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RAIN

FEBRUARY/MARCH 1978

VOLUME IV, NO. 5

ONE DOLLAR



Friends Mime Theater

WORLD HUNGER SCAM p. 4
ENERGY THEATER UPDATE p. 16
BUSY BEES VS. GREEDY BEARS IN A.T. p. 12

SOLAR

The Solar Greenhouse Book, ed. by Jim McCullagh, 352 pp., 136 photos, 1978, \$8.95 from:

Rodale Press
Emmaus, PA 18049

The first and only book on the subject, covering on a national scope all three aspects of design, construction and crop production. Especially useful are numerous case studies of the construction and management of different designs in various bio-climatic regions. Many special charts and appendices contain formulas and rules of thumb for evaluating materials, available solar radiation, heat losses, siting, insulation, night shutters and glazing. It does for solar greenhouses what Bruce Anderson's and Alex Wade's passive solar home books have done for solar heating and deserves a spot next to them in your solar energy library . . . it's excellent in breadth and depth. —LJ

Build a Solar Greenhouse—Workshop Style, 21 min., color, sound film, plus an educational curriculum package and a workshop construction package, \$320 from:

Danamar Film Productions
275 Kilby
Los Alamos, NM 89544

Excellent a.t. film with solar expert Bill Yanda in the starring role as hands-on workshop coordinator. On a snowy weekend, a group of volunteers wanting to learn an innovative approach to obtaining free heat from the sun and fresh food for the table built an attached solar greenhouse. The film documents this workshop, demonstrating step-by-step the principles and building techniques involved in a thermally efficient, easy-to-build structure. The fun-filled film demystifies solar technology by emphasizing a grass roots approach available today. —LJ

California Educational Opportunities for Solar Energy and Energy Conservation at Institutions of Higher Education, by John A. Kimball, 1978, 150 pp., a limited number of copies are available free from:

Congressman George E. Brown, Jr.
2342 Rayburn House Ofc. Bldg.
U.S. House of Representatives
Washington, DC 20015

A directory describing educational curricula extracted from a survey sent to 250 schools and colleges in California, this should be a great help to those interested in a soft technology career. Cong. Brown, Mr. Kimball and their staffs are to be congratulated for a job well worth doing and well-done. —LJ



RAIN

Manual for the Solar Can-Type Hot Air Furnace, by Bruce Hilde, 16 pp., 1977, \$2.00 from:

Northern Solar Power Co.
311 S. Elm St.
Moorhead, MN 56560

A step-by-step construction guide with understandable drawings for a system which is very low cost, yet performs as well as most commercial air units and is built from recycled aluminum beverage cans. Materials, including simple UL-approved automatic control and air circulation equipment, are listed along with buying hints. See also "Shoptalk" in Nov. '77 *Popular Science*. Ask Bruce for his price list on glazing materials for this design. If this isn't appropriate D-I-Y technology, I don't know what is. —LJ

Pacific Northwest Solar Buildings, by Robert Lorenzen, 126 pp., Nov. '77, \$5 from:

Center for Environmental Research
School of Architecture
Univ. of Oregon
Eugene, OR 97403

A regional guide, à la Shurcliff's earlier national directory, full of technical, bio-climatic and economic data on 65 solar buildings in Oregon, Idaho and Washington. Well-done, with clear drawings and photos. —LJ

Pacific Northwest Solar Energy Assoc. steering committee met Jan. 3, 1978, at Rainhouse. Proposed by-laws, names of candidates for election to the board of directors and minutes of the meeting are now being distributed to all International Solar Energy Society-American Section members in Washington, Oregon and Idaho. The next official meeting will be that of a duly elected board on a date to be decided by that board. Results of the election will be mailed to members and published in *RAIN*.

\$10 RAIN SOLAR WATER HEATER REWARD

We've been belly-aching because so many people seem ready to use solar water heaters and even to build their own—but can't find sensible, well thought-out plans for hooking a collector up to their home hot water system. Do you know a good way to do a hook-up? We'll give a \$10 reward for the best design we receive before March 10, 1978. We'll pass the best designs on in *RAIN* for everybody to use.

We went through a stack of solar water heater designs last month and were amazed—incredible effort lavished on micro-refinements on collector design but almost no concern about how to make the collector usable. If a hook-up was shown at all, it often just added another "solar" storage tank to the existing water heater, which means you have two tanks to lose heat. Or just hooked up to an existing water heater—which means as long as the tank is up to temperature you don't get any solar heat. Almost none show any way of dealing with freezing conditions—really, few people are fanatic enough to run out and drain their water system whenever it looks like a freeze!

Rumors come in about some systems that sound better than our proposal to use a solar heated tank with a demand water heater on the outlet to boost the water to use temperature. One uses an existing electric heated tank but disconnects the lower element. The top element supposedly keeps a small amount of water at use temperature while the rest stays cool enough to pick up heat from the solar panel. Does it work? What about tanks with heat transfer coils or jackets for anti-freeze? Are any reasonably priced yet? Let's make *decentralized* solar happen! While we're at it, anybody got interesting results of any solar collector races? —TB

RAIN's office is at 2270 N.W. Irving, Portland, OR 97210. Ph: (503) 227-5110.

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Typesetting: Irish Setter Printing: Times Litho

WIND

"Rain" Story Helps Sell Moses Lake Wind-Turbines to California.

We just received word from Wilson Clark, Gov. Jerry Brown's energy advisor, that due partly to the article "Small Groups, Big Windmills," (Jan. '78 RAIN), the state of California is considering buying \$10 to \$15 million worth of large windgenerators to power water pumps for the State Water Project, or about twenty 600 and 2700 kilowatt Schachle & Sons wind-turbines. Southern California Edison, an electric utility, is buying one 2700 kw Schachle mill for testing at San Geronio Pass, where Edison is thinking of installing 100 megawatts of wind power capacity. Watch your local newspaper for an Associated Press story mentioning RAIN, or see the *Sacramento Bee*, Friday, Jan. 13, 1978, p. B3.

On to Nebraska, Iowa and Montana! (See *Raindrops*). Wouldn't it be delicious to see a couple thousand megawatts of windpower installed before DOE and Boeing even finish their design? To place your order or to get an illustrated brochure and technical data sheets, write Charles Schachle & Sons, 1032 Grant St., Moses Lake, WA 98837, or call 509/765-9696. —LJ

Solar Greenhouses, Windgenerators and Solar Greenhomes, contact:

Jack Park
Helion, Inc.
Box 445
Brownsville, CA 95919

Jack and Helen have moved, so change your address for Helion, folks. His excellent book, *Simplified Wind Power Systems for Experimenters*, and his 12/16 windgenerator plans are selling briskly. The Kedco Co. (9016 Aviation Blvd., Inglewood, CA 90301), which builds a wind-turbine of Jack's design, has switched to gear-box transmission from the timing belts used in earlier models, and the company is working on an 8kw unit. "Assemble-it-yourself" kits for gear-box drive generators based on the Helion 12/16 are available from: Topanga Power Co., Box 712H, Topanga, CA 90290. Send a SASE for details and prices. —LJ

GOOD THINGS

The Goodfellow Catalog of Wonderful Things, Christopher Weils, 1977, \$7.95 from:

Berkley Windover Books
200 Madison Ave.
New York, NY 10016

Beautiful photographs of wonderful things and the people who make them: jewelry, clothes, toys, pots, pipes, musical instruments. A good catalog for present buying or selling your wares if you don't have a Saturday Market in your town. It's designed for direct orders—you don't go back through Christopher. There's a *Goodfellow Review of Crafts* too: \$8/year from: 2839 Forest Avenue, Berkeley, CA 94705. —LdeM

Intercom, quarterly, \$6/yr., \$1.75/single issue, from:

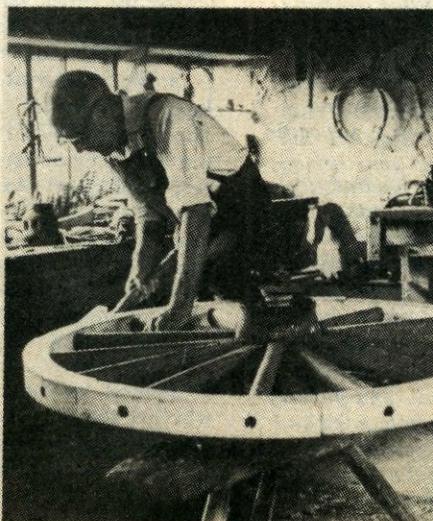
The Center for Global Perspectives
218 E. 18th St.
New York, NY 10003

Mostly for teachers, tries to bring global perspectives to issues and is full of really good and useful stuff... see "Language Arts: The Human Experience Across Culture," in *Intercom*, No. 88; Dec. '77. (Courtesy Nancy Bell Coe)

Country Crafts in Pictures, J. E. Manners, 1976, \$9.95; *Woodland Crafts in Britain*, H. L. Edlin, 1949, \$12.95 from:

David and Charles
North Pomfret, VT 05053

One reason we seem hesitant to give up our demands for resources that others need more is that we've lost sight of the forgotten resources that surround us. We don't value rose hips if we don't know they're a fine source of Vitamin C and release us from our "need" for orange juice. These books are about local resources. *Country Crafts*... is filled with local materials being turned into useful products—ideas that with a twist can come up with new jobs and income sources as well as self-reliance. *Woodland Crafts*... gives a sense of the special qualities of different woods and their unique uses—it's amazing what we waste and trample underfoot! —TB

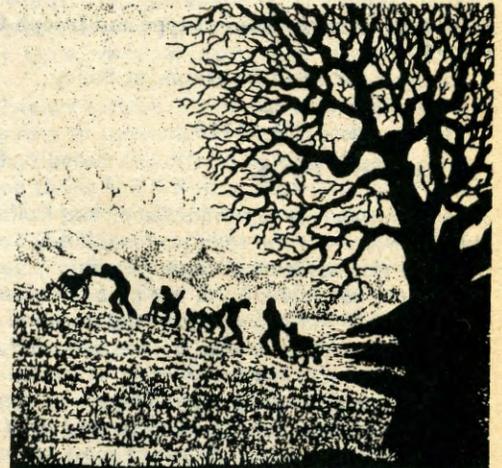


from *Country Crafts in Pictures*

The Acorn People, Ron Jones, 1977, \$1.25 from:

Bantam Books, Inc.
666 Fifth Avenue
New York, NY 10019

Ron's story reminds us of both the toughness and the fragility of life, two qualities never more evident than in the young. His story is very clear and simply written but very poignant. These kinds of closely shared and intense experiences will reveal to us that part of us that eternally yearns for summer. Priorities will reshuffle a bit after reading this, for he makes us aware of the necessity to take time to care about those small interactions that most of life is made of. Ron also reminds us that we do share a common denominator of "all being a little nutty" as well as sharing an unexpected strength. —JM



TOM PARKER
from *The Acorn People*

MANAS, 8 pp./issue, 44 issues/yr., \$10/yr., from:

Manas Publishing Co.
P.O. Box 32112
Los Angeles, CA 90032

Richard Merrill turned me on to this fascinating, intellectual-ideas journal a few years ago and it's been my personal favorite ever since. It sets me thinking down new and unrutted pathways. Here's what *Manas* says it is (it does an excellent job of sticking to its credo): "*Manas* is a journal of independent inquiry, concerned with study of the principles which move world society on its present course, and with search for contrasting principles—that may be capable of supporting intelligent idealism under the conditions of life in the twentieth century. *Manas* is concerned, therefore, with philosophy and with practical psychology, in as direct and simple a manner as its editors and contributors can write. The word "manas" comes from a common root suggesting "man" or "the thinker." Editorial articles are unsigned, since *Manas* wishes to present ideas and viewpoints, not personalities!" —LJ

“INTRODUCTION OF ANY PROFITABLE TECHNOLOGY INTO A SOCIETY RIDDLED WITH INEQUALITIES OF POWER DISASTROUSLY WORSENS THE CONDITION OF THE LESS POWERFUL MAJORITY.”

— *Food First*

Food First, Frances Moore Lappé and Joseph Collins, 1977, \$10.95 from:

Institute for Food Development Policy
2588 Mission Street
San Francisco, CA 94110

READ THIS BOOK!

Back in October we reprinted Lappé and Collins' Beyond the Myth of Scarcity from their new magazine, Food Monitor. It was clear they were on to something important. Their book, Food First, had just arrived, but we hadn't time to read it, so ran the article and put off reviewing the book until we had time to digest it. We've read it now, and it's dynamite!

They show that neither shortage of land nor of food is the cause of current world hunger. There is no shortage of either. Every country has the capability to feed itself. The real problem lies in who controls the use of those resources. It's the governments forcing the growing of cash crops instead of food to pay taxes to support an urban elite, the expropriation of agricultural land for corporate or elite-controlled plantations producing luxury food or non-food crops for export, and corporate control of the food processing system. It's the control of essential resources by those who cannot view them as sources of real food for real needs but only in monetary terms—as sources of wealth that can be expropriated and used to further their own economic gain.

Food First goes on to detail the effects of the Green Revolution on subsidizing rich farmers and impoverishing the rest, how foreign trade exploits both the farmer and consumer, the U.S. government/agribusiness manipulation of food supplies and prices, the exploitive effects of corporate activities in the food system and much more! More importantly, it lays out both the principles necessary for food self-reliance and specific actions that can and need to be taken.

