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RAIN

Journal of Appropriate Technology

August/September 1978
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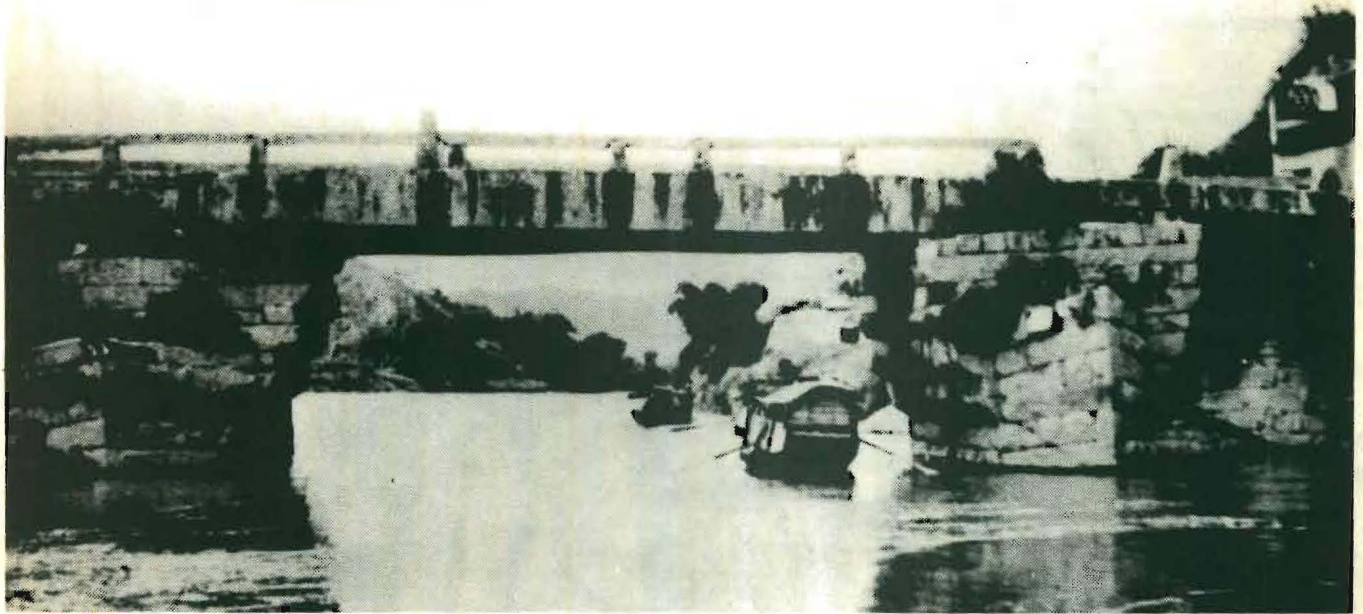
from Kinsey, Photographer

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RAIN

Just a simple bridge . . .

. . . but not the kind of bridges we build. These bridges in China were built to last a thousand years—and they have. Immense stone slabs spanning more than 70 feet, using almost 100 percent of the ultimate strength of the material. Expensive to build—but built just once a millenium. Incredibly cheaper and wiser in the long run than bridges like ours that need repainting, repaving, repair and replacement several times a century. A wisdom that has experienced the ultimate cost of things and chosen well.



Every society gains a different kind of wisdom when it has been around a while. The wisdom to survive, to sustain itself simply, to reach towards meaningful and rewarding life for itself and its people.

We're starting to find that wisdom. RAIN tries to help and share that search.

WIND

Harnessing the Wind for Home Energy, Dermot McGuigan, 1978, 134 pp.,

\$4.95 from:

Garden Way Publishing
Charlotte, VT 05445

Planning a Wind Powered Generating System, Henry Clews, 1977, 46 pp.,

\$2.00 from:

Enertech Corporation
Box 420
Norwich, VT 05055

Just as I'd recommend three "best books" for passive solar home builders, David Wright's *Natural Solar Architecture*, Malcolm Wells' *Underground Designs*, and Bruce Anderson's *The Solar Home Book*, the two above are probably the best for less on residential

aeolian electricity until the U.S. DOE finally gets off their duff and publishes Jack Park and Dick Schwind's *Wind Power for Homes, Farms, and Small Industry*, the very best manual on the topic. Frankly, the latter has been so long in coming that the Wind Energy Branch deserves your harassment . . . why don't you just ask for a copy under the 1974 Freedom of Information Act and send your senator and congressional representatives a copy of your letter to DOE with a note asking them to speed up DOE in sending you the book? —LJ

CORRECTION: The American Wind Energy Association (AWEA) Washington DC office is at 1717 K St., N.W., 20036, *not* at 1717 Connecticut Ave., as incorrectly printed in the June '77 *RAIN*. My apologies for any returned mail. Their office phone is 202/466-4641. You should write them if you're into

wind, as they have four classes of membership ranging from \$10 to \$500 annual dues and commensurate benefits. At a time when both small and large wind energy systems are being increasingly mentioned as one of the most promising, near-term energy technologies for America, it is vital that we promote it vigorously in the nation's capital and contribute our ideas as to how and how fast it should be tapped. AWEA is doing an excellent job and deserves your support. End of commercial. —LJ

RETRACTION: A program to purchase and evaluate small wind energy conversion systems (SWECS) is not being prepared by Jay Kulp of Asplundh Environmental Services (AES) for the Department of Energy (DOE) as reported in the June issue of *RAIN*. DOE has not approved any program for the purchase or evaluation of these systems. Please excuse our error. Our apologies to AES and DOE. —LJ

APPROPRIATE TECHNOLOGY

A N.W. Appropriate Technology Conference, sponsored by the Experimental Center for the Advancement of Invention and Innovation with a grant from the National Science Foundation has been scheduled for September 8 and 9 at the University of Oregon in Eugene. A regional event for the people of Montana, Idaho, Washington, Oregon, Northern California and Hawaii, the conference will update participants on appropriate states-of-the-art in energy, wastes, food production and marketing, community education, growth management and cooperative skill development. An exciting group of resource people from all over the region will be on hand to conduct workshops and share ideas. The conference is free and open to the public. For more information, contact the Innovation Center at 131 Gilbert Hall, University of Oregon, Eugene, OR 97403, 503/686-3326. This looks like a good one—we'll see you there. —SA

New Roots, \$8/year, bimonthly, from:
New Roots
c/o Energy Office
University of Massachusetts
Amherst, MA 01003

New England folks now have their own regional a.t. newsletter—the first issue of which has a real good feel to it. Lists of a.t. learning centers in the region, farmers' markets, local agricultural organizations, regional conferences and events, regional energy policy and more. —TB

Feasibility Study on Development of a Small-Scale Cellulose Insulation Industry in Tompkins County, NY, 1978, \$16 from:

Community Energy Network
122 Anabel Taylor Hall
Ithaca, NY 14853

We mentioned this last issue in introducing an article on fire problems of cellulose insulation but had not yet seen it and didn't have its price (see above). Covers in considerable detail (225 pp.) relative economics, energetics and hazards of cellulose insulation and its small-scale manufacture vs. other insulations. Lays out all the claims and counter-claims but lack of decisive conclusions inhibits somewhat its usefulness. Should definitely be reviewed by anyone considering manufacture of such materials. —TB

Native Self-Sufficiency, 8 pp./issue, \$5-\$10 donation (checks payable to Native Self-Sufficiency/The Youth Project), from:

Tribal Sovereignty Project
P.O. Box 1044
Guerneville, CA 95466

Despite the devastation their cultures have sustained, many Native Americans still maintain distinct natural advantages for re-establishing strong, self-reliant nations: their own lands, their own languages and traditions, and a historical worldview that sees the Creation in every local stream and critter. Many Native folks are now discovering the great potential appropriate technologies have for helping this process along. *Native Self-Sufficiency* is a small newsletter filled with solid information and resources to help Indian people with everything from organic gardening to renewable energy. They are particularly interested in linking up with a.t. projects sponsored by Native folks across the country. Let's help them get established with our financial support. —SA

Grants News Letter, free from:
Office of Appropriate Technology
State of California
1530 10th Street
Sacramento, CA 95814

Though focussed specifically on California, this newsletter also carries information on federal and other funding available elsewhere—HUD Passive Solar Contest, USDA competitive grants on alternative agricultural methods, HUD neighborhood revitalization programs, etc. Also other resources:

The Grassroots Fund-Raising Book, Joan Flanagan, 1978, \$5.25, available from: The Youth Project, 1000 Wisconsin Ave., N.W., Washington, DC 20007. Geared primarily towards membership groups, this book details fund-raising mechanisms such as benefits, auctions, marathons, speakers bureaus, membership drives, canvassing, publicity and other funding sources.

Fund-Raising in the Public Interest, by David Grub and David Zwick, 1978,



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

RAIN	Tom Bender	Joan Meitl	Linda Sawaya
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We keep coming back to the fact that Food First by Frances Moore Lappé and Joseph Collins (RAIN, Oct. 1977, Feb./Mar. 1978) is a seminal important book in understanding the world food situation and its relationship to the goal of locally self-reliant agriculture systems. Food First is now being updated and will be released in paperback by Ballantine Books in January of next year. The following short piece on biogasification, previewed from the new edition, is a reminder that an inequitable society will abuse technology, regardless of its scale.

a good society is the best technology

by Frances Moore Lappé & Joseph Collins

Just as we cannot say that all large-scale mechanization is necessarily bad, neither can we say that appropriate technology is necessarily the answer. Even the "right" technology cannot be imposed nor is it likely to do much good in the "wrong" society.

Contrast, for example, the impact of biogas technology in India and China. Biogasification is a relatively simple method of fermenting organic raw materials such as crop residues and manure to produce both fuel and fertilizer. A small-scale biogas plant can be built from local materials. Since the 1940s India has been developing cow-dung biogas plants, acclaimed widely as a truly "appropriate technology." But, in the highly stratified economic reality of rural India, this apparently beneficial technology has created even greater problems for the poorer groups.¹

First, even the smallest plants require a significant investment and the dung from two cows. Thus only well-off farmers who have at least two cows and some capital to invest now control the biogas. Furthermore, the dung, which once was free, now has cash value. In areas where biogas plants operate, landless laborers can no longer pick it off the road and use it for fuel. And since the landless and other poor villagers are in no position to buy biogas, they end up with no fuel at all. In other words, their position is worsened by the introduction of biogas plants, according to A. K. N. Reddy, governor of the appropriate technology unit at the Indian Institute of Science, Bangalore.

