp larvae) are taken to the field and placed on the crops. When the wasp larvae hatch, they search out the eggs of pest insects and destroy them.

When we visited the brigade, they were using this method of biological control on 25% of the fruit trees. As a result, they have been able to reduce pesticide usage by 33% from the pre-1976 levels of 750 kg/yr to the 1978 level of 500 kg/yr. We were told that in three to five years they hope to be able to use the parasitic wasps on 100% of the fruit trees. The principle obstacle in reaching this goal is obtaining a sufficient quantity of silkworm eggs. Research is being conducted at the Peking Institute of Zoology and the Canton Institute of Entomology to develop artificial eggs which can be used



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in place of silkworm eggs pointedly illustrating the continued link-up between peasants' needs and high level scientific research in post-Mao China.

The multi-faceted Chinese approach to pest control should be sharply contrasted to that of the U.S. which relies almost exclusively on a chemical control strategy, as has been well documented by Robert van den Bosch in *The Pesticide Conspiracy*. Whereas China appears to be reducing pesticide usage wherever possible, the U.S. is increasing usage at a tremendous rate. In 1966, for example, 33% of the U.S. corn acreage was treated with pesticide, an increase of 50% from 1964.(13) In fact, the doubling time for volume pesticide used has been estimated to be 8 years.(14) In spite of this heavy pesticide use, the insect problem appears to be getting worse. Thirty years ago annual usage of pesticide was 50 million pounds; in 1976 the figure was twelve times as high, at 600 million pounds. Yet, in the same time period the percent of preharvest crops destroyed by insects has increased from 7% to 13%.(15)

A good case can be made for the assertion that heavy pesticide usage has aggravated, if not caused, most of the present day insect problems in the United States. Reliance on pesticides as a major means of pest control is a vicious cycle which leads to ever-increasing use and dependence on them. There are two major factors causing this cycle. The first is the fact that pesticides are often more potent at killing the natural enemies of pests than the pests themselves. Thus, a resurgence of pests to higher numbers than pre-spraying levels often follows an application of pesticide. Outbreaks of the European red mite, *Pononychus ulmi*, in Canadian

orchards have resulted from the use of DDT which destroys the mite's natural enemies. In the year following DDT application red mite densities were higher while densities of all predators were lower than the previous year.(16) The same phenomena has been found true for a wide range of pesticides (including DDT, dieldrin, aldrin, endrin, carbaryl, parathion, and azodrin) and for many other pests on such crops as citrus, oranges, avocados, apples, olive, cotton, grapes, lettuce, and strawberries.(17) It is also a frequent occurrence that pests which previously were of secondary or minor importance have become major pests as a result of pesticide use intended to destroy the major pest. Cotton is perhaps the best of the many possible examples. The tobacco hornworm, which in 1977 destroyed half the U.S. cotton crop, or \$50 million worth, only became a problem after pesticides were used to kill the primary pests which were pink bollworm and boll weevil.(18)

The second factor is the rapidity and ease with which some pests evolve resistance to pesticides. This has been well documented for a large number of insect pests.(19) As a result of these two factors pests become more of a problem, thus requiring the use of even more pesticides which further aggravates the situation, and so the cycle continues. Heavy usage of pesticides can be likened to a kind of phenological addiction to drugs — one needs to take larger and larger doses to obtain the same effect.

In addition to the problems inherent with pesticide use, we must remember that they are sold by large chemical companies such as Dupont, Monsanto, Dow Chemical, American Cyanamid, and Velsicol (makers of

PBB and kepone)(20) whose primary goal is to make a profit. A top executive of Chevron has stated that unless his company achieved a certain annual expansion rate of its markets and profits, its parent company, Standard Oil of California, would divert its capital from pesticide manufacture to other areas of chemical production.(21) As a result of the pesticide market being so large and competitive (there are 1,400 different types of pesticides and 30,000 formulations), chemicals such as DDT that are inexpensive and kill a wide range of insects and other living animals are preferentially developed and sold by chemical companies over the selective insecticides, which are usually more expensive but kill only a few different pest species, because the companies are trying to gain a larger share of the market and, hence, more profits.