The real impact of the book, though, goes far beyond its major breakthrough in understanding the real root causes of world hunger and how to deal with them. The machinations they've uncovered in the food system are the same ones at work in the rest of our economic system and the principles underlying our food system are the same underlying the rest of our economy. The exploitation behind world hunger is the same as that behind rich country/poor country relationships, urban exploitation of small towns and rural areas, and poverty in our cities and villages. Its insights need to be expanded and applied to the whole realm of our "economic" system.

At root, Food First shows what can be gained by examining problems in their social context rather than as merely technical questions. —TB

Most people believe there is just not enough food to go around. Yet, despite the tremendous wastage of land—which we will document—and the “food crisis” of the 1970s, the world is producing each day two pounds of grain, or more than 3000 calories, for every man, woman and child on earth. 3000 calories is about what the average American consumes. And this estimate is minimal. It does not include the many other staples such as beans, potatoes, cassava, range-fed meat, much less fresh fruits and vegetables. Thus, on a global scale the idea that there is not enough food to go around just does not hold up.

Moreover, we have found “acre-to-person” comparisons to be poor measures of food scarcity. To many, the *size* of a plot of land is obviously the most important determinant of how many people it can feed. We have had to learn, however, that much more important than size are four other factors: **First**, the *level of human investments* made to improve productivity. As demographer Dr. Helen Ware notes, “soil fertility is not a gift of nature, determined once and for all, but dependent upon man's usage of the land.” Most people associate the intensive use of the land with the loss of soil fertility, but, as Dr. Ware underscores, “fertility may indeed be the result of intensive methods of land utilization . . .” The croplands of Japan were once inferior to those of northern India; today Japan's foodgrain yield per acre is five times that of India. The original soils of Western Europe, with the exception of the Po Valley and parts of France, were, in general, once of very poor quality yet today they are highly fertile. Centuries ago the soils of Finland were less productive than most of the nearby parts of Russia; today the Finnish croplands are far superior. Thus using an acre as a fixed unit by which to measure the degree of overpopulation is not helpful. Depending on the human investments made, an acre might be capable of feeding five people or one—or none at all.

Second, how many people an acre can feed depends on whether the land is used to *feed people directly or to feed livestock*. In the Andean region of South America and in the Caribbean nearly four times as much land is used for extensive grazing of cattle as is devoted to crops. Cattle ranches often occupy the relatively flat land of the river valleys and coastal

plains while food crops are relegated to poorer soils on erosion-prone slopes. Moreover, in a world where many people are too poor to buy all the plant food being produced, livestock has been put into service to rid the economy of "surplus" grain that might drive down prices. Livestock consumes over one third of all the world's grain annually. The result is that the four billion human beings on earth, a figure many would use to measure the burden on our cropland, aren't four billion equal units at all. One person can represent a burden on agricultural resources many times greater than another. If a person consumes a largely plant-food diet in which the animal foods eaten are produced on waste materials and nonarable land, his or her "weight" on the cultivated farmland is relatively light. On the other hand, a person is a much greater user of cultivated farmland if he or she eats a diet of animal foods produced by shrinking annually 1800 pounds of grain into 250 pounds of meat, as the average American does. Again, a single acre can sustain a wide range in numbers of people. It depends in part on whether the land is cropped for food for human consumption or for animal feed.

Third, how many people a given measure of land can feed depends on whether it grows *luxury crops for export or food for the local people*. What Americans think of as "food-deficit areas" caused by the pressure of overpopulation are often "food-deficit areas" because much of the food produced goes to small urban elites or is exported. Worst of all, the exports are frequently made in the name of "development."

Here are some food paradoxes to ponder:

- Africa is a net exporter of barley, beans, peanuts, fresh vegetables and cattle (not to mention luxury crop exports such as coffee and cocoa), yet it has a higher incidence of protein-calorie malnutrition among young children than any other continent.
- In Mali, peanut exports to France increased notably during the years of drought while production of food for domestic consumption declined by 1974 to one quarter of what it had been in 1967.
- Mexico now supplies the United States with over one half of its supply of several winter and early spring vegetables while infant deaths associated with poor nutrition are common.
- Half of Central America's agricultural land produces food for export while in several of its countries the poorest 50 percent of the population eat only half the necessary protein. (The richest 5 percent, on the other hand, consume two to three times more than is needed.)

Fourth, agricultural land will, of course, *feed no one at all unless it is cultivated*. This fact seems too obvious to state, and yet many forget that in Africa and Latin America much good land is left unplanted by large landowners. A study of Colombia in 1960 showed that while farmers owning up to about thirteen acres farmed two thirds of their land, the largest farmers, controlling 70 percent of the agricultural surface, actually cultivated only 6 percent of their land. Although Colombia is an extreme example, this pattern is found throughout Latin America. Only 14 percent of Ecuador's tillable land is cultivated.

In addition, corporations often keep large tracts out of production or use them for open-pit mining and operations, such as tin dredging in Malaya, that destroy the topsoil, making land unfit for farming unless expensive reclamation is undertaken. Bauxite, copper and oil companies decrease the potential food acreage by holding large areas of land thought to have reserves of those natural resources.

This widespread wastage of agricultural land, especially by largeholders, lends credence to the estimate, confirmed by several studies, that only about 44 percent of the world's potentially arable land is actually cultivated.

The relationship of hunger to land turns out to be less a question of quantity than of *use*. We discover that the *amount* of land has less to do with hunger than who controls it.

□

... Despite many clear indications that the Soviets were in the market to buy in a big way and the indisputable evidence that bad weather nearly everywhere in the world meant there would be an exceptional demand for American grain, the USDA, contrary to law, did not inform the farmers. In May, the USDA publication *Wheat Situation* warned farmers there would be a big surplus even after all foreseeable sales. Thus, only a few American government officials and grain company executives were in the know.

By early June 1972, Continental Grain, Cargill, and the other four members of the grain export club rushed out to the early-harvest Southwest to buy up wheat. The farmers knew that harvests were going to be big and since they did not know about the strong foreign market prospects, they were happy to unload their wheat. They got about \$1.25 a bushel. A few weeks later the same wheat would have brought \$2.25 to the farmer. (In early 1973, wheat would be hard to get at \$5 a bushel.)

By July 5, Clarence Palmby, Continental Grain's vice-president, helped the firm to conclude the biggest grain sale in history—three days before the official announcement of the \$750 million loan to the U.S.S.R. that made the deal possible and that had been negotiated by Palmby while still a USDA employee. Still at USDA in May Palmby had even attended meetings between Continental and the Russians and surely knew a big sale was in the offing. But Palmby and his bosses at USDA had still neglected to inform the farmers, despite their legal mandate to do so.

It was not until mid-July that the USDA informed the farmers. By then in the Southwest and the early harvest areas of the Midwest, one quarter of all the wheat had already been sold. In Oklahoma alone, the withholding of information by the Department of Agriculture cost wheat farmers about \$47 million.

Over a mere seven weeks taxpayers handed the six grain-exporting companies \$300 million in subsidies.

By contrast, the subsidies to farmers moved in the opposite direction. In 1972 subsidies were still paid to farmers to make up the difference between "parity," a price level considered fair in relation to the cost of machinery and supplies a farmer must purchase and the average market price over a five-month period. The catch, in 1972, was that the government figured the period to begin in July, when most farmers in the Southwest and some in the Midwest had already sold out. As news of the big grain deal spread, wheat prices rose, narrowing the difference between average market prices and parity, thus cutting into the subsidies for the farmer. The farmers' lost subsidies have been estimated at \$55 million.

The General Accounting Office found the big traders had profits on those hundred of millions of bushels ranging from 2 cents to 53 cents a bushel, whereas normally a profit of 1.6 cents per bushel is considered good.



□

... Already over 22 percent of the total American food production is under direct corporate control, four fifths of that by contract. Of the vegetables processed in the United States, 78 percent are produced by farmers under contract and 10 percent by the processors themselves. This means that corporations control 88 percent of the American vegetable crop. There is therefore no competitive market to which the individual farmer can turn. He has little choice but to sign up with a corporation. . . .

... The contracts they sign, after all, are written by the corporations for the corporations. Jim Hightower reports the asparagus growers find that their contracts with Del Monte "allow the corporation to decide what part of the crop is 'acceptable.'" In 1972, 8 percent of the asparagus crop was rejected in this way. "With no open market to sell on," Hightower observes, "farmers literally had to eat that loss." He goes on to reveal how the farmers' loss is Del Monte's gain:

In many cases, however, Del Monte will buy the rejected asparagus from the farmer—at cut-rate prices. In 1972, the price for "acceptable" canning asparagus was 23¢ a pound. The price for asparagus the corporation found unacceptable was .0005¢ a pound. Del Monte has sole power to decide whether a batch of asparagus is worth 23¢ or .0005¢, and the contract requires the farmer to offer any unacceptable asparagus to Del Monte. If the corporation does not want to buy it, then the farmer can take his rejects elsewhere. But there is nowhere else.

Why would Del Monte want to write such a provision into its contract? Because there are windfall profits in those asparagus culls. The farmer may have to give the stuff away to Del Monte, but Del Monte certainly does not give it away to you. Del Monte packages and sells these rejects as asparagus soup, asparagus cuts and asparagus tips—all drawing a pretty penny at the supermarket.

□

Food self-reliance depends on mass initiative, not on government directives.

Self-reliance means not only mass participation but mass initiative, the initiative of people freed psychologically from dependence on authorities, whether they be landlords or government officials. Mass initiative is the opposite of individual self-seeking. It rests in awakening the confidence of the people that only through cooperative work in which all partake and benefit equally can genuine development occur. People have proved themselves willing to sacrifice and work hard for future reward, when they can see that all are sacrificing equally. Thus equality is a necessary prerequisite for mass initiative. In countries with great inequalities in wealth and income, appeals for national sacrifice are correctly perceived by the poor majority as a way for the controlling elite to extract yet more wealth through the extra exertion of the masses.

Since self-reliance presupposes equality, government programs that help only a segment of the poor should not be confused with self-reliant policies. They often only increase inequality. Between 1957 and 1970, about one quarter of all smallholders in Malaysia were settled through a government land development scheme. Their income rose several times higher than the average peasant household. Yet all other smallholders saw their incomes halved. Self-reliance is not the "project approach" to hunger.

Mass initiative, moreover, is the opposite of government managed "development." If food self-reliance is managed from above, people feel they are working "for the government," not for themselves. People become "clients," not the motive force.

A government policy of simply parceling out land to small farmers is not, for example, self-reliant development. Land reform must involve the people themselves who deliberate to decide how the resources are to be used and how disputes are to be resolved. Land reform must not only redistribute land but must be the first step in the creation of a mass democracy. The *process* of land reform is as important as the reform itself.

□

... Thus the real lessons for us are these:

First: We cannot solve the problem of world hunger for other people. They must do that for themselves. We can, however, work to remove the obstacles that make it increasingly difficult for people everywhere to take control of food production and feed themselves.

Second: We should focus on removing those obstacles that are being reinforced today by forces originating in our country, often in our name and with our tax money.

Third: We must support people everywhere already resisting forced food dependency and now building self-reliant societies in which the majority of people directly control food-producing resources. Direct financial assistance is important as is communicating their very existence to Americans still believing that "people are too oppressed ever to change."