What about biogas in China? Many visitors to China have noted the growing use of biogas in the countryside, now providing fuel and lighting for 17 million commune peasants in Szechwan, China's most populated province. In China, the biogas benefits all members of the community because plants are owned and operated collectively.

The largely methane gas produced by China's more than 4 million biogas pits is used for cooking, lighting and running farm machinery. A member of one commune noted, "It takes only 20 minutes to cook a meal for my family of seven using marsh gas [the Chinese term for biogas].² Unlike firewood or coal, marsh gas does not make the kitchen walls grimy and it has no smoke or smell." The Chinese also note that the sealed biogas pits have helped significantly reduce the incidence of parasitic diseases and eliminated breeding grounds for flies and mosquitoes.

The contrast between biogas technology in these two countries suggests that even technology theoretically appropriate to the needs of the people will *not* necessarily serve those needs. It can even exacerbate social inequalities unless a prior redistribution of social power has created structures in which all share in the control over and the use of the new technology.

Moreover, unless they really grasp the truth that any technology is appropriate only if it advances the poorest groups, many people might be taken in by the claim of multinational firms that they now have converted to "appropriate technology." Firestone-India provides a good example of what we mean. In 1976 the Company announced a solid rubber tire and steel wheel that they said would increase the carrying capacity of India's 13 million bullock carts by 50 percent. Sounds great. But there are two snags. At a price of 60 percent more than the conventional wooden wheel, Firestone-India's wheel is beyond the means of the poor peasant. Moreover, the new wheel will put traditional wheel makers out of business. When asked why the company was introducing the new wheel, the factory director explained that the motivation was the current glut in the natural rubber market. "Rubber-tired wheels on bullock carts will provide a large outlet for this surplus rubber."

The source of this account, *New Scientist* writer Joseph Hanlon, notes as he traveled across India: "There is no shortage of technology, nor even of 'appropriate' technology . . . [But] the power and profits remain with those who have always had them and who have been able to exploit the new technologies as they did the old."³

To repeat: Even the "right" technology cannot be imposed nor is it likely to do much good in the "wrong" society. The truly right technology, whether it be capital- or labor-intensive, will only be the product of a profound social restructuring in which those who are doing the work decide what is right for them.

1 Joseph Hanlon, *New Scientist*, May 26, 1977, p. 267ff.

2 *Christian Science Monitor*, August 3, 1977

3 Hanlon, p. 469.

WITH A LITTLE HELP FROM OUR FRIENDS

by Lee Johnson

OK, now this seems a little incestuous even to me. But the Beatles were right about how we all get by, weren't they? When old friends do good work, they certainly deserve mention even if it does seem like the mutual back-patting that sometimes passes for honesty these days. But the new, revised *Energy Primer* by Richard Merrill and *Soft-Tech* by Jay Baldwin and Stewart Brand are not only very useful items for your heads, hands and your a.t. bookshelf; more on that later. They also reflect the kind of purposeful, feedback-to-the-system that began for us in the noisy '60s, when we knew or felt we knew what we didn't like about society but didn't really have much of a positive agenda beyond some faint inklings here and there.

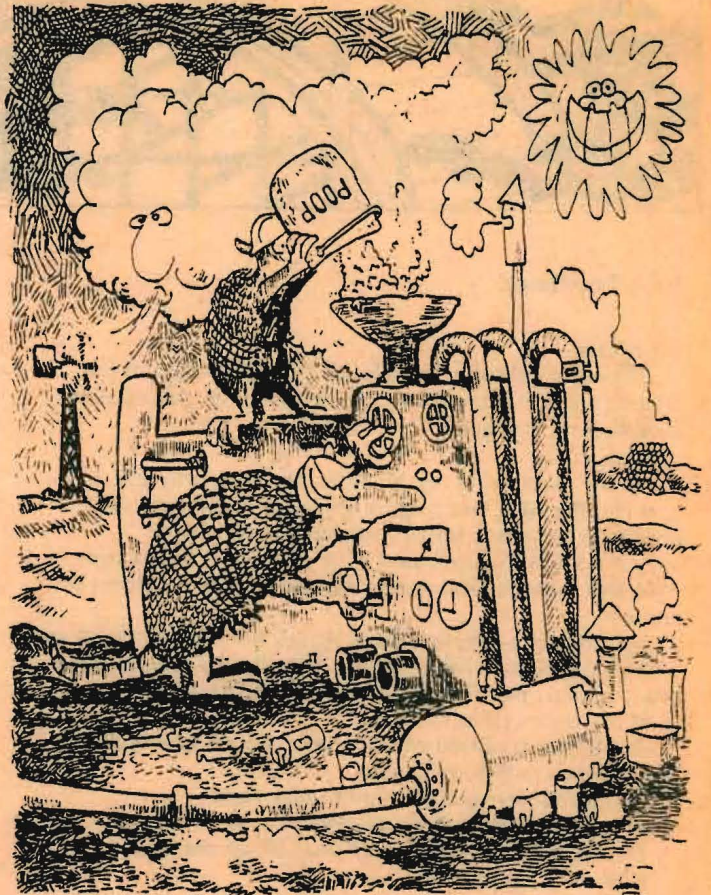
Well, presto-chango! We're *still* all mouthing off about what's not going to work in America, but we've also been writing, designing and building some damn good stuff that has led a whole bunch of us (20 to 30 million, if you believe Stanford Research Institute) onto new paths that feel better than the old. And wouldn't you know it . . . all just in the nick of time to smooth the energy and other crises (you name 'em) into a peaceful, humane transition, if we're smart enough to persuade another couple million Americans that our version of the future is cheaper, more cosmic, safer, more democratic, or just plain more fun.

Now there's bound to be all sorts of ways to go about making that appeal. That's what these two books, and our own *Rainbook* are . . . starter kits with different packaging to help our fellow citizens toward the same end. Sounds patriotic, doesn't it? But then we think there are other ways to be patriotic and other things much more important to our nation than the national defense budget in making sure we all not only survive but thrive. For the past ten years or so, many of us have been trying to find them or develop them in our own country, and then tell you what we think they mean so you could decide what to do. And frankly, we've done it much more effectively than any government agency . . . a debatable measuring stick these days. Perhaps Jay Baldwin best sums up what we've learned most recently about synergy over long distances:

You may already have noticed there seems to be a lot missing that you'd expect to see in a Soft Tech book. That's because I've purposely avoided needless competition with those on our side who are already doing a great job. Thus I've left most energy matters to the new edition of the excellent Energy Primer and its superb bibliography, and just about everything else Soft Tech doesn't mention to the remarkably complete Rainbook.

Energy Primer (revised and updated), edited by Richard Merrill and Tom Gage, 1978, 256 pp., \$7.95 postpaid from:
Delacorte Press
245 E. 47th St.
New York, NY 10017

Soft-Tech, edited by Jay Baldwin and Stewart Brand, 1978, 176 pp., \$5.00 postpaid from:
Co-Evolution Quarterly
Box 428
Sausalito, CA 94965



from *Energy Primer*

The *Primer*, for example, will appeal most to the individual oriented toward planning, building, or buying personal home energy hardware. Since energy is the first big crisis area, it's only natural it has its own technical bible and reference manual. And we're very lucky it was done by people who are not only professionally knowledgeable, but experienced in hands-on construction, and grounded in the "self-reliance for local control" philosophy we share. That's what makes it incomparable.

Soft-Tech, on the other hand, covers those individual tools for living with more of an inventor's eye for the creative irony beyond the technical explanation. And it covers areas (agriculture equipment, small tractors, transport, steam power, building techniques) not in the *Primer*. Perhaps the best single item is Jay's piece on "One Highly-Evolved Toolbox." I'll let you discover it for yourself, for that alone is worth the price of admission. Add to that some of the best soft-tech articles from *CQ* and you've a real winner.

In the future, I predict we'll see more of an emphasis on less costly, shared, community technology which Jay correctly realized we were trying to emphasize in *Rainbook*. Technological Jeffersonianism works, but it's expensive, both financially and socially. And, hopefully, we'll have big, one-topic primers on "non-energy" areas like compost toilets, building, organic farming, neighborhood recycling, and so on. Yep. That's what's next. Step right up and help us make the world work.



LETTERS

BPA Feedback

Dear Rain,

I fear Lee Johnson's article *Roll on Columbia* did not make it clear that the BPA "can no longer be viewed as the local federal 'bad guy'."

I ask you:

- How many wind machines has the BPA ordered?
- Has the BPA taken a position against those poison-producing, resource-wasting nuclear power plants?
- Did the BPA admit that with *moderate* conservation measures the electrical growth rate goes from 6 percent to zero?

Munro may be preferable to Hodel, but bureaucracies are bureaucracies and change slowly if at all. It is most inappropriate to start painting the BPA with white hats and horses until its/their actions merit it.

And in the tradition of folk music, let me pass on some newer verses to Woody's song:

*Up on the river is the Grand Coulee Dam
The ugliest damn thing ever built by man
To run the great factories that screw up the land
Roll on, Columbia, roll on.*

*Down in the valley the apple trees stand
Feeding a nation on irrigated land
But how did we let it get so out of hand?
Roll on, Columbia, roll on?*

Joe Lubischev
Bainbridge Is., Washington

Dear Rain,

Lest anyone take seriously Lee Johnson's naive evaluation of Sterling Munro as a breath of fresh air in the Bonneville Power Administration, I suggest that observers of Mr. Munro (1) carefully think about the differences between style and substance, and (2) study Mr. Munro's remarks concerning EPA's decision to deny the Colstrip Consortium a permit under the PSD provisions of the Clean Air Act. Lee Johnson seems to have been captivated by Sterling Munro's "nice guy" approach to his job as Administrator, in high contrast to Don Hodel's "thug" act.