The profit incentive also induces producers and canneries to force heavy pesticide usage on farmers they buy from. Larger companies that sell produce and processed food compete mainly through advertising to create a differentiated product, as previously mentioned. Products are differentiated primarily on the basis of superficial appearances and thus the companies have created in consumers an obsession for cosmetically undamaged produce. In order to maintain their standards of quality, producers and canneries often require farmers to spray on a set schedule or risk losing their contracts. It should be remembered that over 50% of the food grown in the U.S. is done via contracts. Even independent farmers aren't free from heavy pressures to use pesticides. A study done by the EPA (Environmental Protection Agency) on agricultural pest-control decision-making showed that chemical company salesmen and media advertisements collectively determine whether a grower decides to use pesticides and which one they choose to use.(22)

In addition, growers may be pressured into using pesticides in order to insure that their crops will be bought. The orange industry in California is a good example of this type of corporate strategy. If the demand for oranges is high, virtually all oranges will be bought, regardless of amount of insect damage. But as soon as the fresh market becomes saturated, buyers will either start refusing to buy them or will buy them at much lower prices for the juice and by-product market, ostensibly because of "insect damage"; what they really are doing is cutting down the supply so as to keep their prices up. Growers, on the other hand, never know when the market will be flooded — so they use pesticides regularly in hopes that they can keep their crops clean enough so the buyers won't refuse them.

Not only do chemical companies influence the decisions made by farmers, they also heavily influence the research done on pesticides as well as the laws regulating them. Research that would result in a large decrease of sales of a product will often be censored or suppressed, especially if done through the U.S.D.A (United States

Department of Agriculture). van den Bosch relates many stories of individual scientists whose research was suppressed as well as a few instances in which agro-chemical companies, who are often huge contributors to agricultural schools, have threatened to remove research funds given to particular universities. He even relates a story of a State agriculture school that had been threatened with cuts in the budgets of the Entomology department as well as the entire University budget if a resolution was passed there condemning the eradication program against the fire ant which involved huge quantities of a pesticide, Mirex, and the expenditure of large amounts of money.(23)

Nor are laws concerning pesticides and their usage exempt from agribusiness influence. In 1970, a bill was proposed in California that would require licensing of pest-control advisers (people that give advice on pest control measures to farmers), 2) prohibit persons affiliated with chemical companies (e.g. salesmen) from recommending the use of any dangerous chemical, and 3) would also establish a State pest-control advisory committee which chemical company employees would not be allowed to serve on. The bill that finally was passed bore little resemblance to the original one. Salesmen were included without restriction among licensees and the makeup of the Pest Control Advisory Committee included a representative of the pesticide industry, a licensed pest-control operator (such as a crop duster), and a licensed agricultural pest-control advisor (most likely a pesticide salesman, since of the 1850 licensed advisors over 1400 are salesmen).(24)

1975 saw the passage of bill HR 8841 which amended FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) giving the Secretary of Agriculture (often a friend of agribusiness) a veto power over the Environmental Protection Agency's pesticide regulations and cancellation decisions. The bill also allows "private applicators" to certify themselves to be competent in the use of very dangerous kinds of pesticides. Since the majority of private applicators are farmers whose spraying decisions are dominated by chemical company ads or pesticide salesmen, this law opens up a huge market for exploitation by the chemical companies who can now push more dangerous insecticides on the farmers through a media blitz.

Despite the heavy reliance on pesticides, there have been a number of extremely successful instances of integrated control with the pest being controlled via a number of factors including natural enemies, cultural controls, as well as limited and more rational use of pesticides.(25) Even though numerous studies have shown that integrated control is economically cheaper and more effective than chemical control,(26) its use is still not widespread. Why? Because the huge chemical companies, through their manipulation of farmers, censorship and repression of anti-pesticide research, and

manipulation of laws to their benefit, want to preserve the pesticide status-quo and insure that there will be a large market of their profitable pesticides. Thus, we can see how the profit motive, the driving force of capitalism, has contributed significantly to the problem of insect control in the U.S.