Fourth: Working for self-reliance, both on a personal and national level, benefits everyone. Making America less dependent on importing its food and less dependent on pushing our food on others will be a step toward making America "safe for the world." Local self-reliance will make it more difficult for elites, both in the industrial countries and the underdeveloped countries, to manipulate prices, wages and people for their own profit. Self-reliance for America means wholesome food available to *all*, supplied by a healthy domestic agriculture of widely dispersed control. □

—Tom Bender

Cancer: Metaphor for Modern Times, Peter Barry Chowka, a three-part special, March, April 1977, Jan. 1978, in East-West Journal, \$1 each from:

**P.O. Box 305
Dover, NJ 07801**

While we're on the subject of food and well-being, we should mention this excellent series of articles by Peter Barry Chowka. We're spending more than \$800 million per year of our tax money on cancer research. That research has been an almost total failure, except to provide lucrative income to the medical/pharmaceutical industry. Although cancer incidence has increased parallel to our introduction of synthetic food chemicals into our diet and pollutants into our surroundings, cancer *prevention* remains a taboo subject and funds remain concentrated on ineffective treatments. A few minutes of simple logic can exclude almost everything except diet as the cause of a majority of cancers, and research done in the 1940s had striking results through limiting intake of fats, calories, salt, excess protein and sugar. It also established with mice that a diet restricted to 2/3 of what would be eaten with no restraints caused a significant reduction in incidence of tumors. Is cancer a disease of self-indulgence? —TB

AGRICULTURE

Winter Gardening in the Maritime Northwest, Binda Colebrook, 1977, \$4.75 (Washington residents add 25¢ tax) from:

Tilth
Rt. 2, Box 190-A
Arlington, WA 98223

Our long-quiet friends at Tilth have just put out this excellent book with the help of former Rainmakers Steve Johnson and Rhoda Epstein. It is a beautifully done guide that should help you keep your cabbages, kelp, spinach and root crops coming during the rainier part of the year. It came just in time for me to begin to think about planning my new garden. —LdeM

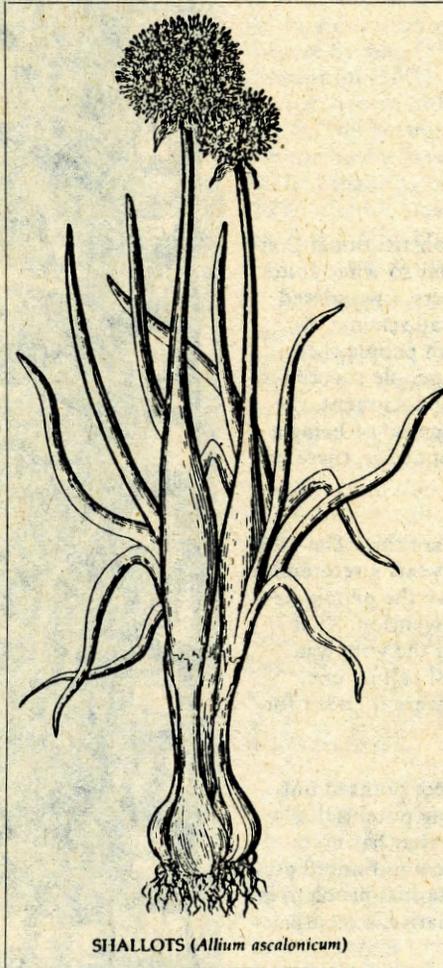
Windowsill Ecology, William H. Jordan, Jr., 1978, 240 pp., 20 illustrations, 40 photographs, index, \$8.95 from:

Rodale Press
Emmaus, PA 18049

Windowsill Ecology is a biological control manual for the greenhouse manager and house-plant enthusiast. Dr. Jordan, an entomologist at the University of California's Division of Biological Control, has reviewed the state of the art of greenhouse pest management with natural enemies as practiced in Europe on commercial vegetable and cut flower crops, with the specific intended purpose of advancing such indoor pest management practices in the U.S. He has produced a valuable explanation of the biology of the more common greenhouse pests as it applies to their economic control through manipulation of natural enemies. His instructions and recommendations are sufficiently explicit and detailed to enable a careful greenhouse grower to immediately embark on a pest management program with confidence and probable success. His explanations of the ecological dynamics of the plant-pest-natural enemy-environment relationships are so engaging, however, that the careful reader may also become an effective experimenter—developing new, modified control strategies that will transcend the cook book approach.

Obviously written with the untrained amateur grower in mind, the book introduces the complexities of insect ecology with grace and a measure of chatty humor. It is intended at least as much for the casual house-plant tender as it is for the commercial greenhouse manager or practicing entomologist. Although I would have personally preferred a more technical approach, I found that the book's popularizing

style did not detract from its value to the serious student of pest management. By synthesizing available knowledge on the ecology of greenhouse pests as well as tried and proven management strategies, *Windowsill Ecology* makes an important contribution to our developing ecologically sensitive agriculture. I recommend it. —Woody Deryckx



SHALLOTS (*Allium ascalonicum*)

Profitable Herb Growing at Home, Betty E. M. Jacobs, 1976, \$5.95 from:
Garden Way Publishing
Charlotte, VT 05445

This is a thorough, well-organized book for anyone interested in growing herbs as a cottage-scale industry. *Profitable Herb Growing* provides a clear, complete explanation of how-to for individuals with no previous experience growing herbs. Ms. Jacobs covers the different kinds of herbs, what they can be used for and their cultural requirements, care and propagation, harvesting and storing. For those interested in herb farming as a livelihood, included are chapters on markets and marketing, herb products with commercial possibilities as well as separate chapters on growing parsley and chives. The mythology and poetry of these plants is missing but the information is definitely there. —JM

When Tillage Begins, T. J. Gilles, 1977, \$3.95 from:

UMP Publishing
Rt. 1, Box 300
Laurel, MT 59044

Here's another home-grown book, but from a different climate. It's subtitled "History of Agriculture in Montana." Lots of details and interesting stories here for Montanans who want to learn more about their roots. —LdeM

HEALTH

The New Birth Control Program, Christine Garfink and Hank Pizer, 1977, \$4.95 from:

Bolder Books/Hampstead Hall Press
10 East 40th St.
New York, NY 10016

Natural birth control is just like any other appropriate technology: we have to experiment and learn, trying out many different ways to see what method suits our needs. This book is the best I've yet seen on the subject. It outlines a method that is a combination of the basal body temperature and mucous methods. The details are not all that different from discussions I've seen elsewhere, but the hows and whys are explained much more clearly. This looks like a good one. —LdeM

Where There Is No Doctor, David Werner, 1977, \$5.50 in U.S. (\$3.50 in poorer countries) from:

Hesperian Foundation
P.O. Box 1692
Palo Alto, CA 94302

This is the promised English language translation of the excellent village health care handbook, *Donde No Hay Doctor* (Spanish—\$10 or \$5 from the address above). The drawings by the author are a trip, but the information looks to be pretty complete. No natural remedies are included, but it would be a good companion book to one that does include them. Write to them for information about bulk prices in the U.S. and elsewhere for both books. —LdeM

Baltimore-Washington Healing Resources, 1977, \$5 from:

Healing Resources, Inc.
P.O. Box 1100
Silver Spring, MD 20910

Here's an excellent resource if you live in the D.C. area or a good model to copy if you don't. It is a listing of people practicing different kinds of esoteric and health-oriented medicine, cross referenced by the type of healing they offer. They intend to update and expand the book every couple of years so keep an eye on them. —LdeM

ISLAND POWER

When I first heard that Hawaii is having a Constitutional Convention next summer, my reaction was similar to what yours probably is right now. Shrugging my shoulders, I wondered what difference that could make in the overall scheme of things. But the more I visited and talked with people there, the more I realized that whether or not the people succeed in writing a radically or even a moderately new document, the *process* they have to go through has the potential of being a very exciting one. If anything at all comes out of it, there will be some things here we can all learn from.

The circumstances in Hawaii this winter are this: The 1968 State Constitution mandated that every 10 years a referendum be automatically placed on the ballot to have the people decide if they want another constitutional convention. That referendum came up in November 1976 and the vote was overwhelmingly in favor (over 75 percent) of calling one. The dates for ConCon, as it is being called, were then set for July 1978.

As Ted Becker, one of the people involved, pointed out, a constitutional convention has an interesting potential as a change agent because it is a "political arena that has no incumbents, no entrenched bureaucracy, almost unlimited power to solve any major political process or substantial problem in the society, and superior power to the legislative, executive and judicial branches—even over their form."

Ordinarily one would assume that the same old powers that be would get themselves elected and after much hemming and hawing and slaps on the back would hand to the public an ever-so-slightly modified version of the present constitutions. They might have switched from a unicameral to a bicameral legislature or limited the terms of the governor, but the difference would only be in form. Very little of substance would have changed and the chance would have been missed to re-examine, in Hawaii's case, their crippling dependence on a military and tourist economy or the import/export patterns of the tiny island state.

That's how you would expect it to be. But in this case, the people writing the rules last time put in one major provision which could throw the whole thing open—could, that is, if the circumstances are right. The representation to this convention is to be elected by half of a state house district or one representative for every 6-8,000 people. There are not even any representatives to be elected at large, which means that there will be so many little campaigns scattered about the islands that it will be difficult for the powers that be to do their usual media blitz for any particular slate or party line. This, then, provides a perfect arena for a real grassroots campaign.



Interestingly enough, that is exactly what is happening. It doesn't take much money to campaign at that level. All kinds of people, young and old, some with political experience already, are getting campaigns together. High school and college students, the native Hawaiians, the Japanese, the Chinese, the business people, longhairs and so forth. In each tiny district they are declaring candidacies right and left, preparing to ring door bells, attend PTA meetings and shake hands. Win or lose, the experience gained and the politization process will have been tremendous.

Now none of this would make any real difference if the political climate weren't ripe for change. But Hawaii is ready. An incredible growth boom in the last two decades has made many people aware that the idyllic island paradise they love is turning even the smaller islands into a mass of high rise condominiums and Sheratons and Waikiki Beaches. Prices are outrageous—often 50 percent higher than on the mainland. While the island water table is becoming dangerously low, the fertilizer- and water-intensive sugar cane and pineapple growers continue to get away with huge water sub-

from *The Valley Isle*

sidies. What's more, the sugar cane they grow is shipped to California to be processed and then sent back to the islands in the same brown boxes we buy in Oregon. Hawaii is totally dependent on imported oil and natural gas for its energy input, having so far ignored the incredible potential for solar, wind and geothermal energy. There is also an increasing awareness of the effects of the exploitation of the native people. Basically, they are in the same situation we are all in, but the naturally defined limits of their island economy make the dangers and trade-offs that much more pronounced.

There are a few more intriguing pieces to this politically interesting puzzle. One is a strong and increasingly articulate sector of the population that is interested in changes such as increased reliance on alternative energy sources and locally produced food. This group has some extra potential because of the income resulting from the excellent marijuana growing climate. Another factor is a very powerful head of the student body at the University of Hawaii, an ex-convict who is helping to organize student campaigns in almost every district.

There is also a group called the Constitutional Network, Inc., the brainchild of a transplanted New York Constitutional lawyer turned political science professor and beachcomber. Ted Becker and his group have organized a well-done statewide random public opinion poll that gathered information about what the public thought were the most important issues to be discussed at ConCon: The top ten were Crime (63%) Public Education (61%), Conservation of Energy (60%), the Welfare System (59%), Unemployment (58%), Political Corruption (56%), Environmental Pollution (52%), Criminal Justice System (50%), Housing (49%), and Population Growth (45%). The bottom five included many that the politicians and the media have been holding up as important issues: Public Financing of Elections (19%), Election of Prosecutors (17%), the Lt. Governor's Office (17%), Distribution of Legal Services (16%), Primary Voting System (17%) and Worker Participation in Corporate Decisions (14%).

Ted Becker also pulled together a seminar series last fall which brought publicity to the ideas of no-growth futures and appropriate technology alternatives. He has a Simulated ConCon for University credit planned this spring which will give anyone who wants a chance to learn how to participate in such a convention. He's planning to experiment with consensus decision-making, computerized information sharing (see box) and such crazy (?) ideas as a legislature selected by lot like a jury. The spring sessions will be held on evenings and weekends to make it possible for community people to attend.

Whether or not it will be possible to pull off a people's ConCon is still anyone's guess. The power and dollars of the traditional politicians may still be strong enough to win a substantial majority of the representative even in campaigns at such a grassroots level. But the possibility of a real upset is clearly there.

It's one of those situations that fall into our hands. I'm beginning to be convinced that this latter part of the 1970s is all about taking advantage of such circumstances as they come into focus. It entails having a few of the right people in the right places at the right time and a willingness on the part of a large number of people to have a go at it. There's little to be lost and much to be gained. Even if it is only a learning experience, we'll all know that much more for the *next* time and place.

—Lane deMoll

—more→

Valley Isle

P.O. Box 1086

Wailuku, Maui, HI 96793

Weekly, \$4/year or \$20 First Class. If you're looking for news of alternative goings on in Hawaii this paper is a good place to start. They cover groups like the Hawaii Self-Sufficiency Association (2525 South King Street, Honolulu, HI 96826), and their work to show different crops and food products that could help make the islands less dependent on the Mainland. They also cover local bands, particularly those who are re-discovering and enjoying their native heritage. And since at least one of their reporters is running for the ConCon, I'm sure there will be more talk of its progress here soon. —LdeM

CONSTITUTIONAL NETWORK

The Constitutional Network, Inc. (CN) is a private, non-profit corporation devoted to establishing a totally new kind of political communications pattern, one that would transform the character of ConCon. They have proposed an integrated grid of appropriate communications and information technology—a *three-way* system that would work something like this:

All Concon proceedings will be broadcast live and delayed (by tape) on cable-TV (CATV) channel leased by (or donated to) the Constitutional Network. This can be viewed at those homes with CATV or at one of CN's 21 centers around the state.

The second CATV channel leased or donated to CN will broadcast easily read and understood outlines of issues being discussed—as well as community supplied bulletins, revisions, suggestions, alternatives. So one channel is dedicated to a horizontal flow of data and opinion on issues and events between the people themselves.

At each of the 21 centers, videotape cameras and production equipment will be available for personal, group and community usage. People in every area will be encouraged, trained and assisted in making issue-oriented statements on videotape. These statements will be played on the second CATV channel—another aspect of the people-to-people exchange.

Each center will also have two computer terminals open for public use. These will be of the typewriter keyboard/TV screen variety, and there will be staff available to help people learn to use them, or to serve those who don't want to learn but who want to help. The computers will be used mainly to establish "computer conferences" between the centers on various issues. But best of all, citizens will be able to plug into the conference by staying at home and calling into the center in their area.

What is more, since the computer network will be hooked into national (and international) sources, CN will be able to provide research and informational assistance to all interested citizens on any and all issues. The citizen can either go to the center near him or pick up the phone and make a request.

