

The critics of the Love Canal study, on the other hand, explain that it is illogical to say that an unscientific study can provide evidence of anything. And they say that the tragedy of the situation is that the Love Canal residents are the ones to suffer.

Phyllis Whitenight, a Love Canal homeowner, was a subject in Picciano's study and was one of those found to have supernumerary acentric chromosomes. Her reaction to the study and its critics is that the government is trying to whitewash some very scary data. Whitenight had breast cancer nearly 5 years ago but the cancer had not spread and she says she was given no chemotherapy or radiation treatments following her mastec-

tomy. Until the chromosome report, she had thought her prognosis was good. "Now the fear comes back," she says.

Gibbs, speaking for the Love Canal Homeowners Association, says Picciano's report "is very frightening to the residents." She believes it indicates that the residents are at risk for cancer, birth defects, and miscarriages. The HHS review of the data, she says, is seen by the residents as "almost an attempt to sabotage the report." The residents think the government is trying to adjust the figures and minimize the risk by criticizing the study. "It scared the hell out of the residents when the government reacted [to Picciano's report] by moving people out," Gibbs remarks.

In the view of several critics, the EPA made an incredible blunder by releasing such a poorly conducted study. Far from aiding its case against Hooker, the agency may have hurt it. "If there's anything to bring joy to the heart of Hooker, it's a discussion in the public press that questions the validity of the EPA data and the interpretation of it," says one federal administrator. The EPA may also have damaged its credibility in the scientific community. "I for one will never believe anything the EPA says or releases again unless it has been peer reviewed," says Ernest Hook, of the New York State Health Department and a member of the HHS panel.

—GINA BARI KOLATA

## Love Canal Residents Under Stress

*Psychological effects may be greater than physical harm*

The government's decision to help relocate 710 families living near Love Canal has done little to dissipate the miasma of fear and anger that envelopes the area. "People are very, very frightened, almost panicked," said Lois Gibbs, president of the Love Canal Homeowners Association, 3 days after the decision, which followed on the heels of an Environmental Protection Agency study that showed chromosome damage in 11 of 36 persons tested.

Panic, said Gibbs, was why the homeowners association kept two EPA officials hostage for several hours. The action, she says, was a "direct result" of the study being released "with nobody to tell us what it meant or what they were going to do about it." If the EPA officials had been let out the front door, "they would have been torn apart."

In the almost 2 years since the families living nearest the old chemical dump site were evacuated, residents of the surrounding area have been living under tremendous stress. So rancorous had the atmosphere become that a couple of weeks before the latest relocation decision, one mental health worker says, "we thought they [the residents] were going to torch the neighborhood." Although no one has yet come up with the unassailable evidence that chemicals from the dump site have been making people sick, there is enough to convince people that they are being poisoned and that the authorities

are more interested in soft-pedaling the problem than in protecting the public's health.

The psychological damage from this long-running disaster may ultimately turn out to rival and perhaps exceed the physical damage. Love Canal has elements in common with two other recent situations. One is the accident at the Three Mile Island nuclear facility. Despite the fact that there were no adverse physical consequences of the release of radioactivity into the environment, a large portion of the population was profoundly alarmed, and ignorance and misinformation from those in charge created a deep and abiding mistrust.

The residents of the canal area may have even more in common with Vietnam veterans who believe their exposure to the dioxin-containing herbicide Agent Orange has led to cancer, birth defects, and a variety of other disorders. In both these instances there are real sicknesses to contend with, and the sufferers feel helpless and betrayed by the government's apparent unwillingness to move swiftly to set things right.

The kind of stress residents of Love Canal have been under is similar in many ways to what happens in the wake of a natural disaster. But there are significant differences. A Red Cross worker says "give us a fire or a tornado or a flood any day." A natural catastrophe is time-limited, and governments generally have

well-oiled apparatuses ready to roll in the event of one—witness the generally efficient management of the effects of the Mount St. Helens blowup. But at Love Canal, the nightmare goes on and on. And once the dust finally settles, the residents may spend the rest of their lives wondering when poisons in their systems will erupt and worrying about the effects of exposure on their children and grandchildren. Authorities have been at a loss about how to handle the immediate situation, not to mention the long-term one. As the Love Canal Homeowners Association has observed, "there is no policy which the Love Canal situation fits."