In a speech given to the Pacific Northwest Waterways Association at Sunriver, OR, on June 20 of this year, Munro spent his time bemoaning EPA's decision to enforce the Northern Cheyenne Tribe's desire to maintain the current air quality on their reservation by not permitting that air quality to be degraded by two 700-megawatt coal-fired generators a consortium of utilities wished to build on the Tribe's doorstep. In his speech Munro raised the specter of blackouts and droughts if the 13 nuclear and coal-fired power plants now scheduled for completion between now and 1989 aren't constructed and in operation on schedule. He lauded the utilities' load growth forecasts as an accurate predictive tool, and belittled conservation as a "placebo." He hoped that DOE Secre-

tary Schlesinger would be successful in getting federal legislation passed that would speed up the lead time required for new power plants. As far as alternative renewal technologies go, Munro cited the NEPP "optimistic case," which projected a solar power capability in the region of 2 million kW by 2000, displacing 2 nukes (remember, Munro is worried about how to facilitate the construction of 13 fossil fuel power plants within the next ten years). "But the year 2000 is a long way off when you're trying to find a supply for the needs of the 1980s." Also, "Some, but not a whole lot, of wind power possibly could be brought on line within 5 years—and we must try."

The next day, Mr. Munro was in Bellingham, Washington, talking to the Washington State Grange Annual Convention. Here's some of what he had to say: "I hope you will help assure adequate supplies by supporting more nuclear and coal-fired thermal power plants—if that's what it takes. There are 13 such plants—9 nuclear and 4 coal—scheduled for completion between now and 1989. But even if all 13 are completed on schedule, the region will be power short in any year between now and 1990 in which streamflows fall to or near the low levels of 1973 and 1977. We could be short in some years by as much power as it takes to serve 2-1/2 cities the size of Seattle.

"Worse, at least two of the scheduled 13 plants are in danger of not being built because of environmental objections. The federal Environmental Protection Agency has denied permits to the builders of two coal-fired plants at Colstrip, Montana, which are numbers 4 and 5 on the list of 13. The matter is before the courts. If the decision stands, conservation will be put to more of a test than even I, with all my enthusiasm for conservation, am confident it can pass. . . ." Imagine, the EPA having the gall to deny a power plant because of *environmental objections*, as if it were important that some Montana residents would rather not have the air they breathe degraded so that consumers 800 miles away can continue to consume twice the per capita national average of electricity.

No, I don't think the BPA has changed a whole lot from Don Hodel's days. Oh, it's fashionable to talk about "the exotics" because that sells politically, but when you get right down to it, the Hydro-Thermal Power Program is still BPA's agenda. They've simply learned some folksy PR techniques, and are learning the right phrases to voice to a public anxious for a change. And I'm sure Sterling Munro really *is* a nice guy. But that coal is just sitting under the ground in eastern Montana, and there's all those beautiful 30,000 megawatt transmission corridors just waiting to have those 500 and 765 kV lines built through them. Hardly anyone lives out in eastern Montana anyway, just a few rednecks and Indians. As far as nukes go, well there are some problems, but gosh and golly, we're going to build 9 BIG ones in the next ten years . . .

Sincerely,
David Alberswerth
Billings, Montana

National Recycling Networking

Dear Rain:

I wish to take this opportunity to outline for you a serious problem which I perceive in the so-called recycling industry. I also wish to initiate a dialogue with you which may assist us to resolve this problem.

With the continuing energy and resource crunch as well as the increase in regulations involving solid waste disposal facilities, many municipalities are looking to source separation systems as a viable part of their solid waste management plans. For instance, only a handful of towns collected recyclables in 1971; now more than 250 communities offer such service. Private enterprise is increasing their investment in reclamation projects, as evidenced by the BIRP project in Arizona and Weyerhaeuser's large office paper recovery system. In other words, there is a growing interest in and a growing audience for recycling.

But, as with many innovative and community-based activities, the level of available literature is seriously limited. In a sense, the new recycling program operator will encounter the same difficulties as many previous project coordinators. Information is available but there is no vehicle to gather, evaluate, review and disseminate the available literature. A national recycling publication is needed.

I believe, after seven years operating a wide-based recycling business and now participating in a resource management consulting firm, a need *and* a market exists for a recycling publication. Present publications such as yours and *Compost Science/Land Utilization* peripherally address recycling issues. But no single document aims to serve only this audience.

I have gathered materials, including mailing lists, for use in the establishment of such a newsletter or magazine. In addition, I have begun a draft developmental plan. But advice from the learned is required. What comments, given the tentative nature of my remarks contained herein, can you offer? Have you encountered similar interest from other parties? Is this idea fundable?

I recognize that my questions may be difficult to address. I am more than willing to provide additional details. But I appreciate your previous assistance and I hope you can help me at this time.

Please feel free to contact me.

Sincerely,
Jerry Powell
Resource Conservation Consultants
1615 N.W. 23rd Ave., Suite One
Portland, Oregon 97210
cc: Jerry Goldstein, *Compost Science*

The Best of Seed

Dear RAIN:

I saw your review of *Growing and Saving Vegetable Seeds* by Marc Rogers in the July issue and wanted to suggest some alternatives. Three small booklets I have found to be quite good are:

- *Vegetable and Herb Seed Growing* by Douglas Miller, Jr., Bullkill Creek Publications, Hersey, MI, \$3.25.
- *Growing Garden Seeds* by Rob Johnston, Jr., Johnny's Selected Seeds, Albion, ME 04910, \$2.30.

- *Save Your Own Seed*, by Lawrence D. Hills, The Henry Doubleday Research Association, Bocking, Braintree, Essex, England.

Rogers' book seems to me to be a diluted version of the same basic information contained in any of these three above publications. The extra money does not appear to be merited. And I would even say that Rob Johnston's and especially Douglas Miller's booklets contain more useful information for anyone actually trying to save their own vegetable seeds. Thanks for listening. I appreciate your efforts and your magazine very much.

Bill Wheeler

Moving Down the Food Chain

Dear Friends:

Like you, I am interested in exploring lifestyle alternatives and am currently seeking data on algae as a food source. I have exhausted local information sources (periodical literature and library references) and have gathered very little more than sketchy information from articles published in magazines over the past 30 years. I have established that:

- Algae has perhaps the largest energy/protein potential of any food source and is the shortest circuit from sun energy to retrievable body energy.
- When Cortez discovered Mexico City during the Spanish Conquest, he was astounded that a city of 500,000 people could be supported with so little agricultural endeavor until he found that the major food source was algae slime harvested from the lake which the Aztecs dried and prepared as a cake-like foodstuff. This practice was regarded as disgusting and uncivilized by the Spanish conquerors and eventually disappeared in favor of fear of gods and starvation.
- Algae is not currently considered a food source because people won't eat it as long as meat, potatoes and gravy remain an alternative, because algae is considered a poverty food.
- Algae is considered by NASA to be the most probable food source for long-term space travelers of the future because it can be cultivated so efficiently in very little space, fulfills most all body needs and reprocesses CO₂ into O₂ quickly and efficiently.
- Experimental algae cultivation has yielded 40-45 tons per acre per year with a 25 percent protein content requiring nominal effort to cultivate and harvest.

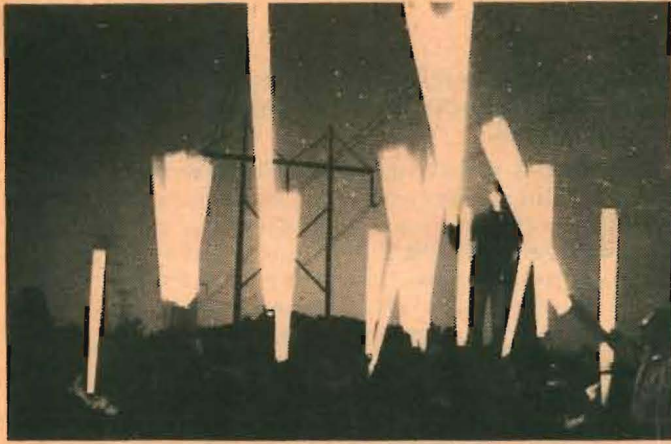
Specifically, I now want information on how to cultivate and prepare algae for human consumption so that I can experiment with producing it.

I am writing you in hope that you will have access to some of this information. I will gladly reimburse you for postage, copying expenses and/or published materials sent to me and will be grateful for any data that you can send my way.

Thank you for your help and consideration.

Thomas Johnson
Pomegranate Design
Bag End, Emigration Canyon
Salt Lake County, Utah 84108

Any responses for Thomas from algae-eaters?



Fluorescent tubes lit by 345 KV electric fields in New York.

David Tinney, Binghamton Evening Press

With the emphasis on remote nuclear energy parks, mine-mouth coal-fired plants in the hinterlands, electricity exchange agreements between massive regional grids and the shipping of electricity over long distances to metropolitan areas, the nation's electric generating system is being centralized into a surreal "economy" of scale. Extra High Voltage (EHV) transmission lines capable of carrying huge quantities of electricity are a critical feature of this misguided strategy—they are the tie that binds. If the momentum behind the expanded use of EHV lines continues unchecked, there will be hundreds of thousands of miles of the newest generation stretched across the country by the turn of the century. EHV lines are called the "tail of the Dragon"—the symptom of the much larger problem of overelectrification. But symbolically and strategically, this tail is being tackled by people as their point of entry in the emerging struggle to bring the production and distribution of energy back down to a human scale.

TAIL OF THE DRAGON

by Steven Ames

Powerlines: Politics of Scale

Voltage in large transmission lines has steadily increased over the years in order to handle the growing trafficking in electricity. From 138 kilovolts (kV) the lines were upped to 345 kV in the early '50s (the first *extra* high voltage) and to 765 kV in the late 1960s. Although there are now some 200,000 miles of lines rated at or above 138 kV, our long-term experience in understanding their health impacts are minimal. Their environmental and social impacts are already being felt. Still, the next generation of lines, between 1,200 and 1,500 kV, are already being planned for and tested.

As power companies rush to swell their generating capacity, the public bears the costs. Small users already subsidize the transmission and distribution of their electricity far in excess of the cost to generate it. But with the new EHV lines, the *diseconomies* they incur get much worse. Utilities maintain that electricity can be moved over long distances with relative efficiency at higher voltages. But in striving for maximum "economy" they *externalize* certain costs of the lines—such as huge losses of electricity during transmission—onto the localities which have to live with them.