Finally, during each issue discussion at ConCon, CN will conduct statewide, random public opinion surveys on a nightly basis. This will utilize an automatic survey device and the results will be disseminated to the ConCon delegates and to the public via the regular news media and Channel 2 of the CATV hook-up. In addition, the Delphi method of polling will be employed: three rounds on each issue—thus helping develop any latent public consensus on any and all issues.

There's no guarantee, of course, that they'll succeed in installing the Constitutional Network at the July 1978 ConCon. However, by developing the idea, establishing the corporation, distributing information about it, and addressing various civic and community organizations, the Constitutional Network is dramatically raising consciousness about the dangers in our present political system and is presenting a real alternative.

Excerpted from the draft of a longer article by Ted Becker. For more information, contact: Constitutional Network, Inc., Waialae Kabala, P.O. Box 10135, Honolulu, HI 96821.

BASIC TRANSPORT VEHICLES

The Transportation Department of the World Bank has been researching the availability of basic transport vehicles which are sturdy, cheap and serviceable enough for use in rural areas. The following are some of their early findings—contact Richard Browning, Transportation Department, World Bank, 1818 H Street N.W., Washington, DC 20433, if you know of others or to find current status of study. —TB

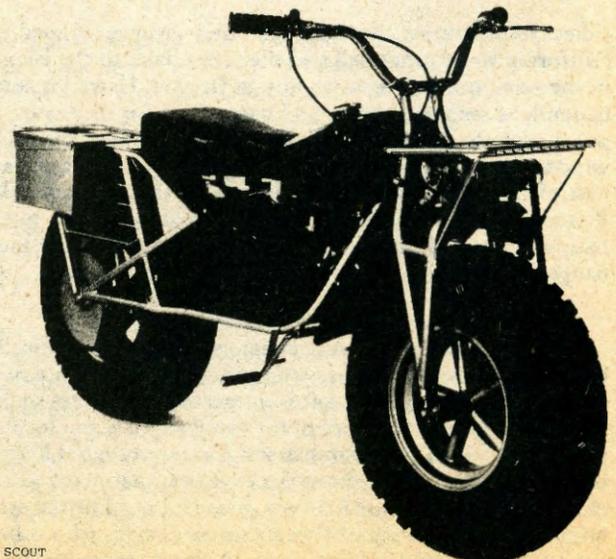
Rokon Moto-Tractor (Scout Model)

Rokon Inc.
160 Emerald Street,
Keene, NH 03431

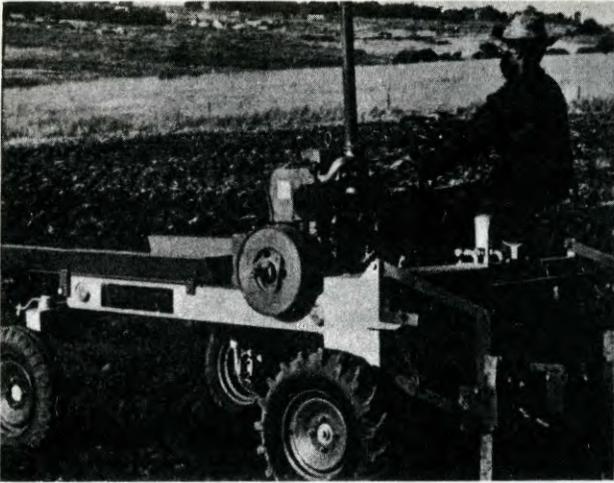
Description: Two-wheel drive; 10 hp engine—two-stroke, single cylinder, gas and oil mixed, fan-cooled; speeds range from .8 km/h to 65 km/h; can deliver up to 14 km per liter of fuel in transport mode and consumes about 1.7 liters per hour while ploughing; transmission—automatic torque converter into 3-speed range selector; front and rear disc brakes. Dimensions: Weight—86 kg, wheel base—1.25 m, length—1.88 m, width—.77 m, height over seat—.74 m, height over handlebars—1.02 m, ground clearance—.36 m, fording depth—.59 m.

Comments on Maintenance, Productivity, "Appropriateness," etc.: Its range of implements includes all purpose trailer (.34 cu m with a recommended payload of 227 kg), 1,500 watt alternator, yolk rake, moldboard plough, double gang pumping; over 10,000 models have provided transportation in difficult terrain and conditions over various areas of the world; grade capability—45 degree slopes; usage of the agricultural implements has just begun in such countries as Indonesia, Columbia, Philippines, Iran, Brazil, New Zealand and Mexico; using the moldboard plough, the rate of work is approximately 12-1/2 hours per hectare; daily maintenance requires lubricating the chains and checking the air filter as well as keeping the tires properly inflated; a major overhaul inspection ought to occur after 1,000 hours; the life expectancy of the tires is 3-5 years.

Cost and Present Status (as of 2/15/77): Rokon Scout—U.S. \$1,495; implements vary from U.S. \$68.50 to U.S. \$625.



ROKON SCOUT

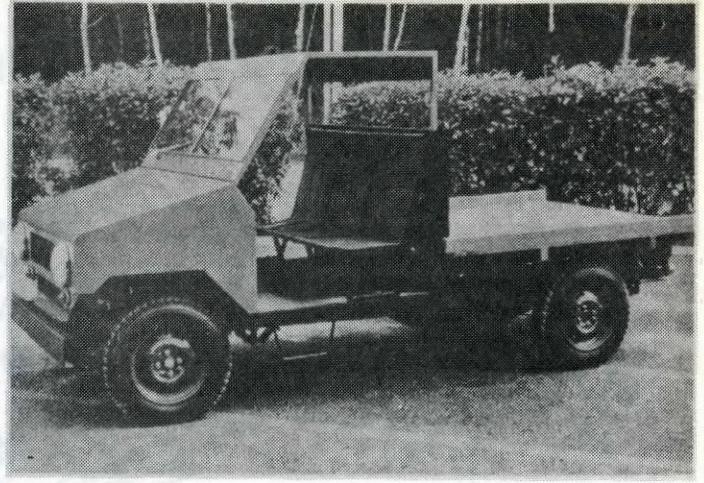


Tinkabi Tractor
National Industrial Development Corporation
P.O. Box 450, Manzini
Swaziland

Description: Air-cooled and hand-started twin cylinder diesel engine of 16 hp, under normal farm use, fuel consumption is less than 1.5 litres an hour; hydrostatic drive transmission which controls speed, direction and braking through a single-hand lever; variable speeds up to a maximum of 8 km/h; load pan situated in front has a payload of 500 kg which can be increased to 2,000 kg with the addition of a trailer. Dimensions: wheel base—2 m, wheel track—1.7 m, ground clearance—.6 m, overall width—1.8 m, overall length—2.5 m, weight unballasted—1,050 kg.

Comments on Maintenance, Productivity, "Appropriateness," etc.: Its range of implements includes a plough, planter, cultivator, ridger, harrow, water pump, irrigation set, circular saw, cotton sprayer, hammermill and electrical generator; between service intervals of 250 hours or 6 months, whichever is earlier, the operator need only fill the fuel tank, keep the tires inflated and tighten all nuts and bolts; under dry soil conditions, using the Tinkabi single furrow 30 cm moldboard plough, the rate of work is up to 2 hectares a day at 20 cm deep; extensive testing has been carried out in Tanzania, Zambia, Swaziland, U.K., South Africa, Lesotho, Botswana, S.W.A., Mozambique, Kenya and U.S.A.; the work requirements of the Swazi farmer were met under test conditions.

Cost and Present Status (as of 5/77): Commercially produced in Swaziland at about U.S. \$2,000.



Basic Transportation Vehicle
B.T.V. Operations Group
Bedford Commercial Vehicles
Vauxhall Motors Ltd.
P.O. Box No. 3
Luton LU2 OSY England

Description: Water-cooled, 4-cylinder petrol engine of 42.5 hp; maximum speed of 97 to 105 km/h and can deliver up to 8-9 km per liter of fuel; 4-speed synchromesh transmission with floor-mounted gear lever; two-wheel drive; rack and pinion steering; dual circuit hydraulic service brakes; payload capacity—551 kg; cab takes a 3-man seat. Dimensions: wheel base—2.3 m, track front—1.20 m, track rear—1.22 m, wheel clearance laden—.1 m, overall length—3.6 m, overall height—1.7 m, overall width—1.6 m; gross vehicle weight—1,321 kg.

Comments on Maintenance, Productivity, "Appropriateness," etc.: It is capable of easy conversion to an owner's specific needs; since it utilizes Vauxhall mechanicals (i.e., engine, transmission, drive line, etc.), in conjunction with locally fabricated sheet metal and local assembly, all mechanical components are proven in quality and reliability to the extent that they have been common to vehicles in the current Bedford range; since 1973 when it was introduced in Malaysia, Portugal, Ecuador and the Philippines, distributorships have expanded to include some twenty countries in Africa, the Far East, Central and South America.

Cost and Present Status (as of 4/25/77): Distributed in over twenty countries in an approximate range of U.S. \$3,000-\$3,600; in some small markets, it is possible to produce less than 200 units a year economically.

BUILDING

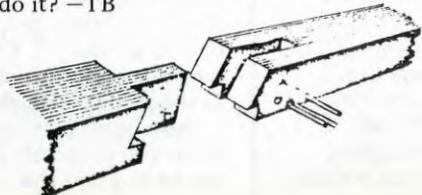
Island Hot Baths

Box 4676, Rolling Bay
Bainbridge Island, WA 98110

These folks have available the only wood-fired Japanese bath heaters we've been able to find in the U.S. Expensive (\$325), but they look good—sturdy copper construction and complete with tub fittings and connecting pipes. Boiler burns coal, wood or charcoal. We're still looking for other types—submersible ones that fit inside the tub, ones that operate on other fuels, etc. Know of any? —TB

Wood Connections, 1975, \$4.50 from:
Robin Hood Publications
Berkeley, CA

Found this in a small store in Berkeley, but can't find an address for the publisher. Joints—page after page of joints—from Europe, Asia and America. A builder's delight. Gives some explanation of some of the joints, but it would still be useful to have more information on relative strengths and special qualities and uses of various joints. Want to do it? —TB



The Timber Framing Book, Stewart Elliott and Eugene Wallas, 1977, \$9.95 from:

Housesmiths Press
P.O. Box 416
York, ME 03909

There's a special good feeling in building when a beam sets down into a mortised post with a solid "thunk" and everything stands there solid and true. That special feeling carries over to most people who use the building—and it never comes from "2x4" construction. This book is about timber framing based on traditional New England houses—done by people who do it well—today—and make a good living by it. Good how-to. —TB

D.O.E. — A.T. Grants Program:



illustrated by Marie McAuliffe

Good, But Underfunded

It feels very good to finally be able to say some thing nice about a U.S. Dept. of Energy program which, although still flawed by underfunding, has an enormous potential for positive benefits to our country and is politically popular as well. The Appropriate Energy Technology (AET) pilot program, implemented through DOE's San Francisco Operations Office and covering four Western states and the Pacific Trust Territories, produced over a thousand proposals requesting a total of over \$21 million for small-scale technologies. The ideas submitted are now undergoing an evaluation process consisting of technical analysis and peer review, and grants ranging from less than \$10,000 up to \$50,000 are scheduled to be awarded in spring 1978.

In addition, to help figure out the next steps, DOE has invited a number of appropriate technologists, energy researchers and consumer advocates to attend a public briefing in Washington, D.C., Jan. 26th, on the "DOE Role in Support of Appropriate Technology, and to form a national steering committee to design and work on regional and state meetings. The invitees include myself, Pliney Fisk (Max's Pot, Austin, Texas), Fran Koster (U. Mass, Amherst, Mass.), Malcolm Lillywhite (Domestic Technology Institute, Lakewood, Colo.), Lola Redford (Consumer Action Now, NYC), Bill Olkowski (Urban Integrated Control, Berkeley, Calif.), Cecil Cook (Bainbridge, Ohio), Beth Hagens (Acorn, Park Forest, Ill.), Paul Rich (Texas Rural Legal Aid—Winter Garden Project, Crystal City, Texas), and David Goldberg (Center for Energy Policy, Boston, Mass). Others who will be attending include Ken Bossong (Citizens Energy Project),

Harriet Barlow and David Morris (Institute for Self-Reliance), and Craig Decker, all of Washington, D.C.

Busy Bees vs. Greedy Bears

The California Office of Appropriate Technology (OAT), which coordinated the AET program in California and received the largest number of proposals, 842, has issued a four-page analysis which is reproduced below. Of particular importance is their observation that "the average proposal request was for slightly more than \$20,000." Certainly one way to prevent university and R&D think-tanks, with their multitude of pipelines to taxpayer grant and contract dollars, from getting AET money at the expense of indigent inventors and capital-strapped small businesses, whose access to such financial support is nil, is to reduce the maximum grant amounts from the present \$50,000 (for demonstration projects) to, say, \$25,000, and the \$10,000 category (for concept development—i.e. "a paper study") to \$5,000. More could be done for less, more ideas inexpensively tried, by letting the busy (and cost-effective) bees at the honey and not the greedy (and high overhead and salaried) bears. Rather than an outright prohibition, it seems more sensible to simply shrink the honey-pot in size so it's not worth their expensive time to go after it. This suggestion will be reinforced by further analysis which compares 1) the source of proposals to 2) the amount requested.