Food Distribution

Food distribution is yet a third way in which the food system in China contrasts with that of the United States. Differences in food distribution exist between rural and urban areas in China and will be discussed separately. The two main foods in the Chinese diet are grains and vegetables, so the following discussion will concentrate on these items.

Grains are one of the staple items in China that is rationed. Generally, peasants are allotted larger grain rations than urban workers because they perform more physical labor. In rural China rations are first determined on a production team level, the size being worked out via negotiations with the county and State and being based on the number of people in the team as well as the amount that the team produces.

Determination and distribution of individual rations is handled solely by the production team. The usual procedure is for a team to develop a list stating the maximum amount of food grain allotted to each person, taking into account their age, sex, and level of physical activity. Each person will then automatically receive a certain percentage of the maximum (usually 50-80%), which is determined by the production team. They receive this percentage, which is usually enough to meet their basic physiological needs, regardless of what they do. Thus, even if a person participates very little in collective labor, they still will not starve. The rest of the ration is then distributed in proportion to the amount of time spent in collective labor (i.e. work on the team's land).

Distribution of grain rations usually occurs right after harvest. The peasant goes to the grain store in his/her area to pick up their ration, either in the form of grain or in a processed form such as flour or noodles. In most places an entire year's ration will be handed out at one time and a family will store the grain in special huts. In urban areas, grain is rationed in monthly allotments the size of which is determined by their requirements and overall availability of food. The grain is obtained through the use of ration books.

In contrast to the basic grains, vegetables are rarely rationed. In rural areas the majority of vegetable production occurs on private plots⁽²⁷⁾ which are owned by households. Private plots are the rule in China except in brigades such as Xia-ding-jia or Da-zhai which have done away with them because they believe that the land could be more efficiently farmed and irrigated in a collective manner. The size of the private plot varies a great deal depending on how much land the brigade has, with between 5-7% of the communal land being set aside for



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private plots with a given amount of land being allocated per person.⁽²⁸⁾ Vegetables such as corn, eggplant, squash, tomatoes, and beans were the most common crops in the private plots we saw. In contrast, urban dwellers purchase vegetables along with meat, fish and poultry at a market. We visited urban markets in three cities but we will primarily discuss the one we visited in Shanghai as it was quite representative of the markets observed.

Virtually all the produce in an urban food market comes from within the city or surrounding suburbs and counties. The amount of urban agriculture was extremely surprising; vegetables were grown on almost all available land from vacant lots, small plots around factories or museum grounds, even along the runway of an airport. The reason that so much of the land within cities is put into production is because the Chinese believe that their cities should be as self-sufficient as possible, so as

not to act as a drain on the resources in the surrounding countryside. Shanghai, the second largest city in the world with a population of ten million, grows 80% of its food within the city and the surrounding suburbs. Compare this to a city such as New York or Chicago which imports large quantities of food from as far away as California or Mexico.

Vegetables and grain produced on communes near large urban areas will be sold to the State rather than directly to a market. In addition, in large cities such as Shanghai, communes deliver produce to State owned food stations such as the Shanghai Food Co. (pork and chicken) or Shanghai Vegetable stations. The market then buys directly from the state stations. In Soochow, a small city outside of Shanghai, brigades often deliver produce directly to the market. No money changes hands as the brigades are remunerated by the State rather than the market.

Although some produce is brought to the market by trucks, the majority is transported on carts and in baskets on the back of bicycles. We arrived in Shanghai around nine o'clock at night and saw many people riding bicycles either pulling or carrying baskets of cabbages, onions, potatoes, or green peppers. Walking around the city that evening we noticed that for a few blocks around the market many bicycles were parked at the side of the street and were unattended, the baskets neatly stacked with cabbages. There obviously was little problem with theft as one could tell by their symmetrical arrangements that none of the cabbages had been stolen. Perhaps theft isn't necessary when you're guaranteed enough food to eat.

The market we visited in Shanghai opened at five a.m. and closed at midnight. It was a fairly large market, serving 28,000 households or about 120,000 people. It sells 50,000 kg. of vegetables, over 10,000 kg. of fish, and 5,000 kg. of pork each day and even more on holidays. We were told that fish, poultry, and meat are sold only in a collective fashion; individual selling is illegal, although we did see several women selling potatoes and one selling fish. People are allowed to sell produce from the private plots in the suburban markets but not in the urban ones.