Because of where EHV lines must necessarily run, rural people in particular are being asked—even told—to bear the high social costs by power companies and government officials. But across the country small farmers, landowners, rural communities, ranchers and Indian reservations are mobilizing their resources and energy to take the lines and their builders head-on. They see several critical issues at stake over the building of EHV lines, including:

- the serious neglect of the health problems of a high impact technology, and the willingness to use rural people as guinea pigs in understanding its long-term consequences.
- the chewing up of thousands of acres of rural land and local agricultural economies to overfeed electricity to metropolitan areas.

- the patent abuse of eminent domain by large interests for questionable purposes at the expense of local control, and a widespread abuse of authority by power companies and governments in attempting to build the lines.

Regional Protests

Three areas of the nation which have seen the most persistent and hard-nosed public opposition to the construction of powerlines are the Northern Great Plains, rural Minnesota and upstate New York. Interestingly, all three areas are located in northerly latitudes, have their own brands of "regional consciousness" and see the issue of EHV transmission lines as a threat to their way of life.

In the Northern Great Plains people have been actively organizing for several years now in the face of the massive coal-mining and mine-mouth energy facility development that has been proposed due to the presence of vast coal deposits. As a result, says Jeanne Charter of the Northern Plains Resource Council, a strong connection has been made between ranchers, farmers, Native Americans and environmentalists in relation to the siting and impact of these facilities. Powerline foes in the Plains closely identify with this established network and most of their groups are affiliated with one of the regional resource councils involved in the energy struggle.

Opponents of the lines are particularly active in Montana, where they are fighting the imminent establishment of *energy corridors* (massive rights-of-way for several EHV lines) between the coal-rich southeast and the existing power grid of the Pacific Northwest. Part of that line already exists due to the construction of the Colstrip 1&2 coal-fired plant, where 230 kV lines have been mounted on 565 kV towers in anticipation of the Extra High Voltage to come. If units 3 and 4 at Colstrip are built, this would forge the first in a series of proposed corridors; the inertia would be difficult to counter. Opposition to the EHV lines is especially strong in the western valleys of Montana, where a single corridor would have a dominant impact on land-use and aesthetics. Native people of the Flathead reservation have refused outright to allow any lines to pass over their lands by right of sovereign tribal authority.

In the North Country, Minnesota farmers have organized a sustained and strong-willed campaign for four years now in opposition to an 800 kV (\pm 400 kV Direct Current) transmission line which is now 40 percent completed. The line is being built by two power cooperatives to meet their projection of need for the 1980s; when completed it would run from a mine-mouth coal-fired plant in North Dakota 427 miles east to Delano, Minnesota.

Initially, the farmers had blocked its construction by organizing enough grassroots opposition to convince local county commissioners to reject the power companies' request for zoning approval. But, with a new law the state assumed final authority on powerline routing through its Department of Environmental Quality, removing the successful element of local control. Since that time farmers have weathered successive rounds of court hearings and meetings with public officials and legislators which have been met with a frustrating lack of responsiveness and legal cul-de-sacs. A high point in their popular movement came this spring when over 6,500 people gathered to demand that the governor's proposal for a "science court" to hear health and safety questions be expanded to include the issue of need for power and a simultaneous moratorium on construction of the EHV line while the court took testimony. The science court was subsequently cancelled. This kind of de facto resignation to the inertia of the EHV line has led the rural protestors to intensify their direct action tactics to block its construction, including physical confrontation with construction workers and police, and sporadic vandalism. Some have gone as far as dismantling transmission towers.

The farmers feel they have been deserted in a land grab by the power companies for an undemonstrated need. However, they are continuing with direct action, turning to more political arenas and educating themselves on renewable energy strategies that could effectively eliminate the need for EHV lines. One of their supporters, Alice Tripp, is running in the September gubernatorial primary and she's talking solar energy.

In Upstate New York the situation bears many similarities to Minnesota. The opposition to a proposed 765 kV transmission line started with a handful of farmers but now includes all sorts of rural people united in a state network called the KV Alliance. They began by focusing on legal and administrative tactics, taking the Power Authority of the State of New York (PASNY) to court over its EHV line proposal, and then became intervenors in the state hearings on the health and safety issue.

By late autumn 1976, when preparatory work on the line began, people were feeling betrayed by so much administrative wrangling; they began to use direct action to block construction. They also became involved in a public education campaign which has found a large audience across the state. Part of that campaign has been to emphasize the false economy of generating electricity in Quebec to be shipped over 1,000 miles for use in New York City, and that an EHV line with its enormous capacity will encourage the development of more nuclear power plants in northern New York. The 150-mile leg under construction may survive the remaining legal strategies, but it has become a well-known symbol to rural people across the state and they are learning how to organize to deal with powerlines planned elsewhere in New York.

Electromagnetic Fields and Ion Currents

The New York State Public Service Commission hearings begun in 1975 and recently concluded have, at least, served to ear-mark a major concern over the continuing proliferation of EHV transmission lines—what they do to our physical and mental health.

The immediate hazards are as easy to understand as the humming and popping noise lines produce (up to 70 decibels under 765 kV lines) or the way they can make your body hair stand on end. The voltages carried by this generation of lines are so great that they cause small electric currents to flow continuously to the ground, vegetation, as well as bodies of animals and people in the powerline right-of-way. Power companies recommend that all stationary objects such as metal buildings, roofs and fences in the vicinity be grounded, and that vehicles using the right-of-way have grounding chains. But these methods have not always kept people from receiving strong shocks under 765 kV lines, as a grounded person touching a charged object becomes a conductor. This in itself is enough of a danger to cause on-the-job farm accidents. But if the charge is strong enough it can paralyze the muscles of the hand so that a person is unable to let go. Large vehicles under the lines, such as school buses or combines, can deliver enough current to exceed the safe *let-go threshold* for a child.

The long-term health effects of EHV lines are much less understood and inadequately researched. Yet evidence is starting to accumulate indicating that regular exposure to the electric and magnetic fields produced by EHV transmission may cause much more serious health hazards. Studies from the Soviet Union investigating the health abnormalities in workers at 500 and 750 kV substations found that long-term exposure has resulted in disruption of the normal functioning of the central nervous and cardiovascular systems, changes in the blood structure and reduced sexual potency. As a result the Soviet government has regulations drastically reducing human exposure to these fields.

While much of the American research until recently has found little cause for alarm, it has also been funded by the electric utility industry. But the New York hearings came somewhat closer to acknowledging that a clear danger to human health exists. Extensive testimony revealed numerous studies on the probable biological effects of electromagnetic fields on people. One such testimony compared such effects to chronic stress and claimed that exposing local people to EHV transmission lines was equivalent to performing unauthorized medical experiments on them. The hearings concluded that there was inadequate scientific data at this time and authorized a new seven-year study. But local powerline opponents agree with the guinea pig theory and are appealing the recommendations of the hearings.

This situation surfaced in Minnesota as well, which has had no public inquiry into the little known health implications of EHV Direct Current lines. These lines do not have the electric field problem, but *do* have an effect called *ion current*, which may be just as serious a health hazard. One such EHV DC line has already been energized as a part of the "Pacific Intertie," the western world's largest transmission line that connects the power grids of the Southwest to the electricity of the Northwest. A second leg of this energy superhighway is proposed which would include a 1,000 kV DC line. In all, the experiment is already underway.

A Land-Based Issue

The land factor is equally important to rural people who draw their values, lifestyles and livelihoods much closer to the ground than do city dwellers. The use of EHV lines to further the centralization of energy systems will have high impacts on this land base with largely negative returns.

Because federal regulations try to minimize the impacts of transmission lines on scenic and recreational areas, population centers and prime timberlands, and because power companies want the cheapest, flattest, most accessible routes, rural farmlands have become the most likely places to site energy corridors. But EHV lines are mammoth in scale—four 765 kV

towers can cover one mile—and 30 miles of the most minimal right-of-way can easily consume a thousand acres of prime agricultural land. Diagonal crossings raise major problems for field work and lines can render some irrigation systems useless. Farmers must pay taxes on land consumed by a line and can be held liable for damage to the line or accidents that happen because of it. There is not much of a market for farms up for sale near EHV line routes—except perhaps absentee corporate landlords. In all, the lines are part of a system that helps to eliminate small family farms and the local land-based economy. A nation that opts for proliferation of these corridors must necessarily reduce its priorities for a stable agricultural system.

Centralizing Power Centralizes Authority

Such impacts and the ability of the utilities and energy authorities to apply them with little restraint raises a central question of the abuse of authority. Even in the early stages of EHV line construction it has been apparent that authority has sometimes been effectively pre-empted by the power companies and tacitly delegated to them by state agencies and courts caught up in the inertia that such large projects generate. This has been particularly evident in the procedural fog used to obscure the data on just how much need for electricity actually exists, or how different data or end-uses of energy could result in greatly lowered estimates. Powerline protesters in all regions have tried to open these questions up to wider public debate from the exclusive realm of power company experts.

Another aspect of that inertia is how much the “public service” feature of the power authorities and distribution co-operatives has seriously eroded. They are increasingly acting like privately owned utilities in their energy planning and lack of responsiveness to local constituents. This fact is stressed time and again when one speaks to public interest advocates and powerline protesters who have watched the push for EHV lines. The rural power cooperatives in Minnesota, for example, theoretically respond to the needs of local people through representation on their boards. But in reality, the local reps don't have any real power and their objections to such projects are overruled; instead, the co-ops are run by managers and experts who base their support of EHV lines on the economic logic of the larger power associations to which they belong (or “cartels,” as one farmer calls them). Maverick co-ops have tried to opt out of these associations over the EHV issue without success.

Clearly, an increasingly centralized energy production and distribution system will reduce the options of rural communities to exercise their own priorities. It already has in such places as Pope County, Minnesota, where the commissioners voted “no” and the state said “yes.” Its overwhelming thrust is to take rural people's control over their lives out of their own hands and put it in the hands of a remoter interest which simply can't be as concerned with their livelihood. Such relinquishment might be more necessary in metropolitan areas with their complexly interlocked systems of meeting human needs. But in distant rural areas it must ultimately undermine the power of the community to function self-reliantly and freely—it is cultural destruction from afar. And rural people know this on a gut level.