Also important are the OAT notes that, although there are 85 to 100 proposals which should be funded, only 20 of them can be and that the need for \$2 million to fund all the good proposals is thus very easily seen.

Random Grants?

Another more heretical question is whether or not such small grants might not just as effectively and more cheaply be given out at random! One recalls Hazel Henderson's explanation in "The Entropy State" (*Planning Review*, May 1974) of how rising managerial "transaction costs," such as the costs of technical evaluation, peer review and OAT bureaucracy and overhead in the AET program, are not only "unproductive" but can, in this case, actually reduce the number of grant awards made, as "administrative costs" eat into available grant money. For, if one could show that the **percentage** of ultimately "successful" (i.e. beneficial to our society and large minorities of our citizenry) projects produced via random grants is **the same as or greater than** the "success" percent we get after the numerous and expensive review filters, and the costs of running them, then it's time to put the bureaucrats (and paid evaluators like myself) out of work, and use the new funds that formerly were "transaction costs" to increase the number and amount of grants it is possible to make. The question now is, have we the wisdom to make the comparison?

Local Management Necessary

The DOE-AET program will be expanding to other regions of America as 1978 progresses and, hopefully, consistent with greater attention to local and regional differences emphasized by Bob Beattie, DOE's Acting Administrator for Conservation and Solar Applications,

"Appropriate technology is locally oriented. The kind of technology that is appropriate for one region may be entirely unsuitable for another region,"

the programs will be run from federal and state offices as close as possible to the region concerned. This also greatly enhances the potential for public feedback to keep the program on course, consistent with both the a.t. ideal of "local control" and the Congress' directives requiring public participation in government agency program design and implementation. This means, for example, that it is incorrect to manage the Pacific Northwest's AET program from San Francisco when it could be done in the Northwest, through DOE's Seattle office, or through the DOE Special Projects Office in Richland. It's obviously easier for a wet Seattleite, a rain-drenched Portlander or a dry Richlander to be attuned to the Pacific Northwest's local bio-climate differences, perspectives vitally important for many appropriate energy technologies, than for a faraway and sunny San Franciscan to attempt to gain such an awareness. One can only hope that ultimately such programs will be coordinated on a county, or at least a state, level.

Finally, remember that the AET program is only one small step in the transition we all face, and that, just as energy is not life's only concern, so also we must lobby for such programs within other federal, state and county government agencies. HUD should be told it's time to start an "appropriate shelter technology" program emphasizing such areas as owner-building, including that all-American, community-building tradition of "barn-raising," the use of recycled building materials, and home-built compost toilets (in conjunction with EPA). The EPA should begin an "appropriate waste technology" program focussing on land treatment of sewage, compost toilets and source-separation/home collection of recyclable urban and suburban waste. The Dept. of Agriculture should initiate "appropriate agriculture technology" programs in natural pesticides-herbicides-fertilizers, small-scale farming, water-saving irrigation, direct marketing and community woodlots.

Or, maybe we should just forget about all these government programs and simply tell 'em not to hinder us as we do-it-ourselves. I can't really say which way it should go. But the vote here is 10 to 1 in favor of doing it.

-Lee Johnson

NOTES AND OBSERVATIONS ON THE APPROPRIATE ENERGY TECHNOLOGY GRANTS PROGRAM

From California O.A.T.

1. Of the proposals received, approximately 65 percent were from metropolitan areas or larger towns. The remaining 35 percent were from smaller towns or rural areas of the state. Proposals were received in a representative distribution from all parts of the state.
2. Projects oriented toward demonstration or construction or production of energy-conserving equipment or materials comprise approximately 72 percent of the total. Education and media programs and concept evaluation and other software account for the remaining 28 percent.
3. We estimate that DOE will provide California with approximately \$200,000. The average proposal request was for slightly more than \$20,000. Based on internal discussions, it is likely that we will be able to actually fund no more than 20 proposals out of the 842 submitted (2.3 percent).
4. The money available to California from DOE is 1.2 percent of the total dollars requested by California applicants.
5. Our technical consultants estimate that a minimum of 10 percent of the proposals are technically competent, innovative and deserving of immediate financial support. We believe that 85-100 of the proposals will merit funding. As mentioned above, however, current DOE funding allows support of only a very limited number of the worthwhile proposals. This is unfortunate in light of potential foregone opportunities for employment, product development and energy conservation in the state, not to mention the obvious underutilization of our creative resources and public interest.
6. In this first round alone, there is demonstrable evidence that this program could justifiably offer financial support in the range of \$2 million without departing from the recommendations of our panel of expert reviewers.
7. *Distribution of Amount of Funding Requested*
 - a. Less than \$10,000 38 percent
 - b. \$10,000 to \$25,000 33 percent
 - c. Greater than \$25,000 30 percent

SOURCE OF PROPOSALS

	Proposals Received	Percent of Total
Individuals	360	44.5
Partnership	13	1.6
Small Business	257	31.8
Schools (K-12)	6	0.7
College/University	33	4.1
Non-Profit Corporation	83	10.3
Community Organization	14	1.7
Local Government	34	4.2
State Agency	1	0.1
Indian Tribe	2	0.2
Other	6	0.7
TOTAL*	809	100.0

*Total equals proposals remaining after Lawrence Berkeley Lab prescreening.

Note: In many cases, the line between nonprofit corporations and community organizations is hard to define.

Source: OAT (12/9/77)

continued next page

REGIONAL PERSPECTIVE: RESPONSE TO REQUEST FOR PROPOSALS

Population (millions)	Percent of Total Population	Number of Proposals Received	Percent of Total Proposals	Millions of Dollars Requested	Percent of Total Dollars Requested
California	19.97	845	77	16.5	79
Arizona	1.77	118	11	2.1	10
Hawaii	.75	70	6	1.1	5
Nevada	.49	66	6	1.1	5
TOTALS	22.96	1100	100	20.8	100

Source: San Francisco Operations Office, DOE (12/5/77).

DATA SUMMARY

	Total Proposals	Percent of Total	Dollars Requested	Percent of Total	Average Dollars Requested
SOLAR TECHNOLOGY	237	29.18	\$4,019,353	24.6	\$16,959
(a) heating & cooling	(163)	(20.07)	(2,729,401)	(16.7)	(16,744)
(b) passive	(31)	(3.8)	(528,701)	(3.2)	(17,054)
(c) photovoltaic	(7)	(.8)	(100,687)	(.6)	(14,383)
(d) other	(36)	(4.4)	(660,564)	(4.0)	(18,349)
Biomass (methane, ag waste)	35	4.3	729,856	4.4	20,853
Agriculture/Greenhouses	47	5.8	816,261	5.0	17,367
ENERGY CONSERVATION	218	26.8	4,799,778	29.4	22,017
(a) building systems & materials	(74)	(9.1)	(1,531,781)	(9.3)	(20,699)
(b) vehicles & transportation	(68)	(8.3)	(1,760,843)	(10.8)	(25,894)
(c) appliances	(50)	(6.2)	(940,011)	(5.7)	(18,800)
(d) recycling	(26)	(3.2)	(567,143)	(3.5)	(21,813)
Water Conservation or Re-Use	27	3.3	718,555	4.4	26,613
Wind Systems	72	8.9	1,102,160	6.8	15,307
Tidal Energy	7	.8	176,414	1.1	25,202
Energy Education & Media	39	4.8	739,201	4.5	18,953
Aquaculture	6	.7	70,050	.4	11,675
Hydro-Electric	19	2.3	595,505	3.6	31,342
Integral Energy Demonstrations	21	2.6	603,870	3.7	28,755
Mechanical/Electrical Devices	21	2.6	605,604	3.7	28,838
Other Ideas	63	7.8	1,348,941	8.3	21,411
TOTAL	812	100.00	\$16,325,548	100.0	\$20,105

Source: OAT (12/9/77)

FILE AWAY

A lot of people come to RAIN asking about our filing system. "How do you keep track of all that information?" I used to feel slightly embarrassed when I looked about at our shelves of books, our stacks of papers and even our two five-drawer filing cabinets but still couldn't really explain our "system." Sometimes we know where things are and sometimes we don't. My stuff carefully sorted generally-by-subject or "currentness" isn't really any more or less retrievable than Lee's piles scattered randomly over his floor and desk in his cubby office and bedroom. We both lose things. We're both pretty damn good at coming up with obscure pieces of paper when we need them.

I've now learned that most of the keys and clues to finding stuff in the Rainhouse are in our collective heads. One of us usually has a pretty good idea how to locate the things that interest us. There are always odds and ends that fall between the cracks—particularly items that we feel we *ought* to be

interested in. But we've learned to relax about those things—though it is frustrating to finally throw out all the old copies of obscure co-op newsletters only to have someone ask for them the following week. We can't keep all of it—the house really would collapse.

Jack Eyerly, Portland's resident information guru, gave me courage one day when I asked him how *he* kept track of it all. He said he just keeps going through it—refiling it into different categories as interests change, relegating some once-used items to obscure archives. If he doesn't keep sorting new cuts through it all the time he quickly loses track of what he has. Often even just the process of looking for something clicks new things into focus which are useful just a short time later. He said that no indexing system or permanent "right" way is ever possible for him. It just keeps evolving. That made me feel better because I realized that it's exactly how I do it.

APPROPRIATE TECHNOLOGY

Intermediate Technology Los Angeles (ITLA)

c/o Keith Pritsker
327 S. Hoover St., No. 204
Los Angeles, CA 90020

We've always said that all this business is most appropriate to over-developed countries, so we're glad to see a group formed in one of the most over-developed spots of all. Their quarterly newsletter covers ideas, book reviews, events, and letters. It can be had by individuals for \$10, groups for \$15 or \$7.50 for students, senior citizens and other low income people from ITLA, c/o Jack DeSwart, 2310 Glenco, Venice, CA 90291. The above address is for general correspondence. Write there to find out about the group's meetings and projects. —LdeM

Volunteers in Technical Assistance Publications

3706 Rhode Island Avenue
Mt. Rainier, MD 20822

VITA is making a major effort to put the wealth of information assembled in its years of technical assistance into available and readily usable form. *VITA News* is expanded and contains much more information. A series of technical bulletins is now available. A series of manuals co-published with the Peace Corps is underway (so far *Small Farm Grain Storage: Drying, Rodent Control, Storage Techniques; Freshwater Fish Pond Culture and*

Management; and Reforestation in Arid Lands are available), along with many other new and updated VITA publications. Write for their new publications catalog. —TB

Appropriate Technology: Problems and Promises, Part I, Nicolas Jequier, 1976, \$2 in U.S., \$1 to developing countries from:

Volunteers in Asia
Box 4543
Stanford, CA 94305

Volunteers in Asia has just prepared a low-cost edition of Nicolas Jequier's paper that OECD was selling for \$12.50 and that was available for \$7 from ControlData Technotech under the title "An Inquiry into Low Cost Technology Policy Issues." Thanks VIA! It's a good solid overview of a.t. for the Third World and contains good heresy like saying information access centers are usually too expensive (\$150 per inquiry) compared to people just writing letters themselves to find out exactly what they need. —TB

PUBLIC INTEREST

How We Won the War, General Vo Nguyen Giap, \$2 from:
RECON Publications
702 Stanley Street
Ypsilanti, MI 48197

The myths underlying many of our major institutions are simultaneously hitting dead ends—big things they can't

deny but which won't fit into their basic hypotheses. Acupuncture runs totally counter to all our medical theories, but it works. Physics has fallen into a black hole of mathematical conjecture. And not least of all, the world's greatest military power has just lost a major war to a tiny, poor and non-industrialized nation—yet no one asks why. There are some big answers and important new visions beneath these failures. Behind its jargon, this little book by the winning team in Vietnam gives some beginning clues. —TB

The Maze of Ingenuity: Ideas and Idealism in the Development of Technology, Arnold Pacey, 1974, \$6.95 from:

M.I.T. Press
28 Carleton St.
Cambridge, MA 02142

Pacey presents an overview of the development of technology by discussing the ideas as well as the ideals and objectives, the discipline and methods that evolved as a result in each phase of its evolution. He also discusses the differences between intellectual and symbolic objectives in technical progress; one based on the rationalism of science and mathematics and the other whose significance is non-utilitarian. He offers us a background for reformulating and redirecting the future of technology while keeping in mind that "It is not an abstract, unbiased and morally neutral collection of useful skills and knowledge," but that it has much to do with the way people organize their society. —JM



Illustrated by Marie McAuliffe

I recently had another hit that threw more cold water on all the fancy information theories I keep hearing about. I had the good fortune to spend a couple of evenings with Jim Laukes and Beth Hagens of Acorn in Illinois. They told me that when Governor's State University there was setting up its library and information cataloguing system a few years ago (it's a brand new university) they talked to a wide variety of places trying to find out what systems worked the best. Two of the answers they got were from *Playboy* and United Press International—two large organizations that presumably have sophisticated ways of keeping track of their information. *Playboy* said they simply file everything by the girl's name. UPI's computer information system is nothing more than two old geezers down in the basement who've been there *forever* and know *everything*. What about you?