The Niagara Falls Community Mental Health Center has tried valiantly to relieve distress, deploying three outreach workers full-time in the Love Canal neighborhood. They put together a special pamphlet for Love Canal residents on "coping with stress" and publicized various counseling programs. But people who have chosen to avail themselves of these services probably number no more than 100. The residents are mostly blue-collar workers, the men employed in chemical plants or auto parts manufacturing, who attach stigma to mental disorders and who in any case would tend to ascribe their problems to the obvious causes of health and financial difficulties.

Thus, it appears that the Love Canal Homeowners Association, formed in

August 1978, has emerged as the primary cohesive force and source of help and information to the community. Lately the office has been in a state of chaotic activity, acting as the central source of information for people affected by the recent relocation decision. The Love Canal people feel betrayed by all levels of government, says association president Gibbs. They are furious at the state government for telling them things were all right when they were not and for withholding the results of several health studies. Lately they have been comparing themselves to Cuban refugees for whom the government has opened an Air Force base. They have been trying for 2 years to get access to a local Air Force base, which has finally made 90 units available to them.

It is the uncertainty that is grinding everyone down the most. It will be 4 to 6 months before EPA's newest health study will be complete, and during that time everyone will be perched in hotels and apartments, living in limbo until they find out whether they will be allowed to return to their homes. Meanwhile, they fear for belongings that have been left behind, their homeowner's insurance is running out, and (unlike the 237 families in the first evacuation) they have no guarantee that the state will step in and buy their houses.

Events have taken their toll in both physical and mental health. Informal surveys conducted with the aid of Beverly Paigen of Roswell Park Memorial Institute have convinced residents that what they see as a high rate of miscarriages, stillbirths, and birth defects is a direct result of exposure to poisons. The surveys also seem to indicate high rates of cancer, respiratory problems such as asthma and emphysema, urinary system problems, and liver and kidney disorders. But the survey evidence is disputed by the scientific community and serious questions have been raised about what, if anything, the surveys show. Nonetheless, the residents believe this evidence and suspect that poisons affecting the central nervous system may be implicated in nervous breakdowns and suicides. There were 17 breakdowns and 7 suicides among 550 families in the decade before the Love Canal problem was exposed.

Many people are purportedly suffering—very much like the alleged victims of Agent Orange—from a vague assortment of psychophysiological problems such as depression, irritability, dizziness, nausea, weakness, fatigue, insomnia, and numbness in extremities.