One of the first things that strikes one about the market is its cleanliness. One can find virtually no refuse and we saw no flies at all even on the hanging slabs of meat. This is the result of widespread public campaigns in the 1950s and 1960s to clean up garbage and other types of organic wastes which are the breeding ground of flies and also of a sparing use of pesticide. When we asked about cleaning we were told that each worker in the market was assigned an area which they must clean on a daily basis.

There was an ample diversity of fresh vegetables for sale. We saw at least 15 different varieties and were told that about 100-150 different types become available throughout the course of a year. There was no rationing

of vegetables and prices were relatively cheap. Bean products such as tofu or bean curd were the only plant products rationed. Poultry items — ducks, geese, and chicken — were readily available and moderately expensive. In this market eggs were rationed, people being allowed only two kilograms per month. There was a fresh selection of fish which was relatively inexpensive. Pork was rationed with each person allotted just over one kilogram per week.

Besides selling food, the market provides its customers with a number of services. First, there is a special section for pregnant and lactating women which sells foods such as liver which are very high in protein, vitamins, and minerals. In addition, a pregnant woman is allowed to buy higher quantities of any rationed product.

Another section in the market offers a wide variety of convenience foods for working couples who don't have the time to prepare and cook a meal. The convenience foods are traditional dishes such as beef and green peppers or stuffed peppers, with the meat and vegetables pre-cut or the peppers already stuffed. One merely takes the dish home, puts it in the oven or wok and within half an hour you have a fully prepared nutritious meal.

Chinese convenience foods bear little resemblance to their American counterparts — burgers and fries from McDonalds, chicken from Colonel Sanders and hot dogs from Dairy Queen, which are usually characterized by their high grease and caloric content and relatively low food value. Because convenience foods are the most profitable sector of the U.S. food industries, and since most competition in this sector is based on product differentiation (using advertising to make the buyer think that there is something special about the product), the result is a product with declining nutritional value (nutritional value is not one of the criteria used for product differentiation, but rather superficial appearance which is obtained via processing). Processing tends to remove nutritional value and there is no reason to replace or to add it, since it would just be an added cost of production.

Conclusions

Many other visitors to China made observations similar to our own, but frequently they are accompanied by quite different interpretations.(29) It is quite common when comparing the food and agriculture systems in China with that of the U.S. to ascribe the important differences one sees merely to the different levels of technological development (e.g. China has a large and relatively "cheap" labor force and so can afford the labor intensive techniques of organic fertilizer utilization and biological/cultural insect control).

There are several ways to answer this critique. One is to directly point out that there are important aspects of the Chinese ideology *per se*, separate from the existence of the admittedly large labor force, that have facilitated the development of these differences. And now that China has speeded up the process of technological development, she is still apparently committed to these progressive forms of decision making, and agricultural production and distribution, despite the fact that her agricultural labor force will greatly diminish. A second way to look at the problem is by comparing China with other underdeveloped countries with large rural populations (Mexico, Brazil, Central America, Malaysia, India, Egypt, Zaire, etc.). It is well known that the agricultural development policies, decision making structure and techniques of production and distribution of these countries are profoundly different than those of China and in many important ways more closely resemble those of the U.S. It is not, then, the absolute stage of technological development that is most important in determining the agricultural policies of a government, but rather the ideology and social relations of production of a society.

In this respect we have noted with some concern changes in the domestic policy of China during the last several years. In discussions with our hosts we were able to confirm such developments as:

- 1) The re-institution of a series of key schools (including secondary schools, universities, and agro-technical colleges). Set up at the national, provincial, and county levels, these schools are endowed with better facilities and faculty than most schools and their function is to channel the "brightest" students into the best schools in the hopes of rapidly producing a large work force of better scientists and technicians.
- 2) A system of nationally standardized exams was re-instituted in 1978. The results of these exams will be the most important criteria in deciding which students go to universities and which students go to key schools. Further, the old requirement of students spending one or two years in manual labor before pursuing advanced studies has been dropped.
- 3) The government has decided to give special prerequisites such as higher wages and better living conditions to researchers.