—Lane deMoll

ENERGY THEATER UPDATE

In the October 1977 issue of *RAIN* (Vol. IV, No. 1) we ran an article on AERO's New Western Energy Show that traveled about during the past two summers bringing ideas on energy conservation and alternative sources of energy home to people of small Montana towns. At the end of that article we asked for information about other such groups around the country. Here are our responses from North Carolina to Santa Cruz. Anybody know of any more?

Friends Mime Theatre

Friends Mime Theatre
1248 North 86th St.
Milwaukee, WI
414/453-6281

This group of three from the Midwest conducted over 300 performances and workshops last year for children and adults in theaters and community co-ops, universities and street corners. Their current show is "The Energy Circus" which according to Robin Leenhouts (co-director of AERO's New Western Energy Show) is "a very good show with lots of information and exceptionally good acting. They're very different from us—more political and hardhitting but not as harsh as some West Coast groups I've seen. There's a real positiveness to them." They have a bibliography on energy they hand out after the show and they encourage folks to talk to them. Their message to the audience is to act on the issues. They also do other thematic shows—an earlier one was on food, a new one is planned on work.

Hello,

Seeing the article in the October issue on energy theater excited me to the point of tingles. For the past couple months I have centered my energy on clarifying and acquiring information concerning alternative energies.

The time factor surrounding the energy problem has contributed to my feeling responsible for motivating the masses to get off their asses. Responding to this passion I derived the thought of an energy road show.

Sharing the idea with inspirator Coleman Smith and others aware of the necessity has generated a promising display of enthusiasm. Still in the planning stage, the show will involve architects, musicians, designers, technicians, filmmakers, dancers and various creative talents.

Observing generally a lack of knowledge amongst individuals and groups on methods for solving energy problems, we intend to remain in particular locations long enough to make a considerable impression. Through workshops we can offer solutions which will be gathered during the next couple months.

We are seeking input to define the areas of greatest concern in preparation for grant application. Discovering your existence has added impetus to our endeavor.

With warmth,
Denise Decker
11 Maiden Lane
Raleigh, NC 27607

Apollo Players
c/o Ted Genova
9 Tennis Crescent
Toronto, Ontario, Canada

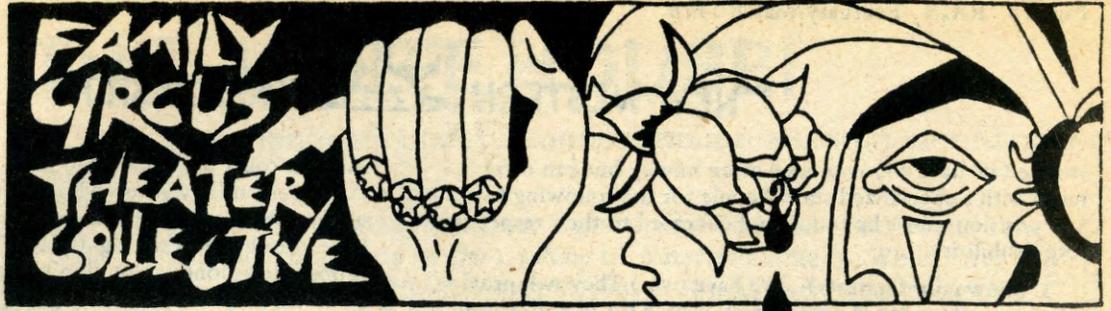
The Apollo Players was one of ten theater troupes formed under the Summer Job Corps Programme in Canada. They were co-sponsored by the Office of Energy Conservation of Energy Mines and Resources Canada and by Employment Immigration Canada. This Toronto-based troupe was comprised of five theater arts students, a creative writing graduate and an environmental studies graduate. They toured schools, shopping malls and summer camps during the summer of 1977 and were hoping to get funded to continue during the rest of the year. "Our costumes are made mostly from our own reused material: a little homemade magic to blend fantasy with reality. We strive to bring the children into the act, as Dorothy in the *Wizer of Off* appeals to the audience for lessons learned during her adventures in the land of Off. Dorothy, an energy wasting little girl, and her puppet dog Toronto, stumble upon the lost power ring of the Wicked Waste of the West, who uses all the precious, saved-up energy of the Munchkins who live in the land of Off."

SANTA
CRUZ
MEME
WORK-
SHOP

Santa Cruz Meme Workshop
153 Myrtle Street
Santa Cruz, CA 95060
408/423-7807

"The Santa Cruz Meme Workshop is a community-based ensemble involved in people's theater and popular entertainments supporting progressive social issues locally and bi-regionally. Our plays speak to those realities which people create and can change together."

Their current repertoire includes *Warriors of the Rainbow*, a compilation of West Coast Indian mythology told in story theater form, and *Water, Water! A Tale of Two Species*, a watershed celebration. They are pulling together two new shows for a tour in Fall 1978—one on energy, ecology and children's rights tentatively entitled *Homeskin*, and a second one on personal liberation. The tour, including residency workshops, will be geared towards rural Northern California. If you're from that area and would like to have them visit, let them know.



Family Circus Theater Collective
221 S.E. 11th
Portland, OR 97214
503/236-7270

The Family Circus Theater Collective is a full-time touring collective based in Portland that has been performing in parks, schools, universities, prisons, taverns, mental institutions and fairs throughout the West Coast since 1972. Their current pieces include *Labor Pains* (focusing on women and work), *Top Cats and Underdog: A Male Menagerie*, *The Rip City Follies* (about older people and housing), and *Shut-Down or Fall-Out: A Tribute to Trojan* (their statement on nuclear power). They'll be on tour soon, so watch for them on the West Coast, or contact Linda Guthrie, their Booking Coordinator for specific dates, places and workshops they offer.

We also have a report that the Movement for a New Society offers training workshops in street theater five times a year.

Contact:

MNS
4722 Baltimore Ave.
Philadelphia, PA 19143

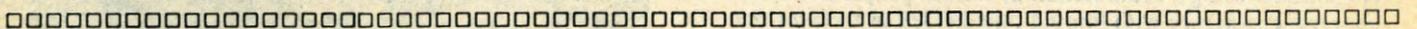
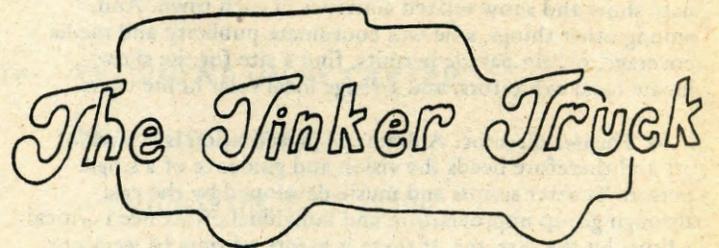
And finally, an address for a group in Denmark called the **Solar Wagens Leute**

Solvøgn
Christiania
København, Denmark

The Tinker Truck
6205 Franktown Road
Carson City, NV 89701

"Puppetry is becoming a more developed part of our program. Already we have two endangered species puppets: a Pronghorn Antelope and a White Pelican that tell their stories to the elementary school children we visit. Also we do a workshop on puppet making (from schoolyard litter) where the theme is the basic elements: sun, water, soil, air, decomposers, plants, plant eaters all asking a quizzical question: "Who's the most important?" We are working on Nevada historical characters who've had a role in the use of the state's resources. We do some skit work with the kids too.

"Here's another puppet-using group: The Environmental Volunteers, Peninsula Conservation Center, 1176 Emerson St., Palo Alto, CA 94301." (Weed Evans)



NEW-WESTERN



ENERGY-SHOWS HOW

How do you produce a traveling energy show? Of course, that depends on what is included in the show, where you want to go with it, and what you want to do with it. We aren't experts on any show except the New Western Energy Show, but with this limited experience we can offer a few hints.

First some background: The New Western Energy Show brings exhibits of renewable energy devices and systems to Montana towns and cities. Large, colorfully illustrated panels, books for sale, a complete library, and fact sheets provide information for the public. Activities such as slide shows, lectures, informational and hands-on workshops for adults and kids involve the public directly in learning and sharing experiences. Finally, a full-scale theatrical and musical medicine show delights the senses and entertains and educates the mind. The theater is the razzle-dazzle selling point and magnet of the show; just as the old time medicine show pulled folks in with its flashy wagons and skits to sell remedies for bodily ills, we draw folks in and try to hook them on ideas and methods to remedy modern "ills" caused by over-use and misuse of energy.

The two aspects of a traveling show most important in shaping its form and quality are its philosophical message and the attitudes and approaches of its staff. The NWES's strong "do more with less" philosophy has its foundation in Montana's grassroots citizen reaction to the threat of massive strip-mining of the Northern Plains. This philosophy is reflected in the attitudes and lifestyle of personnel whose qualifications include steadiness, sense of humor, ability to adapt, sense of equality, and ability and willingness to live lightly on the land. We have found to our great delight that persons with such qualities commonly have talent and common sense, take great pride in their work, and are able to work hard in concert with each other.

The size and scope of a traveling energy show depend on what it hopes to provide, on its schedule, and on its audience; and the tasks involved are defined by the scope of the show. Allocation of the tasks depends on individual abilities. With a small troupe almost everyone must (for instance) fix carburetors in the morning, talk intelligently about recycling in the afternoon, and act in the evening performance. With a large

NEW WESTERN ENERGY SHOW

troupe (we have 14) you need more money but can offer more with a specialized staff. People for the following five key positions must be found and educated to their respective responsibilities:

1. Show coordinator(s): We have two.) They will provide good overall guidance, will be responsible for organization, will keep track of funding, hire troupe members, and make final decisions. Coordinators worry a lot, endure a lot, work unending hours, "carry the weight;" utmost care must be taken to find strong, flexible people with a sense of humor and patience, who can be insistent without being overbearing or "bossy."

2. Show designer: If the physical body of the show is to be unified, portable, pleasing to the eye, and informative, an artistically and technically capable designer is needed to make each idea a working reality. Our design of the trailer/stage and the show circle with different displays is unified by both shape and color. And don't forget to take the weather into account: displays must be rain- and wind-proof (and the bottom parts of standing panels must be dog-pee-proof!)

3. Advance person: You'll need someone who is knowledgeable about the show's needs and objectives, can talk to any sort of person, and can make sound decisions on the spot. Ideally your advance person will find a local person to coordinate show and show-related activities in each town. And, among other things, s/he will coordinate publicity and media coverage, obtain parade permits, find a site for the show, locate local exhibitors, and arrange local solar home tours.

4. Theater director: A dramatic presentation is a work of art and therefore needs the vision and guidance of a single person. Theater scripts and music developed by the cast through group improvisation and individual effort need critical editing by the director. If there is plenty of time (6 weeks or more), the coordination of the theater troupe can evolve more organically using a combination of various people's visions, but our experience with limited time has led us to favor the former situation.

5. Technical director: The collection of displays, equipment and models must be built or acquired by the technical director in coordination with the designer. Workshops, slide shows, and other technical presentations must be developed. As public knowledge continually increases, finding very knowledgeable technical personnel gets harder and harder (they are all in great demand now!) Last summer we resorted—successfully—to offering free, week-long vacations with the show to nationally known experts (including Lane deMoll) to beef up our expertise.

To date our funding for the New Western Energy Show (grants, donations, and a benefit auction) has given us the freedom to plan comprehensive tours around all of Montana. However, after the official 1977 tour, the show was paid by several organizations in Butte to travel back across the state and visit that town. We received our most enthusiastic response of the summer in Butte and realized that the more support (in the form of money and local footwork) we have, the better appreciated we are. If they are paying to have us come, they get out the troops.

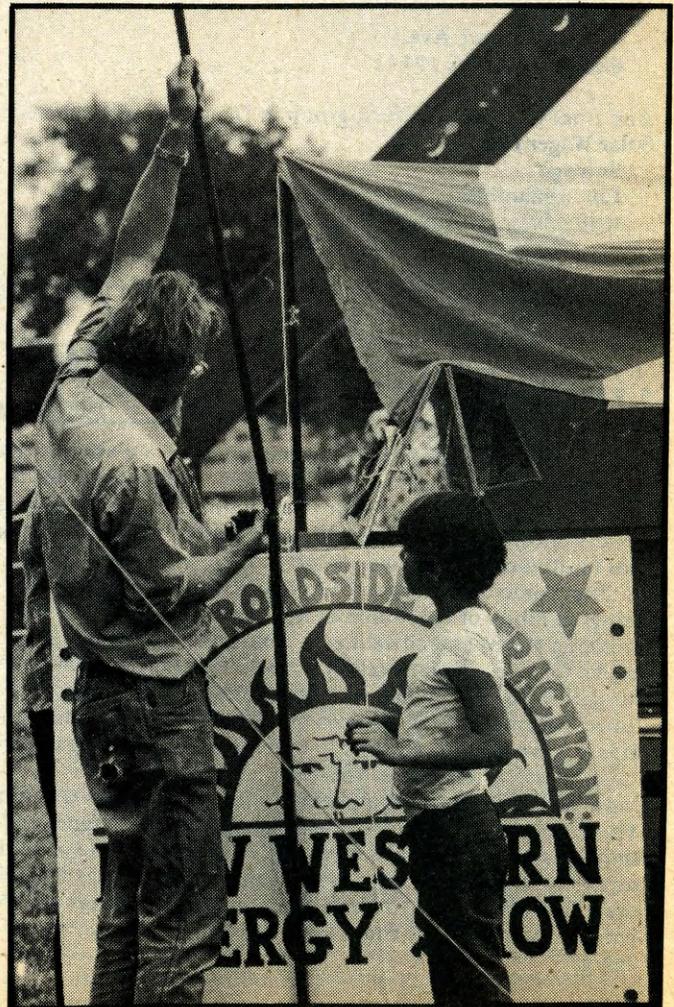
The amount of money needed to produce and run a show depends on the style of the show. The ERDA/Honeywell version of a traveling solar energy show cost \$400,000 to build and their staff stayed in expensive motels. Our total cost for two

summer tours was about \$70,000, and we slept under the stars.