Even if the health damage from the

*A hand-made sign on the porch of a home at Love Canal.*

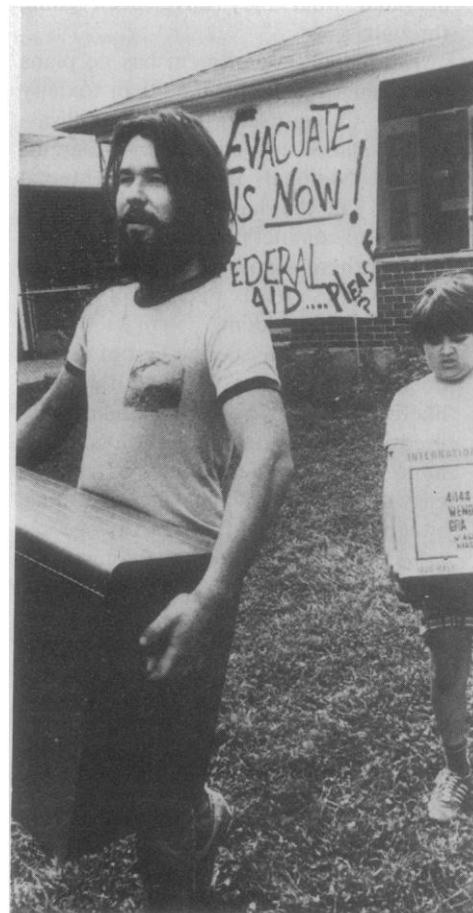
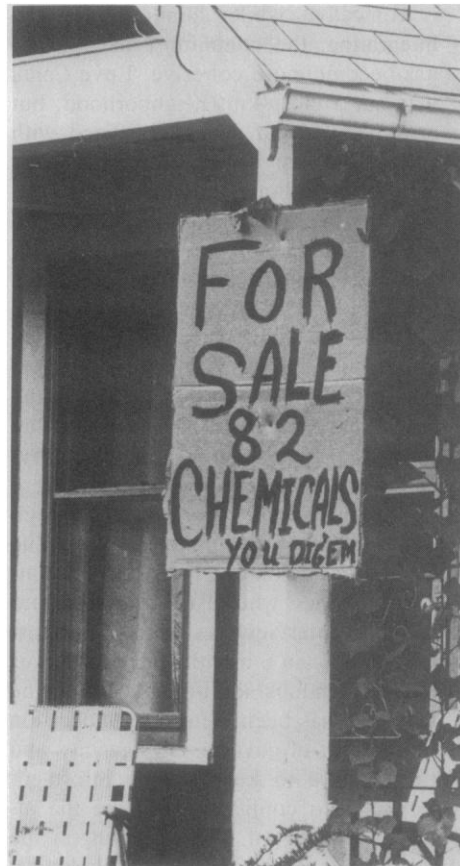
chemicals could be definitely ascertained, it would be extremely difficult to sort out which health problems result from poisoning and which can be ascribed to emotional stress. The epidemiologic picture is further muddled because of pending damage litigation against Hooker Chemical Co. It is well known, particularly in the field of industrial medicine, that people are much more likely involuntarily to continue suffering the effects of a disease or injury when they stand to gain money from such suffering.

One thing is certain: the Love Canal situation has not been a promoter of family unity. Gibbs says the homeowners association has found that among the 237 families involved in the 1978 evacuation, 40 percent of the couples have separated or divorced. She thinks the tally from the 710 families involved in the latest relocation will be even worse, as the families are worn down from 2 years of stress and uncertainty.

The typical family situation, she says, is that the wife wants to leave and the husband says they cannot because he has invested his life in the home and his work. The wife insists they must move for the sake of the children, the husband says they can't afford it. So the wife leaves with the children.

Gibb says the crisis has generally had a more debilitating effect on the men than the women. "They feel they've lost all control over their lives. They have no choices. They can't protect their home or their children. I have never in my life seen so many grown men cry," she says. The men in the neighborhood are "macho" types who feel they should be able to protect their families whatever happens. But they are also law-abiding citizens who refuse to picket or engage in protest demonstrations or marches "because it's against the grain." Thus it appears that it has been the women of the neighborhood who have taken the initiative in trying to pull things together and press demands on the authorities.

*Love Canal family evacuates its home after the chromosome damage report.*



Ironically, while families are disintegrating, the community as a whole has become more cohesive. Love Canal was not a close-knit neighborhood, but now people who never socialized with each other are sharing their problems and neighborhood quarrels have dissolved. "We could have some wonderful street parties now," says Gibbs.

Robin Bannerman, geneticist at the State University of New York (SUNY) in Buffalo, which has been supplying genetic counseling services to Love Canal residents, believes that "when the smoke has cleared, it may turn out that the greatest damage to health will be psychological and social." But so far, there has been virtually no social research done on the situation except by Adeline Levine, a sociologist at SUNY in Buffalo. Levine, who used graduate students to interview residents in August 1978 and again 6 months later, observes that tremendous additional stress to the residents has been caused by indecision on the part of government agencies and their failure to keep people informed. Levine also confirms that, like the alleged victims of Agent Orange, the people have been getting psychological help mostly in the form of self-help. They consider it stigmatizing to deal with mental health agencies, and in any case they do not believe any outsider can understand what they have been going through.