Linking Up Over Energy

Their response to this kind of threat as it is played out in the unrelenting construction of EHV lines has been varied. Most of these rural folks have treated their experiences as first-class political education, as they have had to deal with

the prerogatives of remote authorities, *agents provocateur* sent afield by power companies, and the persistent neglect of public officials. Many, for the first time in their lives, have engaged in the confrontation of legal authority and the use of direct action. Some find themselves perplexed and apathetic after several years of sustained opposition; but others are getting fired up, entering politics or going after the politicians. In all, a lot of rural people—often wholly conservative and always concerned about their communities—have had their heads turned around by the directions that the technology of inhuman scale will take this country if we let it, and how that direction can be changed with the right effort. The education factor can't be underestimated, says Ellen Rocco of New York state, a powerline activist. Any initial defeats will be absorbed by the awareness that is occurring across that state. These people will have a head start in organizing for the next round.

Indeed, as powerline people in dozens of states educate and organize to take on the proposed EHV lines across the country, they are starting to draw connections between their own concerns and those of other groups involved in energy siting and development issues. These connections include:

- the recognition that a whole range of energy facility siting issues, such as new thermal and nuclear plants, coal gasification and slurry pipelines, and EHV transmission lines, can be seen as functions of the same problem.
- an understanding that citizens seeking equity in energy development have different points of entry, whether through environmental impacts or rate reform, and that they need to cooperate with each other in seeking solutions.
- the realization that conservation and transitional technologies can usher in a new era of decentralized, renewable energy sources that can effectively eliminate the need for massive grids, exchange agreements and EHV transmission lines.

Such connections have encouraged powerline activists to link up in a network that can help avoid the isolation of small groups working in the hinterlands on their own issues.

In order to strengthen the nation-wide network of activists involved in energy-facility siting issues, a **National Conference** is being held **September 16 & 17, 1978** in **Lowry, Minnesota**, one hour west of the Twin Cities. Conference planners hope as many people as possible involved in powerline struggles and other energy facility siting questions can come to share information and strategies. There will be **no registration fee** for this conference and **out-of-region participants will be housed by local people**. The Environmental Policy Center is helping to coordinate the conference and is looking for potential sponsors to help cover the costs, including air fare for long-distance participants. If you can help them or would just like to attend, contact Jack Doyle at:

Environmental Policy Center
317 Pennsylvania Ave., S.E.
Washington, DC 20003
202/547-6500

Rural People and Regional Strategies

There are of course a range of strategies that could be pursued by powerline activists. For example, they could focus on a certain inevitability of EHV transmission lines and set

about to guarantee upgraded standards for tower construction, larger rights-of-way and ground clearance, the encouragement of more R&D into better transmission technologies such as *superconductors*, and of course stricter standards on public exposure to electromagnetic fields. But after the eye-opening experiences of the last couple years, most powerline groups would find it hard to place much trust in the existing energy system to act so responsibly. Ultimately the public would foot the bill in higher utility rates and the increased loss of good land. And yet such reforms would still ignore the issue of need and the nonsense of shipping electricity hundreds of miles. In fact, marginal improvements in the safety factor will only add to the pressure for more generating capacity and thus more lines. You don't build a superhighway and not expect more traffic. As an effective strategy, such reforms are a very short-term solution.

Powerline activists could also begin to focus more strongly on the policy level of decision-making, attempting to move the system of centralized planning towards greater accountability to public participation in energy development issues, including a resolution of problems facing local jurisdictions in the siting of energy related facilities. For some regions of the country like the Northern Great Plains, there is no choice but to effectively and skillfully work in this arena if they are to avoid becoming an energy sacrifice area. In the long run a lot depends on which policies are pushed, and how thoroughly they can be made to restructure the inequities and misguided priorities vested in the system that produces and distributes energy in this country. Farmers in Minnesota know this only too well.

Any real restructuring of these inequities and misguided priorities will take more than law suits and legislation alone. As powerline activists are starting to understand, it will require long-term organizing and cross-coalition building, as well as the ability to draw these tactics down to a community/regional level. Perhaps more than any other social issue, the energy/resource nexus has helped us once again to hone in on the fact that our greatest potential for democracy exists in working for strong local and regional self-reliance. Decentralized energy technologies are emerging in the powerline campaigns as the spirit of hope to rural activists. They know intuitively that these tools can help to revitalize their lifestyle and communities.

What are needed now are ways to translate this hope into workable, region-specific strategies that can be used in all aspects of the political process, from direct action to court suits to demonstration projects. Regional "soft-path" studies that document how conservation/renewable energy can avoid more expansionism, and the integration of energy alternatives into the local distribution systems are some of the things that will point the way to the good economies of smaller scale.

Much of this article is based on articles by or conversations with Louise B. Young, Don Olson, Pat Smith, Marjane Ambler, Skip Laitner and Bill Boly—in addition to those already mentioned. Thanks also to *Sierra* and *Ruralamerica* magazines. —SA

A Partial Guide to Powerline Activists

Powerline groups are forming in dozens of regions across the country. The partial list below focuses on three areas of strongest activity. If you want to locate powerline activists in your area, try contacting a citizens' action/resource council or a local environmental group. If you want to make contact with other powerline groups, or learn how to better organize one, come to the National Conference at Lowry, Minnesota, in September.

Northern Great Plains

Powerline activists in the Northern Plains tend to be affiliated with their regional resource councils, who are involved in a range of energy development issues. For more information contact:

Northern Plains Resource Council (Jeanne Charter)

Stapleton Bldg.
Billings, MT 59101
406/248-1154

Dakota Resource Council (John Norton)

Box 254
Dickinson, ND 58601
701/227-1851

Powder River Basin Resource Council (Sarah Gorin)

724 South 4th St.
Douglas, WY 82633
307/358-5558

Northern Colorado Resource Council (Randy Morgan)

137 West College Ave., No. 14
Fort Collins, CO 80524
303/484-9462

Minnesota

There are numerous rural powerline groups in Minnesota which are now consolidated into the General Assembly to Stop the Powerlines (GASP). Farmers in Minnesota have also been strongly supported by the urban-based Powerline Taskforce, which is part of the Northern Sun Alliance. For more information contact:

GASP—General Assembly to Stop the Powerlines

Lowry Town Hall
Lowry, MN

The Powerline Taskforce/Northern Sun Alliance

1513 East Franklin Ave.
Minneapolis, MN 55404

Upstate New York

Powerline groups in New York are part of a loose network called the KV Alliance. Out-of-region inquiries for general information would best be sent to Upstate People for Safe Energy Technology (UPSET). For more information contact:

UPSET—Upstate People for Safe Energy Technology

Box 571
Canton, NY 13617

Citizens for Safe Power Transmission

Box 351
Red Hook, NY 12571

Lake Shore Alliance

c/o Bielemeier
General Delivery
Rosco, NY 14541



SOLAR SHINE-INS

By Lee Johnson

After successful events like Seabrook '78 and SUN Day, we deserve a bit of rest. But only a bit. For now that we've got the momentum started toward a sane energy policy, we should keep on plugging away and speed it up. 2000 A.D. is not that far away.

The only new thing I've been able to think of that we should do and one action I'd enjoy being a part of is a positive sitting-in at potential sites for wind, solar and biomass power plants across the nation. We'd camp there demanding that construction on them be started immediately, and then help the arriving workers with volunteer pick-and-shovel work and pleasantly ply them with iced tea, coffee and sandwiches during site preparation. Perhaps, as Steve Baer reminded us, we should start this at least on the Summer Solstice, which obviously has some real relation to any so-called "SUN Day" rather than on May 3, 1979. In any case, I envision a core group camping out at some quite scenic spots all summer, with larger and larger citizen turnout each weekend. Perhaps, at the wind power sites, we could even temporarily install a few small wind turbines in a symbolic wind-farm along a ridgetop and power some rock 'n roll or bluegrass bands singing pro-solar songs. Taj Majal, you hear me? Most wind sites have lovely vistas from hilltops or on large open plains. Solar power plant sites include interesting desert terrain. And biomass? Well, just pick any large dairy farm, cattle feed lot or lumber clearcut.

Among our goals at such encampments would be:

- getting *media coverage* at specific local sites that the public can identify and relate to as part of an immediate available solar energy option;
- giving *positive moral and political support* to government officials, politicians, engineers, businesses, labor unions, scientists and others pushing for rapid installation of renewable energy power plants;

- volunteering *physical labor* to construction workers, companies and government agencies charged with solar power plant construction;
- providing *on-site education* on the arguments for solar plants to visitors and the media.

Among the planning requirements I've thought of so far are:

1. *Distance*: Since you want to reach more than the core and weekenders, try to pick a site which is not only a potential solar site but also close enough to get television and other media coverage. Remember, this is largely symbolic, so don't get hung up in the academic cul-de-sac of feeling you must, in order to be real, be at *the* best site. Once the TV cameras are there you can show them on a map where there are many other even better sites!

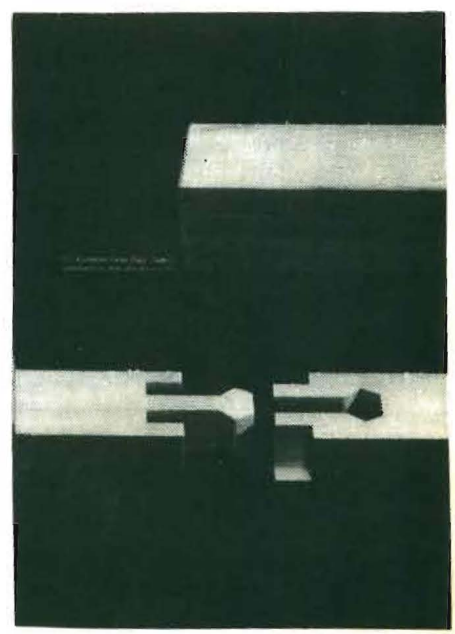
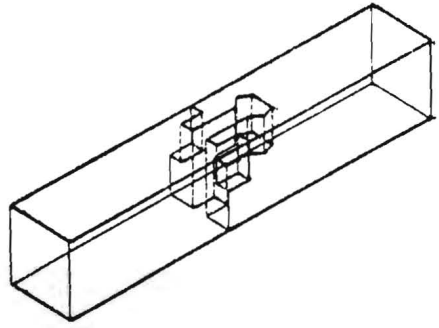
2. *Getting Permission*: On federal land this should be no problem, as no politician or government bureaucrat is going to want to be known for busting up such a uniquely positive demonstration of the "will of the people." It would be polite, however, for the campers to keep the relevant regional officials in, say, Region X DOE's Seattle office, the Bureau of Land Management, or U.S. Forest Service, informed so they can look good to their higher-ups and, hopefully, approving or feeling unthreatened by such peaceful camp-ins. Be sure to check with state and local officials as well. In all cases, get across that you are engaging in a positive, non-destructive, even helpful, trespass on *your* government property. On private land, be sure to inquire first with owner and post a bond, if necessary, to cover any unintended damage to fields or fences.