Anyone or any group who is concerned about energy might undertake a project of this sort with success. The trick is to have your heart in the right place. Remember that everything is possible as long as you don't know it's impossible. It could be an ideal cross-disciplinary college project; how about a governmental organization, scout troop, or another grass-roots organization? And in fact, the information our show deals with is interchangeable with other information. What we are really talking about is a very new (and at the same time not altogether new) but very appropriate form of education.

The New Western Energy Show is going into year-round operation from our new center in Helena. Any questions, suggestions or news of what you're doing/would like to do would be greatly appreciated (406/442-4582). To tell more about our activities we have an hour-long documentary film of our 1977 summer and videotapes of our theater available for rent.

—Robin Leenhouts and David Nimick
New Western Energy Show
842 Fifth Avenue
Helena, MT 59601



WASTE THE WHITE HOUSE!

Send President Carter a used 12-ounce beer or soft drink can to show your support for mandatory deposit legislation. While a return to returnables involves both bottles and cans, the Clearinghouse realizes that sending a bottle is not practical, so stick with a can.

1. Tear off the label along the perforation.
2. Fill out your name and return address.
3. Make sure that the can is clean and dry.
4. Cover the opening of the can with masking tape.
5. Then attach to the can one end of the label.
6. To complete the job, wind the label around the can and fasten at the seam.
7. Remember to put 24¢ postage on the can.
8. Mail.

The National Clearinghouse on Deposit Legislation thanks you! For further information write to: Diane MacEachern, Environmental Action Foundation, 724 Dupont Circle Building, Washington, DC 20036.

Editor's Note: If you live in Oregon, Michigan, Maine or Vermont, you already have a "bottle (and can) bill." So you might, instead of a can, simply write the following on a postcard and send it to the president:

"In lieu of mailing you a non-returnable can, please accept this postcard to indicate my support for a National Bottle Bill. All bottles and cans are redeemable in my home state."

Cloudburst, Inc. Research Project
649 N.E. Ainsworth
Portland, OR 97211
503/284-6426

Cloudburst Research Project is interested in developing practical and sanitary methods (such as composting, earthworms, methane digesters, etc.) for disposal and reuse of common organic wastes. The research project is interested in information about individual, community, business or other involvement and experience with the same. The ultimate goal of this project is to avoid landfilling waste *and* provide a useful product. Persons who have experience, ideas, designs or interest in disposal and reuse of organic wastes are asked to contact CRP as soon as possible.

Dear Mr. President,

This beverage container is just one of 70 billion bottles and cans that contribute to the trashing of America annually. While litter and disposal of solid wastes are serious problems, we must realize that throwaways also represent wasted energy; 81,000 barrels of oil per day could be saved with a switch to a national deposit law. As an alternative to waste I support a national deposit on all soda pop and beer bottles and cans. Please urge Congress to adopt deposit legislation.



Sincerely,
Name

From:

24¢ Postage
First Class

To: **PRESIDENT JIMMY CARTER**
THE WHITE HOUSE
WASHINGTON, D. C. 20500



The energy used to make this throwaway represents enough power to keep one 100-watt light bulb burning 20 hours.



Cut out on dotted lines and mail.

Dear Editor,

It seems a shame that the promoters of SUNDAY have skipped the solstices and settled on May 3 as their date. What is the significance of May 3?

The only significance I have heard is that it has been chosen by Dennis Hayes and a group of "Environmentalists" and TV celebrities to be SUNDAY.

Rather than have such a group decide a date, why not leave it to the sun?

The sun is lowest in the sky about 21 December and highest about 21 June (there are no fixed calendar dates).

You can determine the dates with a stick in the ground. These dates, along with the equinoxes, begin and end our seasons. Many civilizations in the past have celebrated these times—it is a tradition we can return to. It has good "grass roots" credentials.

If you want people to start to notice the sun, having the day to celebrate the sun depend on the sun is a help.

Sincerely,
Steve Baer

Jerry Friedberg
Route 2, Box 96C
Leslie, AR 72645

Dear Jerry,

I read your letter in the December '77 issue of RAIN magazine, and will suggest some answers to some of the energy problems you mentioned.

The following organizations have funds for grants concerning energy problems:

The National Center for Appropriate Technology

P.O. Box 3838
Butte, MT 59701

Alternative Sources of Energy Magazine

Route 2, Box 90A
Milaca, MN 56353

Below are listed alternatives open to you, followed by comments relating to economics, ease of installation, operation, etc.

1. Gasoline engine generator, A.C. Fuel is currently high cost and will increase in price. A non-renewable source.

2. Diesel engine generator, A.C. A high first cost, but a lower operating cost than No. 1. A non-renewable source.

3. Gasoline engine generator, A.C., which will run on wood gas made in a gasogen using sawdust, wood chips, straw, etc. This uses a renewable source which is usually locally available. The gasogen can be made of scrap materials. The engine will develop only half the power of gasoline. This method works well only with a constant load, so a load control electronic governor must be used with the surplus power diverted to space or water heaters. Gasoline must be used to start the engine.

4. Diesel engine generator, running on half diesel oil and half drain oil. This requires a low speed, heavy duty diesel, such as Witte. This will cut operating costs about one half. It would require a centrifuge and filter to clean the drain oil. (Cream separator?)

5. A windmill with a battery bank which runs D.C. motors. An inverter may be hooked into system to change some of the power to A.C. for fluorescent lights, TV, refrigerators, etc. Batteries are expensive to buy and do not have a very long life. D.C. motors are hard to find, and very expensive when new. Unless located in a windy area, No. 5 should be combined with No. 1 or No. 2. A.C. can be easily changed to D.C. for battery charging.

6. Water power if available. A low head, high volume source, or a high head (100' or more), low volume source would be sufficient. Water power, if available, is the best alternative source of power and requires no batteries if sufficient power is generated. If an electrical load control governor is used, surplus power can be diverted to space or water heating. If only a small amount of power can be generated, batteries can be used.

7. A gasoline engine generator, A.C., with gas mixing valve running on methane from a manure digester. In cold climates manure digesters are not a net source of energy, but you could use water jacket heat and exhaust head to keep your digester warm. This way, two thirds of the energy in the methane would go for heating the digester. This system requires a water displacement storage tank for the methane.

This alternative is a 100 percent renewable source, but requires an elaborate set-up and large amounts of labor to operate it. It also requires a large amount of manure. Sludge, as a by-product, is a very good fertilizer.



8. A steam engine and a boiler which burns wood, combined with an A.C. generator. First cost is high if new. This requires constant attention to the boiler (Fireman). It has very low efficiency, about 5 percent, unless the exhaust steam can be used for heat.

9. Solar cells with a battery bank. Extremely expensive at present. This system would be fine if costs ever come down.

10. Thermo-electric generator, using sunlight, or wood burning. Same comments as in No. 9.

11. Stirling cycle engine burning wood or coal. This is not available commercially. I have seen a table fan in Pakistan, made in India, which burned kerosene in a Stirling engine. When I was a boy in New Jersey, a brick yard had a Stirling engine, about 1/4 H.P., to pump water. It burned wood or coal.

If you decide on any of these alternatives, I am willing to help you. I could consult with you on the technical aspects of any of these systems. I build high head hydro-power systems, Pelton wheels, plus accessories to govern and regulate power.

I would suggest you get a copy of *Energy Primer* from The Whole Earth Truck Store, 558 Santa Cruz Avenue, Menlo Park, California 94025. I purchased this book for \$5.50 fairly recently.

Sincerely,
B. Felix Meinikheim
Dry Buck Ranch
P.O. Box 5
Banks, Idaho 83602

Dear RAIN gang,

How are things? Here we are snowed in for a while, giving us a chance to catch up with some writing and planning for spring.

You might pass the word on to your readers that *Mother Earth News* has done it again with fine plans for low-cost solar heaters (both active and passive) built from old refrigerators. TMEN No. 49, pages 95-97. I'm really impressed as I've built a panel here (not their design) and am sure theirs will work better.



JOBS

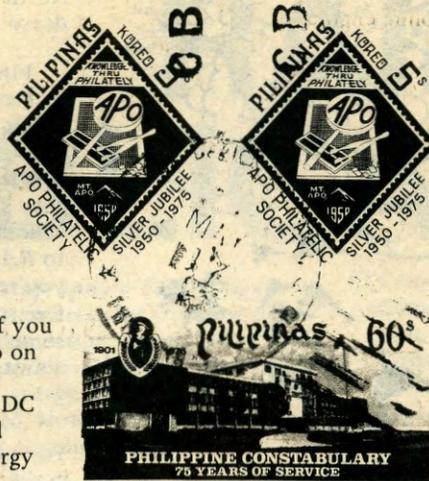
Oregon State University has a position for a *State Extension Agent in Solar Energy* to set up a statewide extension service program, train agents, put together educational materials, you name it. Contact Irma Sargent (immediately), 125 Extension Hall, Oregon State University, Corvallis, OR 97331, Phone 503/754-2261.

The Institute for Local Self-Reliance has a series of positions open: a *Small Business Development Specialist*, *Urban Gardening Specialist*, and an *Attorney* to help in various aspects of community economic development. Salaries are at \$15,000 each. They also need an *Editor/Community Information Specialist* to co-edit their bimonthly, *Self-Reliance*. Salary for that one is \$12,000. For more details, contact Harriet Barlow, ILSR, 1717 18th St., N.W., Washington, DC 20009, Phone 202/232-4108.

Rural Alaska Community Action Program is looking for a *Controller* with professional managerial experience for the \$5.5 million budget and their statewide staff of 250. Salary is about \$30,000 plus moving expenses for the right person. Deadline is February 10, so call or write immediately: Phil Smith or George Irvin, Rural CAP, P.O. Box 3-3908, Anchorage, AK 99501, Phone 907/279-2441.

Farallones Rural Center in Northern California needs a multi-talented soul to fly their way with spoon in hand and solar dryer on back to be their kitchen manager. Experience in food service, nutrition, preservation of garden and orchard produce and teaching is necessary. Room, board and potential income from workshops in this 20-member self-sustaining research-education community. Contact Farallones Institute, 15290 Coleman Valley Rd., Occidental, CA 95465, Phone 707/874-3069.

A generally good source of job listings is the Organizers Clearinghouse at the Western Office of the Youth Project (149 9th St., San Francisco, CA 94103, Phone 415/626-5570). They have a monthly listing of interesting positions at a variety of experience levels from action-oriented groups all over the country.



The reason I'm writing is to see if you will help me pull together some info on low voltage, low amperage electrical generation. We were given a 12-volt DC windcharger to play with and would like to develop it into our home energy source along with solar cells.

I have a 12-volt DC windcharger and would like to make contact with others using 12-volt DC or low-voltage, low-amperage tools and equipment around their homes. By swapping ideas on applications, materials, tools and supplies, a viable alternative to commercial electricity could be developed. In addition, anyone out there using solar cells, please get in touch. I'm sure we could all learn from each other. Joel Davidson, Dutton, Arkansas 72726.

I'll let you know what develops.
Peace,
Joel

Dear Persons,

Re: "Taking off the Gloves." Glad to hear it! Start at home with an examination of the solar house up near the Japanese gardens.* Your utility company is sowing sterile seeds of solar thought in the minds of your local folks. As Steve Baer might say.

The utility doesn't call it a house, but that's what is intended. They call it a lab and brag about all of the data the place will produce for local builders, etc., regarding various solar possibilities. The place is in fact a 1280 sq. ft. solar house built for \$300,000.00! The guides will tell you, though, that you could install all of the energy-saving accouterments for a mere \$35,000.00. If, of course, the items were readily available. They are not.

The place is sterile. The place is another engineer's dream, with a nightmare of waterbottles, pipes, valves, multihued arrows and other gadgets which cannot fail to impress Mr. and Mrs. Homeowner that solar is a long way off. The exact sentiments I heard one time I was there.

One upstairs bedroom is a prison cell. They have trouble keeping the plants alive in the greenhouse portion. Even their circulator fireplace is garbaged down with gadgets: It has a fan that no partymaker would ever allow to upset the post-tofu conversations.

I asked about heat loss. They referred me to a computer printout. Another person asked about photovoltaic cells and was told by a *guide* that there were none here for obvious reasons: the cells produce electricity, and the utility was not about to help the competition.

Trash these smirking, down-talking bozos before they pollute many more minds with high-tech mistruths.