We are unsure of the ultimate effects of these policy changes on the food production and distribution system, but it seems to us that there is the potential for the re-emergence of a technical elite in China that could become somewhat divorced from the masses whom they are supposed to be serving. On the other hand, the recent institutionalization and proliferation of the four level agro-science network suggests a continued commitment to incorporate agricultural workers at all levels in important decisions about production and distribution. Our lengthy discussions with many Chinese scientists and technicians tend to reinforce our belief

that this commitment is also felt among scientific workers throughout China.

Yet the potential contradictions in the developing agro-science policy are real and merit close scrutiny from China's friends during the coming years. Ignoring these contradictions and concentrating only on the obviously progressive aspects of China's agricultural policy would be to miss the potential for learning important lessons concerning the development of a socialist society. □

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resources

Please send your items and suggestions for this column to Tallahassee SftP, c/o Progressive Technology, P.O. Box 20049, Tallahassee, FL 32304.

ENVIRONMENTAL CONTAMINATION

The Pendulum and the Toxic Cloud: The Course of Dioxin Contamination, Thomas Whiteside, Yale University Press, 1978, 205 pp., \$4.95 (P). This is a powerful investigative report that describes what is known — and emphasizes what is not known — about dioxin. One chapter details the history of herbicidal adventurism. Two chapters are about the consequences of an explosion of a chemical factory near Seveso, in northern Italy, in 1976, when a "toxic cloud" containing dioxin descended onto the Seveso Community. It killed thousands of birds and animals, it caused illness among local children, it made necessary a lengthy evacuation of residents.

CLEAN ENERGY NETWORKING

International. The World Information Service on Energy (WISE) was set up at a meeting in Amsterdam of over 150 people from all parts of the anti-nuclear and soft energy movement, world-wide. The aim is to be at the service of the movement throughout the world, providing action-oriented information, not only for the anti-nuclear struggle but about all forms of energy. Send \$5.00 (international money order) for samples of their periodical (English language edition), to WISE c/o agenor; 13 Hobbemastraat; Brussel 1040; Belgium. Another group doing similar work is the International Conference of Coordination of the Anti-Nuclear Movement; P.O. Box CH-4015 Basel; Switzerland.

National. An organization that is acting as a clearinghouse for anti-nuclear information is the Nuclear Information and Resources Service (NIRS); 1536 16th Street, N.W.; Washington, D.C. 20036. The best national periodical is the **Critical Mass Journal**; P.O. Box 1538; Washington, D.C. 20013. Monthly, \$7.50/year.

PEOPLE'S SCIENCE IN ENGLAND

Pluto Press (London, England) has published three titles that are available to U.S. readers via Southwest Book Services; 4951 Top Line Drive; Dallas, Texas 75247:

Microchips, the New Technology, CIS Reports #23, 1979, 65 pp. "an investigation of the work revolution, the cut throat competition between companies, the attack on jobs, and the collusion of the government". *Demystifying Social Statistics*, Irvine, Miles & Evans, eds., 1979, 384 pp. "A unique contribution to the radical analysis of science under capitalism. It sets out to show that statistical data are not objective facts and that statistical techniques are not neutral tools. Both are conditioned by the society in which they have developed." *The Politics of Nuclear Power*, Dave Elliott, 1979, 160 pp. "The anti-nuclear movement in Britain is unique in avoiding direct confrontation with the authorities and in seeking to incorporate the politics of nuclear power into a wider political strategy."

NATIVE PEOPLES AND ENERGY

A recent issue of **Akwesasne Notes: A Journal for Native Peoples** (Mohawk Nation; via Roosevelttown, New York 13683) is almost entirely about energy issues. "Native Americans and the Nuclear Fuel Cycle", "How Much Development?", "Cameron Residents: Once Burned, Twice Cautious" (about radiation from open pit mines), "Tribal Officials Involved in Uranium Mining Companies", "Bury My Heart at Red Rock" (about soaring rates of cancer), "And Now: Uranium In The Black Hills", "And-Skagit Nuclear Plant", "Uranium Mining on Navajo Land" and "Navajos and Friends of the Earth

Sue to Stop Uranium Actions!" are examples of articles included. In this same issue (Volume 11, #1, February 1979) are articles about water negotiations, genocide in Paraguay, sterilization abuse, etc. Do check it out, \$1.00/issue, \$10/year (suggested).