3. *Maps*: Provide maps for weekenders and media on the back of a terse one-pager on why you're doing this, some details about the solar energy potential of the site, what that means to the average citizen, how you expect people who arrive to behave, and what they should bring with them.

GOOD THINGS

The Art of Japanese Joinery, Kiyosi Seike, 1977, \$8.95 from:
John Weatherhill
149 Madison Ave.
New York, NY 10016

Ask and you shall be given! Reviewing a book on carpentry joints a couple of issues ago, we wished for one that showed them in more detail—how to make, their strengths and weaknesses, uses, etc. Our friend Gigi Coe sent us this in response—good photos and diagrams and explanations of 45 common Japanese joints. The first section on the genesis of Japanese joinery isn't particularly good, but the rest, on the joints themselves, is excellent. —TB



4. *Symbolism*: Try to get across *visually* various ideas about the kind of renewable energy technology you're demanding be installed. At a wind site which already has a recording anemometer, get the data from it and explain how much energy a large wind turbine could produce if sited there. Or actually represent the large wind generator by a smaller one, such as a 3 kw Jacobs, which could also provide electric power for lights and music. Another idea is to outline on the ground, with stakes and used-car lot banners, both the likely size of a large wind turbine's concrete pad or tower leg perimeter, and a side view section of the wind turbine so visitors and the media have something its scale to visualize. Similar ideas should be brainstormed for solar and biomass sites.

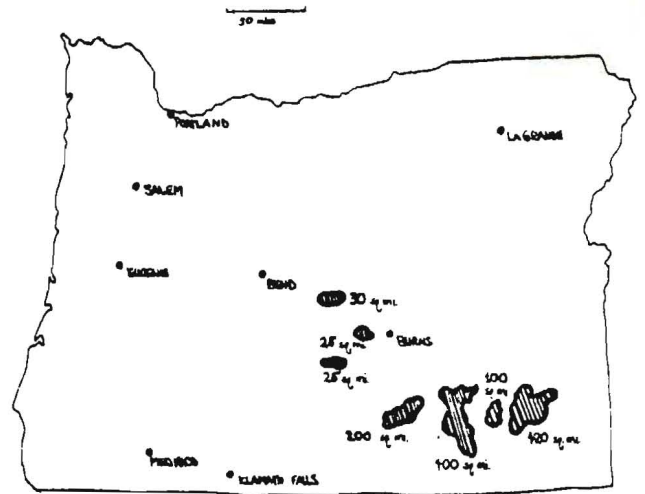
5. *Sanitation*: Make arrangements, as if you were starting a large outdoor family reunion that grows larger each weekend, for litter cans and porta-potties. If on government land and relations are good, the relevant agency can probably get it together on the picnic garbage cans. However, the porta-potties will most likely have to be rented by taking up a collection within the group.

6. *Endorsement*: If your group is pro-solar or -wind with no intention to rant vs. nuclear power, you can probably get the endorsement of respected technical and professional organizations whose co-sponsorship can lend credibility to your efforts, such as the International Solar Energy Society—American Section, or its regional or state sub-chapters, the American Wind Energy Association, or the Bio-Energy Council. Don't forget solar manufacturers and unions. And, of course, contact the Solar Lobby and the Center for Renewable Resources, SUN Day's follow-on organizations for help both in direct action strategy and planning, and technical assistance, respectively. Their address is:

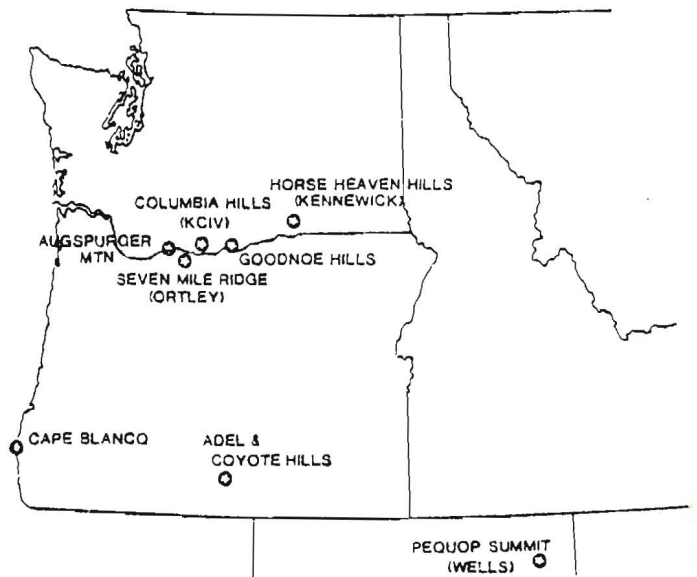
SUN Day
1028 Connecticut Ave., N.W.
Rm. 1100
Washington, DC 20036

Let me know of other things I've forgotten. Maybe the Solar Lobby can put together a "Solar Commissioning Alliance" manual with more details on how to do a solar construction site-in.

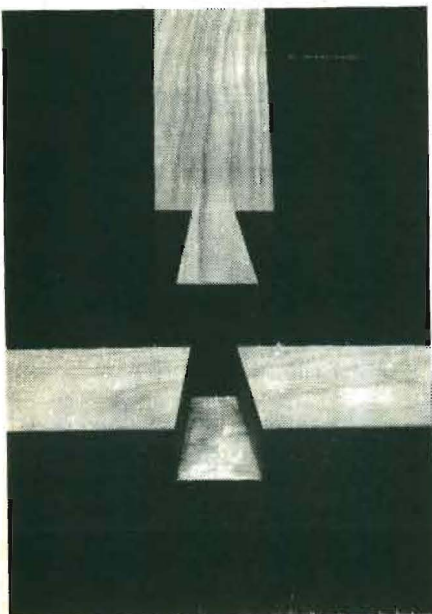
Well, what do you think? Could it work? Let me hear from you pessimists on this solar affirmative.



Prime potential Oregon solar electric power plant sites.



Prime potential WTG (wind turbine generator) development areas.



from *The Art of Japanese Joinery*

The Small Towns Book, James and Carolyn Robertson, 1978, \$5.95 from:
Anchor Books
245 Park Ave.
New York, NY 10017

Sometimes we all feel it is impossible to be Davids with so many Goliaths stomping around and on us. All it really takes to be a successful David is to get rightfully mad, hang on like a rat terrier, and have a little luck. This is a collection of stories about people in small communities that got tired of being pushed around by the big guys and took over for themselves. North Bonneville, WA, vs. the BPA; the inside story on Cerro Gordo; tax revolts in Mendocino. Encouraging. Go to it! —TB

Pioneering in the Urban Wilderness, Jim Stratton, 1977, \$7.95 from:
Urizen Books
66 W. Broadway
New York, NY 10002

One of the fantasies of the '50s—let government legislate and regulate our problems away—has predictably transformed itself into our present steamroller of bureaucratic controls and growth. Stratton's book is an urban sequel to Ken Kern's *Owner Builder and the Code* and provides a useful guide for getting space and surviving in the urban wilderness of New York and other crown jewels of modern civilization. A fascinating account of illegal but wise squatting by artists in commercial loft-space in Soho, and in other cities, and the process of renovating and living in a space where the physical problems are mere shadows of their bureaucratic parasites. —TB

ECONOMICS

The Community Reinvestment Act of 1977 is a landmark piece of legislation which should help anti-redlining/community reinvestment activists across the country. CRA requires that financial institutions service the credit needs, and be accountable to, the communities in which they are chartered. This can be an important tool in strengthening the neighborhoods and economies of low/moderate income communities which have often been undermined by their local financial institutions. Federal regulatory agencies are now required to encourage lenders to meet these obligations under the law. An effort is now underway to weaken the specific regulations of the CRA, but many community groups are still expected to mount legal challenges to negligent financial institutions. For more information or assistance in this area, community groups should contact:

Jeff Zinsmeyer
Center for Community Change
1000 Wisconsin Ave., N.W.
Washington, DC 20007

-SA

Women Taking Charge: New Ways to Economic Power, 1978, \$4.50 from:

Strongforce
2121 Decatur Place, N.W.,
Washington, DC 20008

This manual is an introduction to ideas and resources that can help women gain greater control over their money and jobs. It includes sections on the National Committee on Household Employment, Nine to Five, a clerical activist group; McCaysville Industries, a women's factory; an overview of feminist enterprises, women and credit unions and a resource guide. -JM

Investor Responsibility Research Center
1522 K Street, N.W.
Washington, DC 20005

An excellent spotlight on corporate activities and policies for investors. Provides information on shareholder resolutions on corporate social responsibility, accountability and governance. Publishes a series of reports on public policy questions affecting investors, such as U.S. business activity in South Africa; nuclear power; employment of former government officials; overseas corporate bribes, etc. Invaluable information for socially responsible investment of pension funds, university endowments, insurance funds, etc. Write for list of available publications and go talk to your local "public" investors. -TB

Minding the Corporate Conscience 1978: Public Interest Groups and Corporate Social Accountability, Steven Lydenberg, 1978, from:
Council on Economic Priorities
84 Fifth Ave.
New York, NY 10011

Public interest groups are coming of age in the 1970s and more than ever they are zeroing in on the energy/environment connection—particularly issues involving the electric utilities. This is one of the findings of *Minding the Corporate Conscience 1978*, a survey of major public interest groups who are directly or indirectly involved in watchdogging corporations. This directory profiles the activities and publications of 83 organizations and lists the contact addresses of some 60 others. Not entirely complete, but a very handy networking tool to have at your fingertips. -SA

As You Sow, Walter Goldschmidt, 1947, 1978, \$7.95 from:
Allanheld Osmun & Co.
19 Brunswick Rd.
Montclair, NJ 07042