Best regards,
Richard R. Rahders

P.S. I am lucky enough to work with two architect/carpenters who have common sense. So far, we have built two of their solar homes. Designed for people. One passive, one active heat. Total operating equipment: one fan (in the active house, of course).

**The Terra One House by Skidmore, Owings and Merrill and Pacific Power and Light, located at the Oregon Museum of Science and Industry in Portland.*

Editor's Note: It's a comforting balance to such technotwits to hear from Ray Wiley down the valley from us that the well-insulated "Arkansas Houses" they are building there are working better than expected—lowering electric heating bills to \$25 per year. Why bother with \$35,000 machinations? —TB

Raindrops

It's been busy lately, with more to come it seems. We expect Steve Ames, of the University of Michigan, Ann Arbor. "Environmental Mafia," here Jan. 25th and he, Joan and Linda will increasingly take over RAIN's inner workings. A technically-inclined person, or "techno-twit" as Amory Lovins prefers, is still needed to replace me, and maybe another person in some other area to bring us back up to what feels like full strength . . . about five people. Thanks to Joan and Linda, it's not inhumanly hectic these days.

Here's some of the "in-house" stuff that's been happening to me:

John Berger (*Nuclear Power: The Unviable Option* author) came by to brainstorm how to design and run an information network to support anti-nuclear intervenors and organizations. It felt like he understood what we meant about why it's more efficient and fun using people (human bio-computers?) rather than IBMs to answer questions.

My brother Mark gave me Mother Earth News' *Handbook of Homemade Power* for Christmas. Frankly, I was flabbergasted since I thought he knew I'd moved far beyond that! Especially since it's full of dangerous shuck 'n aw pshaw, unsubstantiated jive like the suggestion on p. 351 that Ken Smith and I always rib each other about . . . "Hey, Ken, have you put a leaky methane digester inside a greenhouse and blown yourself up yet?" The joke is based on the fact that most digesters leak gas and should never be enclosed. Hey, maybe he gave it to me as a joke!

We had a good meeting of the PNW Solar Energy Association steering committee at Rainhouse on Jan. 3, and that feels right on schedule for this year's "Solar '78 Northwest" conference (see "Solar" in this issue) for which about \$10,000 in funding is already lined up. Nevertheless, be forewarned that the three-day conference will cost you what it's really worth this year . . . probably about \$30/person . . . partly because we've been given the word by DOE not to expect any financial support for '79. It's time we did this on a self-sufficient basis anyway, and I'm confident we can do so. The conference steering committee meets Jan. 30 in Salem, so I may have an update next time. We'll continue to use RAIN for regional solar association communications until we can afford an independent newsletter.



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Tom, Lane, Linda and I variously spoke at and attended the Oregon State University a.t. conference Jan. 16-18 in the heart of the dinosaur, a nuclear engineering school. It was a good gathering, what with Wilson Clark, Sim Van der Ryn, Roger Blobaum and Eliot Coleman also present and mouthing off. Bill McGowan, a student intern at Ecotope in Seattle, may have a more detailed report on it in the near future.

Along with other peer review panel members evaluating the California AET grant proposals (see story in this issue), I'll be in Sacramento Feb. 14 and 15 for a joint work session. Maybe I'll luck out and it'll be warm enough down there to go swimming!

Then it's off to a "Wind Energy Systems Workshop," Feb. 20-21 in Lincoln, Nebraska, sponsored by the Association of Nebraska Community Action Agencies. There I'll be speaking on the potential for local small business and local jobs that you've already read about in "Wise Wind, Designing for Jobs" (April '77 *Rain*) and "Small Groups, Big Windmills" (Jan. '78 *RAIN*). Steve Blake of Sunflower Power Co. (Rt. 1, Box 93-A, Skaloosa, KS) will be there too, and since we usually have a good time talking wind, I'm psyching up for a mellow meeting.

Haven't seen my grandmother, aunt, uncle and Iowa cousins in a while, so I thought after Nebraska I'd pester them for a day or two in Davenport, Iowa, then go sneak up on Kye Cochran and the other good folks at AERO in Billings and Helena, Montana, on the way home to Portland town. The best bit of luck would be to do all this traveling by energy-efficient train, sitting in the Vistadome gazing out over the amber waves of grain, or whatever.

One time I watched the full moon rise in the wide glowing openness between North Dakota and Montana . . . one doesn't often feel such peace.

Finally, Ken Bossong (Citizens Energy Project, *People and Energy*, 1413 'K' St., N.W., Washington, DC 20005) and I have a belated Christmas present for those individuals who can prove they are indigent anti-nuclear intervenors . . . complimentary subscriptions to RAIN and *People and Energy*. If you're not an intervenor yourself, feel free to suggest the name and address of someone in your town who is. That's about it. -LJ

You may have been confused because in the last Raindrops we talked about Steve Ames but didn't put him in the staff box and then there was this person you had never heard of named Linda Sawaya. Steve wasn't in the box last time (or this time either) because he isn't here yet. Linda is our new layout person. Last time we weren't sure if she was going to become an official Rainmaker or not—we were trying each other out. But now I'm sure you'll agree that she's continuing the fine tradition that Mary Wells started and Marcia Johnson and Tom Bender carried on of bringing you a crisp and beautiful magazine each month. -LdeM

A note to our foreign readers, new and old alike: If possible, could renewals and new subscriptions be paid for with money orders or checks made out for U.S. dollars? Our bank is unable to process some foreign checks and must exchange others. Thanks! -JM

Corrections:

We listed chimney brushes in the January issue as being available from S/A Imports Division, 700 East Water St., Suite 730, Syracuse, NY 13210. They only sell wholesale, so if your local woodstove dealer doesn't stock them, S/A is one of the sources they can get them from.

Brian Crutchfield, listed in January as the NCAT extension worker in the Southeast U.S., is no longer in North Carolina. His address is now P.O. Box 702, Radford, VA 24141.

We also incorrectly listed the Institute for Ecological *Policies* as the Institute for Ecological *Studies* in Jim Benson's article. Whoops!

RAIN PUBLICATIONS

- RAINBOOK: Resources for Appropriate Technology**, 256 pp., April 1977, \$7.95. Resources for changing our dreams and communities. Compilation of the best of RAIN through Spring 1977, with much new material on economics, communications, health, energy, community building and other areas. Fully indexed. Note: RAINBOOK incorporates A.T. Sourcelists and Coming Around.
- Consumer Guide to Woodstoves**, revised Sept. 1977, \$1. Compiled reprints of Bill Day's article on selection, installation, repair of woodstoves, wood cookstoves and wood furnaces of all kinds.
- Ecotopia Poster**, by Diane Schatz, 2'x3', \$3. A reprint of the "Visions of Ecotopia" line drawing that appeared in the April '76 poster issue. Great for coloring.
- Sharing Smaller Pies**, by Tom Bender, January 1975, 38 pp., \$2. Discussion of the need for institutional change tied in with energy and economic realities. Begins to lay out new operating principles, including some criteria for appropriate technology.
- A.T. Sourcelists**, August 1976, 50¢ each, any 6 for \$2. Two to five pages each, prepared by RAIN for the California Office of Appropriate Technology:
- Direct Solar Heating/Cooling**
- Energy Conserving Landscaping**
- Wind Energy**
- Solid Waste Utilization**
- Drying Up the Toilets**
- Diseconomies of Scale**
- Bioconversion: Methane Production**
- Weatherizing: Home Insulation**
- Costs of Urban Growth**
- Natural Pest Control**
- Appropriate Technology**
- Low-Cost Construction**
- Environmental Design Primer**, by Tom Bender, 206 pp., 1973, \$5.95. Meditations on an ecological consciousness. Essays about moving our heads and spaces into the right places.
- Living Lightly: Energy Conservation in Housing**, by Tom Bender, 38 pp., 1973, \$2. Early ideas on the need for change in building and lifestyle; compost privies, Ouroboros Project (self-sufficient experimental house in Minnesota) and the "problem of bricks in your toilet."
- Coming Around: An Introductory Sourcelist on Appropriate Technology**, prepared by Lane deMoll, 1st edition, September 1976. Includes: rural theory, economic theory, manufacturing, institutions, agriculture, transportation, self-reliance and energy. Includes how-to publications but directs you to them.
- Employment Impact Statement**, October 1976, 2 pp., 50¢. A simple, step-by-step way to figure the employment impacts of a new industry and consider the benefits of different options.
- Back Issues Available**, \$1 each. List those desired: Vol. I, Nos. 7, 8, 9; Vol. II, all 9 issues (Vol. II, No. 6 was a poster issue; Vol. II, No. 9 was a special issue on Northwest Habitat.) Vol. III, all ten issues; Vol. IV, Nos. 1 & 2.

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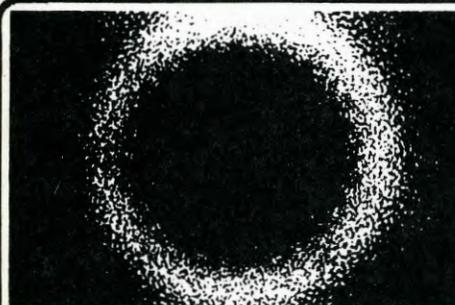
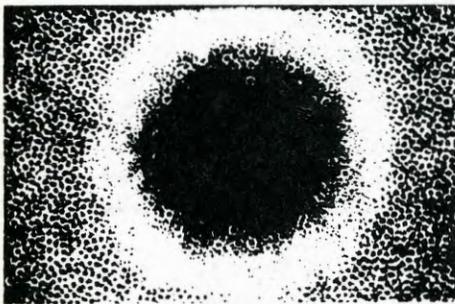
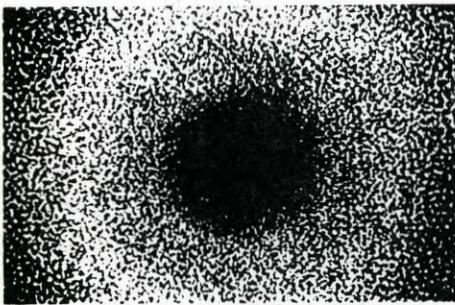
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EVENTS

The University of Washington Civil Engineering Department is sponsoring a Short Course Program in On-Site Waste Water Disposal March 1 & 2. Contact R. W. Seabloom, University of Washington, Seattle, WA 98195.

The Heathcote Center and the School of Living are planning their annual Alternative Energy Conference for March 24-April 1. The emphasis for the first weekend is on a combination of wood heat, solar systems and energy conservation, to be followed by a week of do-it-yourself workshops in a variety of alternative energy systems. Cost for the conference, which includes tuition, meals and sleeping arrangements, is \$35 for the weekend, \$40 for the week, or \$75 for the whole show. Contact Linda Spiesal, Heathcote Center, Rt. 1, Box 129, Freeland, MD 21053, Phone 301/329-6041.



The New Earth Exposition is a national festival of alternative businesses and organizations. The Exposition is based on the theme of living lightly on the earth. It will be in Los Angeles, March 9-12 at the L.A. Sports Arena; San Francisco, April 13-16 at the Brooks Hall in the Civic Auditorium; and in Boston, May 4-7 at Boston's Commonwealth Pier Exhibition Hall. There will be hundreds of exhibits and demonstrations, including a life-size model house equipped with a solar energy system, organic garden and indoor fish farm, wind pump and composting privy.

In addition to the New Earth Expo, the Whole Earth Environmental Expo '78 will be held March 24, 25 and 26 at the Memorial Coliseum Complex in Portland, Oregon. Workshops, technical seminars, informational and scientific exhibits organized around Shelter, Energy, Small-Scale Agriculture and Lifestyle have been organized to connect people with feasible and available alternatives.

The International Wood Energy Trade Show is scheduled for April 3-6 in Madison, Wisconsin. The theme is "Safety Through New Technology." The exhibition will include a wide variety of harvesting and heating systems. Contact the Wood Energy Institute, Box 1, Fiddlers Greed, Waitsfield, VT 05673.

Beginning in April, Heritage Tipi will offer free workshops in making tipis and tipi life. Contact Harold Finklemand, Box 910, Station "Main", Calgary, Alberta, Phone 403/252-8474. Or visit the Heritage Tipi Showroom at 210 9th Ave., S.E. Calgary.

Farallones Institute is offering two five-week in-residence workshops on intensive horticulture at their 80-acre ranch in Sonoma County. There will be a wide range of expertise and information on organic gardening in the context of a productive agricultural situation. Spring dates are April 10-May 12. Fall dates are August 28-September 29. Cost including room and board is \$500. For further information and applications, write Garden Workshop, Farallones Institute, 15290 Coleman Valley Rd., Occidental, CA 95465, Phone 707/874-3060.

Santa Clara County Office of Appropriate Technology is sponsoring a conference on food production and distribution on March 4, at the San Jose City College from 9 a.m. to 5 p.m. Workshops will deal with enhancing cooperation and the sharing of information and services of groups and individuals involved in urban food production and distribution encouraging self-reliance at the individual and community level, exchanging information on garden varieties and techniques applicable in Santa Clara County, establishing a coalition of groups and individuals interested in food distribution and production in Santa Clara County and anyone else who shares an interest. Contact them at the Santa Clara Planning Department, 70 W. Hedding Street, San Jose, CA 95110, Phone 408/299-2880.

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