The federal government has no plans to conduct research other than toxicity studies. Calvin Frederick, head of disaster assistance and emergency programs at the National Institute of Mental Health, said that he would indeed like to be able to conduct research on Love Canal, but there is no way to get money for it unless the area is declared a disaster area by the President.

Love Canal may be the first of its particular type of disaster, but it is very likely not the last, as there are many hundreds of other sites around the country, mute witness to the old days of free and easy dumping. Now that the Love Canal situation has erupted, Gibbs says people are calling from all over the country for information on how to get organized, how to get appropriate health tests done, and so forth. In New York State and elsewhere, officials are undoubtedly wondering how many other communities—people who have been living for years with what appear to be unusually high rates of cancer and other problems—are going to get it into their heads that they, because of government negligence, are being slowly poisoned.

—CONSTANCE HOLDEN

## Big Boost for Solar Energy, Conservation

"If solar can't fly with this, then it can't fly," said a congressional staffer the other day, apropos of the Solar Energy and Energy Conservation Bank that is part of the omnibus energy bill. House and Senate conferees have already approved the bill in the main and it may become law before the 4 July congressional recess.

Public attention has focused principally on the omnibus bill's \$20-billion synfuels program, but the solar and conservation bank may be equally important and perhaps more so. It has been a high priority item for advocates of the "soft path" to energy sufficiency. If Congress actually appropriates all or even most of the money authorized for the next three fiscal years—a total of \$1.625 billion for conservation and \$525 million for solar energy—the "bank" (which will in effect make grants, not loans) should have a substantial impact.

Indeed, the government will pay 40 percent of the cost of a homeowner's solar installation, up to a maximum of \$5000; and, if the homeowner is in a low-income bracket, the subsidy will be up to 60 percent, although the \$5000 maximum will still apply. Moreover, the subsidy is available not just for homes with "active" solar hot water or space conditioning systems employing an array of collectors but also for homes built to "passive" solar designs.

Builders and owners of apartment houses and commercial buildings will also qualify for help, with the subsidy amounting to as much as \$100,000 for commercial structures.

Whereas the solar subsidies will be available for both new solar structures and old ones with retrofits, the conservation subsidies will be only for retrofits and are designed principally to benefit low and middle-income people. For example, a middle-income family will be eligible for a 30 percent subsidy for conservation improvements to its home, or up to \$750.

Solar and conservation tax credits were authorized under the previously enacted windfall profits bill, but such credits can be of little use to a low-income family without much tax liability

(also, passive solar systems have in effect been disqualified for credits). One can choose to take either the tax credit or the subsidy, but not both. For active solar systems, the credit is 40 percent, or up to \$4000; for conservation improvements, it is 15 percent, with a \$300 maximum for a single-family dwelling.

The Solar Lobby is enormously pleased that the solar and energy conservation bank is about to become a reality. John Wilson, one of those who works Capitol Hill for this group, says that the next goal is to see that Congress appropriates the full amounts authorized for fiscal 1981, \$100 million for solar subsidies and \$200 million for conservation. "We think we can get \$300 million out of the Congress as long as the Administration doesn't fight it," Wilson said.

The subsidies will be in the form of either reduced interest charges or reduced principal on loans, and will be applied for through regular lending institutions. According to Arthur Reiger, an official at the Department of Housing and Urban Development where the program will be administered under a special interagency board, it will probably be next spring before the bank is set up and the subsidies become available.

## Discontent at EPA

Implementation of the Toxic Substances Control Act of 1976 has been agonizingly slow, but there was good news recently when the first orders were issued under TOSCA's critically important premanufacture review program and they went uncontested. The companies that had applied to the Environmental Protection Agency (EPA) to register the six new chemicals in question simply withdrew them when informed that recent research indicated that the compounds represented a health risk and that the necessary safety tests had not been performed.

But now comes what many at EPA perceive to be bad news: Blake Biles, director of the premanufacturing review division, has been replaced because of personality conflicts and irreconcilable differences in "management styles" between him and his new boss, Deputy Assistant Adminis-