The only detailed examination ever made of what corporate agriculture means for the character of life in American rural communities—a study sabotaged, harassed and suppressed and finally now reprinted. Implications of the impact of corporate operation on other economic spheres can easily be made. Important reading, now easily available. -TB

A Legal Handbook for Billboard Control, Environmental Law Society, 1976, from:
Stanford Law School
Stanford, CA 94305

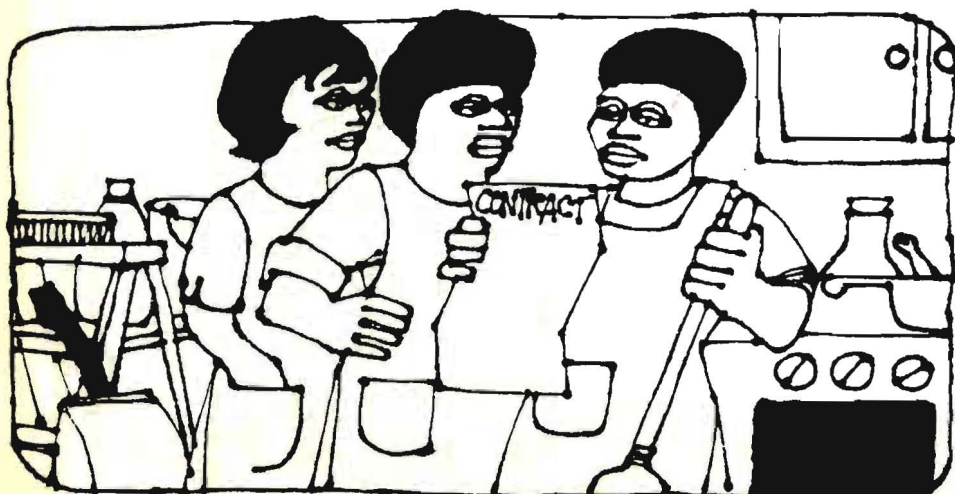
Considerable progress has already occurred in billboard control based solely on aesthetic or "nuisance" factors. This handbook outlines issues, arguments, existing legislation and case studies. Little attention has been paid so far to the economic and political impacts of such advertising—the destructive effects on local economies of eliminating existing small businesses that cannot afford such expensive advertising, their replacement by corporate operations that remove money from the community, the general discrimination against the majority of individuals and businesses that cannot afford the cost of presenting their views in similar ways, and the threat to any democratic society in the concentration of wealth and power resulting from such unequally available forms of "speech." The time is ripe for new local efforts for billboard elimination. These are the tools. -TB

ENERGY

World Information Service on Energy (WISE), first issue, May 1978, 16 pp., available from:

WISE
2e Weteringplantsoen 9
Amsterdam, HOLLAND

For next issue send info on working alternative energy systems. Main funding is via selling "Smiling Sun" buttons. Agents are needed in all countries and building up a trilingual staff of five is planned. Send resumes to John Lambert at the above address for either work. -LJ



from *Women Taking Charge*

Pacific Northwest Bio-Conversion Workshop, October 24-26, 1978. For pre-registration, call Linda Craig at 503/234-3361, ext. 5138 or write to: Bonneville Power Administration—SJ, Environmental Office, P.O. Box 3621, Portland, OR 97208.

The U.S. Department of Energy is sponsoring a workshop to examine the opportunities for converting bio-mass to energy in the Pacific Northwest. The workshop will be held in Portland, Oregon on October 24, 25 and 26, 1978. The workshop will focus on near-term potential for bio-mass conversion to energy in the Pacific Northwest. Bio-mass is considered to be plant matter, including wood and wood residues, agricultural residues, and livestock residues.

The workshop will have five major sessions. First, the workshop will examine existing bio-energy applications in the region; second, there will be a closer review of the region's existing resource base in both wood and agricultural potential; the third major session will explore possible near-term applications in the Pacific Northwest; the fourth session will address barriers, constraints and possible solutions to matching the potential resource to the potential application; and the fifth session will discuss actions that can be taken to begin the expanded use of the identified resource.

Speakers will include individuals and groups from large and small industry, the commercial sector, appropriate technologists, agricultural interests, forest and silviculture experts, and bio-conversion liquid and gaseous fuels experts.

The Solar, Geothermal, Electric and Storage Systems Program Summary Document, Fiscal Year 1979, March 1978, DOE/ET 0041 (78), 425 pp., free from:

**U.S. Dept. of Energy
Asst. Sec'y. for Energy Technology
Division of Solar Technology
Washington, DC 20545**

This is the real meat and every pro-solar American, from layperson to research scientist, should have it on their desk. Covering all solar technologies, plus microhydro, load management, fuel cells, high voltage transmission and the environmental effects of all, this is a primer to end all primers (until next year's revision, of course) on what the federal government is doing. Full solar graphics, cost charts and timetables, it should be extremely useful to all solar, wind, wood and water energy periodicals. Fastest and cheapest way to get it is to send a note to your congressional representative and senator requesting they have DOE send you one. This

incredible plethora of info can make one an instant solar expert and should be used in college-level courses touching on energy. —LJ

HEALTH

Zen Shiatsu: How to Harmonize Yin and Yang for Better Health, Shizuto Masunaga with Wataru Ohashi, 1977, \$7.95, from:

**Japan Publications, Inc.
200 Clearbrook Rd.
Elmsford, NY 10523**

It's exciting to see important books on non-western health care becoming available to the general public. A central concept in oriental medicine is *Ki*—energy that flows through a network of body meridians, often in underactive/*yin* or overactive/*yang* states. *Zen Shiatsu* is the first English language book to cover a full therapy system for restoring balance to the *Ki* meridians, thereby stimulating the body's capacity to self-heal. It covers the basic theory and technique, and offers well-illustrated discussions of whole-body shiatsu massage, self-shiatsu and treatments for specific diseases. An excellent companion to *Tsubo* (RAIN, April 1978). —SA

Sweat, Mikkel Aaland, 1978, \$7.95 from:

**Capra Press
631 State Street
Santa Barbara, CA 93101**

Some nice roses—fascinating explorations of bathing practices in many cultures—among the thorns of shuck and jive promoting another new consumption fad—sauna or sweat bathing. Vis-

ions of Islamic hammams, Greek and Roman baths, saunas in Scandinavia and Japan, Russian baths, birth and death in the sauna, spiritual attitudes towards bathing. Fine, and needed as balance to our san-i-shower culture. But we don't need the pseudo-research that blindly glorifies the sauna (or any other kind of bathing). The virtues of sweating are extolled, but no mention that something as simple as physical work can provide it. Saunas are praised for their "negative ions"—but no mention made that showers provide an even more favorable ionic climate. —TB

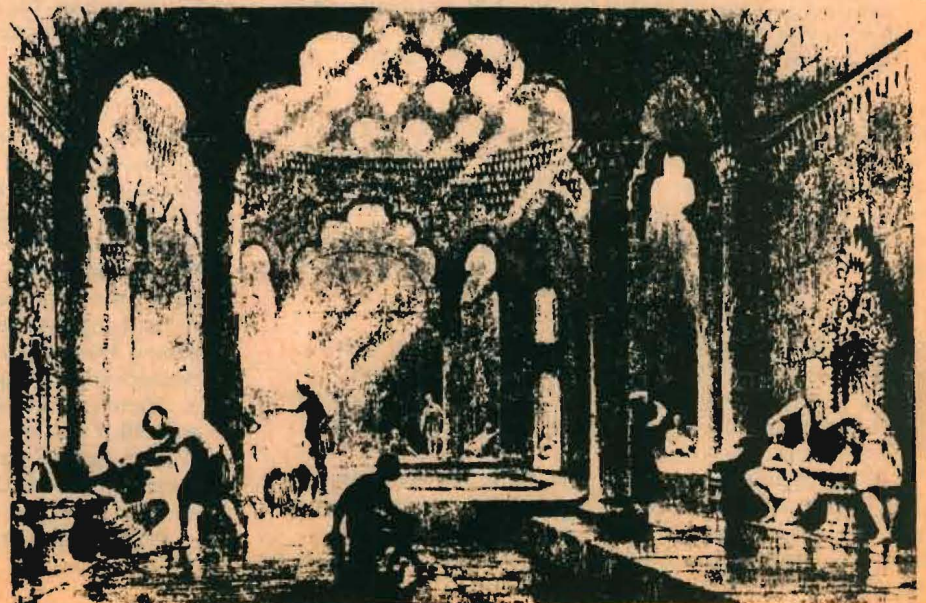
FORESTRY

Timber Harvest Levels for National Forests—How Good Are They?, CED-78-15, U.S. General Accounting Office, Jan. 24, 1978, free to members of Congress, Congressional committee staff members, officials of federal, state and local governments, members of the press, college libraries, faculty members and students, and non-profit organizations. \$1 for taxpayers and anyone else, from:

**U.S. General Accounting Office
Distribution Section, Room 4522
441 G Street, N.W.
Washington, DC 20548**

A GAO review of forest management practices that concludes that Forest Service timber management plans lacked enough uniformity and precision to be reliable and prevent overcutting and lacked coordination with other forest resource uses. —TB

continued next page



from Sweat

Forestry entries continued

Energy Self-Sufficiency Prospects for the British Columbia Forest Products Industry, R. S. Evans, 1977, from:Western Forest Products Laboratory
Vancouver, B.C.
Canada V6T 1X2

The B.C. forest-products industry currently consumes 23 percent of all the natural gas used in that province. This concise report outlines how most of the industry could become completely independent of natural gas by the on-site utilization of its own surplus unused wood and bark residues, with a net gain in several areas large enough to sustain small, thermal-electric generating stations for local or regional energy needs. Valuable natural gas could then be diverted to more useful markets or conserved for future needs. The Evans study also cites the improved technologies that are available for recovery of wood wastes, including wood gasification. Good data for regional self-reliance strategies and the economic advantages in opting for renewable energy sources. (Thanks to J. R. de Weese) —SA

Slocan Valley Community Forest Management Project, \$13 from:Slocan Valley Resource Society
Box 81
Winlaw, BC V0G 2J0 CANADA

Not your usual forestry report calling for more and faster clearcutting—this report was prepared by a citizen's group living in a typical western area where forestry is the main livelihood and is controlled by outside interests with a "locals be damned" policy of exploiting the resources. The report recommends forestry practices that support a sustainable local economy, include residents in decision-making, demand implementation of sustained-yield recommendations ignored by Provincial forestry units to the advantage of logging companies, setting up of rural woodlots, an end to underpricing of cedar and other woods for export to the U.S., more local manufacture of finished wood products, etc. Valuable to any citizen's groups trying to deal with private or government timber "overlords." —TB

The Other Face of 2,4-D, Jay Lewis and John W. Warnock, an ongoing series in: *Acres, U.S.A.: A Voice for Eco-Agriculture* (60¢ per issue, \$6.00/year)10227 E. 61st St.
Raytown, MO 64133

Acres, U.S.A. continues to impress us with their outspoken advocacy of ecologically sound agriculture and monitoring of environmental toxins. In April they began an ongoing series on the hazards of 2,4-D, a phenoxy herbicide related to the chemicals used in the forestry industry (see *RAIN*, May 1978). Based on a definitive study prepared by a team of Canadians, *The Other Face of 2,4-D* is a thorough investigation of the potential health hazards of phenoxyes, including their carcinogenic and mutagenic properties. Solid information for people becoming involved in the fight against chemical-intensive land-management practices and the promotion of the organic, labor-intensive alternatives. —SA

WOOD HEATING NEWS

by Bill Day

The brilliant spotlight placed on chimney maintenance has created increased demand for the required tools. Clean chimneys are necessary for safe operation of wood or coal fired appliances. Soot deposits on the interior walls of your stove's firebox may decrease the heat output by 30 percent or more.