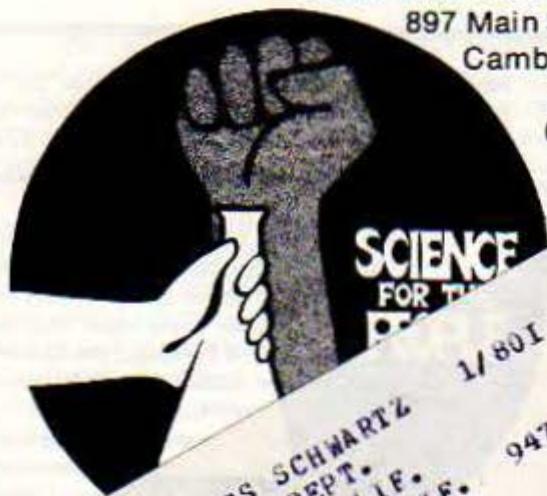
Native Americans and Energy Development is an 89 page booklet produced by the Anthropology Resource Center (P.O. Box 90; Cambridge, Mass. 02138). Basically the work is about energy development in the west and southwest and about the social impact of that development on Native communities. It is a rare attempt to do a fairly extensive scientific study on the subject. The studies are entitled: "Energy, Agriculture and Social Science in the American West", "Black Mesa and the Hopi", "Energy Developments and the Navajo Nation", "Can Tribes Control Energy Development?", and "Energy Boom Towns: View From Within". It should be considered required reading by environmentalists and Native people who have concerns about natural resources development, on or off reservations. \$4.00..individuals, \$6.00..non-profit groups and libraries, \$10.00..government and business organizations.

COMPUTERS AND APARTHEID

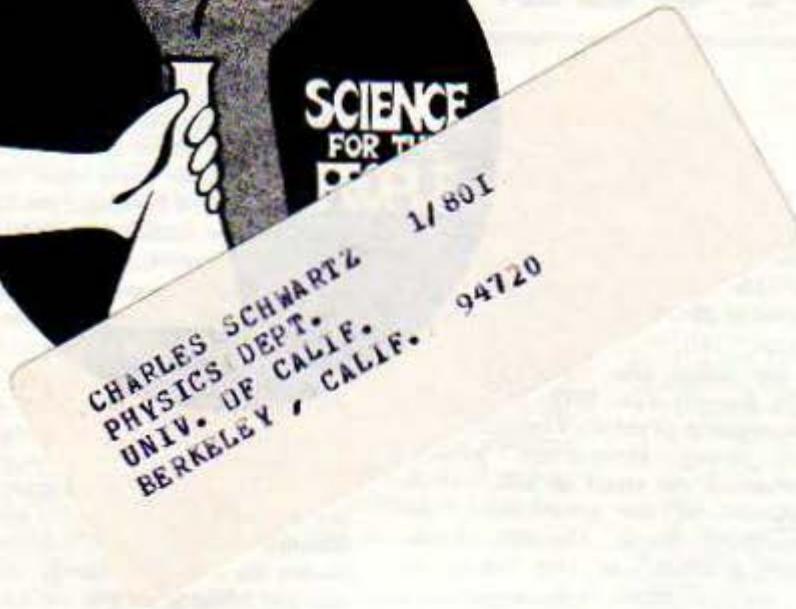
For several years the Africa Fund/American Committee on Africa (198 Broadway; New York, NY 10028) has made available a very complete listing of resources that relate to independence movements in southern Africa. Recently they have published **Computers in South Africa: A Survey of U.S. Companies** by Richard Leonard, 1978, 15 pp., \$1.00. It examines the role of U.S. computer companies in South Africa and the ways computers are used to strengthen Apartheid. It critically analyzes the claims made by the companies to justify their South African operations.

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