Chimney cleaning tools are readily available in reputable wood stove outlets. Kristia Associates has expanded the selection of their top quality chimney brush (Eva's Chimney Brushes). Worcester Brush Co. and Ace Brush Co. have expanded their production of good serviceable brushes and cleaning accessories. Information about nearby dealers or distributors can be obtained by writing:

Worcester Brush Co., Worcester, MA 01601

Kristia Associates, 213 Ash St., No. 209, Portland, OR 97205, or P.O. Box 1118, Portland, ME 04104

Ace Brush Co., 30 Henry St., Brooklyn, NY 11201

* * *

Washington Stove Works has begun a new era. Recently, two new efficiency-oriented stoves have been added to their product assortment. The new "airtight Arctic 30" box heater utilizes a Scandinavian style horizontal interior baffle plate. Their new "Crest" offers the advantages of an open fireplace decor with the option of use as a high-efficiency space heater.

* * *

Copies of Scandinavian stoves have proved to be of much worse quality than was previously reported. One group, "Fjord" from Taiwan, incorporates nearly every mistake one could make in producing a cast iron stove. The deficiencies I've noticed are:

(a) The castings are poured from low-grade iron derived from melting scrap without using a proper percentage of pig iron. The resulting castings tend to be porous and quite brittle. The former can include pinholes that allow air to pass completely through thin but solid-looking sidewalls, tops or bottoms.

(b) Lack of quality control has allowed misshapen castings to be assembled in finished stoves. The resulting wide gaps allow uncontrolled amounts of air to enter the firebox. This reduces burning efficiency and creates localized overheating via the "blowtorch effect" which accelerates the deterioration of the stove body.

(c) "Out of register" castings have resulted from lack of sand mold alignment. This creates thick and thin spots, or sometimes holes the size of a half dollar in the sides of the finished products.

(d) These Fjords have been assembled without furnace cement in the joints or seams. After assembly, the cement was smeared over the seams to improve the stove appearance.

If one likes the efficiency, quality or appearance of a Scandinavian stove, I would suggest buying the original instead of a sloppy copy.

* * *

Vermont has become the first state to ban the use of "air siphon—triple wall" prefabricated chimneys for wood stove installations. Instead of containing the heat inside the flue, these chimneys cool the exhaust gases, causing excessive amounts of creosote to be deposited inside the chimney. Clogged chimneys, frequent chimney fires, and an increased need for maintenance are a direct result of using these products. I suggest using chimneys marketed under these brand names: Pro-Jet, Hart and Cooley, Metalbestos, or any other double-wall solid-pack insulated chimney.

There are two reasons why these "air-insulation" chimneys are sold. First, the superior and safer solid-insulation chimney is often hard to get because of the high and rising consumer demand. Second, the profit margin all the way from manufacturer to retailer is higher on the lower quality chimneys.

Perhaps the rest of the nation should follow Vermont's lead.

NUCLEAR

The flow of information supporting the contention that nuclear power is stupid in all sorts of ways is continuing to broaden and deepen. The best recent items are:

Energy Alternatives Cheaper than Coal & Nuclear Power, by Dr. W. R. Z. Willey, March 1978, 75¢ for 15 pp. summary, \$10 for full report from:

Environmental Defense Fund
2728 Durant Ave.
Berkeley, CA 94704

Analysis shows that Pacific Gas & Electric Co. (PG&E) could use proven alternative energy sources (conservation, cogeneration, on-site solar heating, wind, geothermal) to replace 9 of 10 new coal and nuclear power plants it now plans to build, and the shift would provide nearly \$500,000 more in revenues. This would result in the same amount of energy, at the same reliability, with better economic results for the utility, its stockholders, its customers and for the taxpayers as well. The study was submitted to the Calif. Public Utilities Commission in hearings on PG&E's latest request for a rate increase. Most useful to citizens working against rate increases and anti-nuclear intervenors.

Nuclear Plant Performance Update 2: Data through Dec. 1977, by Charles Komanoff, June 1978, inquire as to price from:

Komanoff Energy Associates
475 Park Ave. South
New York, NY 10016

This is the author's 3rd annual analysis of nuclear power plant operating reliability, and concludes that, since boiling water reactors (BWRs) of 1150 megawatt size have average capacity factors of 50 percent and 1150 mw pressurized water reactors (PWRs) average 59 percent, new, large nuclear plants are less economical than new medium-sized coal-fired plants anywhere in use, except the northeastern U.S., where PWRs may be competitive with coal. Extremely useful to anti-nuclear groups for both legal intervention and public education. —LJ

An Analysis of Federal Incentives Used to Stimulate Energy Production, PNL-2410, UC-59, March 1978, free from:
Division of Conservation & Solar Applications
U.S. Dept. of Energy
Washington, DC 20545

For the first time, we now have documentation that the abortive nuclear cul-de-sac has cost us \$15 to \$17 billion

over the last 30 years in *known* government aid via R&D, the cost of civilian reactor safety regulation, and the investment in enrichment plants. The total costs of incentives to the nuclear industry do not include the cost of the Price-Anderson Act and federal uranium policies as "no way was found to quantify them." Useful in persuading anyone that nuclear power has not been "too cheap to meter." —LJ

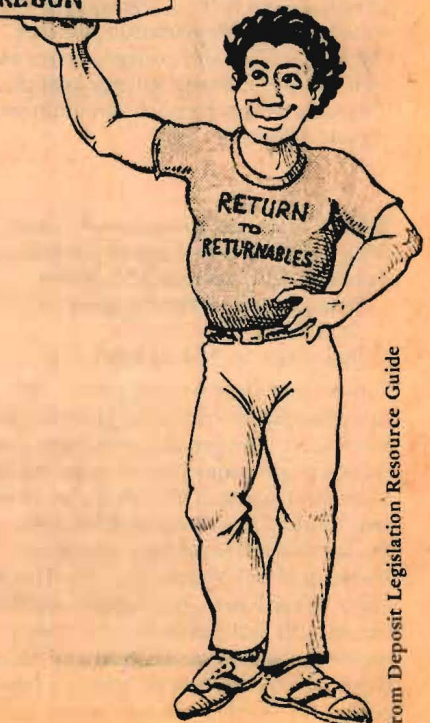
Nuclear Power Costs, the House Environment, Energy and Natural Resources Subcommittee, Leo J. Ryan, Chairman. (Submitted to the 95th Congress by the Committee on Government Operations, April 26, 1978), free

Already out of print and hard to locate; write to House Gov't. Operations Cttee, 2157 Rayburn Bldg., Washington, DC 20515, and strongly urge that they make more available.

Someone in the Congress has taken the bold step to lay the numbers out on the table: *nuclear power is an economic fiasco* if we consider the long-term costs of safely disposing of radioactive wastes and decommissioning 35-year-old wasted plants, or the short-term rise in capital construction costs, soaring uranium prices, tendency of nukes to perform less than reliably, and the fact that the utilities have been overbuilding their generating capacity far in excess of demand. This report recommends a California-style moratorium on nuclear construction, immediate attention to the thorny waste disposal problem and an end to such hidden subsidies to the nuclear industry as the Price-Anderson Act, while noting that solar and conservation are the logical, economic alternative to nukes. Here it is, in one concise report, looking terribly official. A must for any energy activist. —SA

Deposit Legislation Resource Guide, 1978, \$1.00 from:
National Clearinghouse on Deposit Legislation
Environmental Action Foundation
724 Dupont Circle Building
Washington, DC 20036

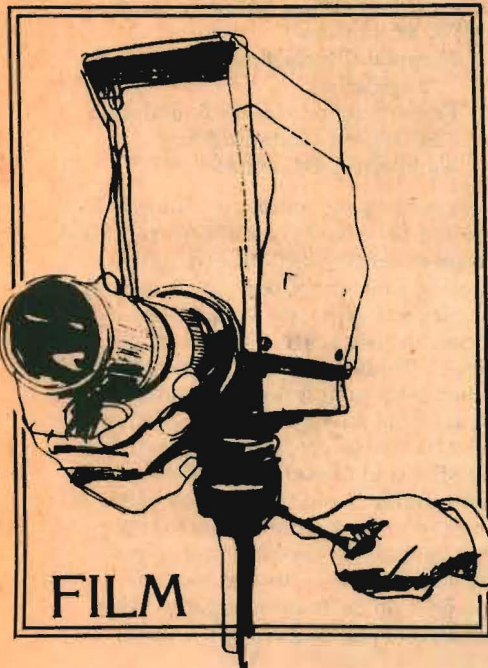
This is the most complete bibliography around for citizens' coalitions working to pass "bottle bills" in their states, putting a minimum deposit on beverage bottles and cans. It covers deposit legislation already enacted in several states, reports from states gearing up to do the same, sources of information on all the issues from saving energy to creating jobs, as well as on campaigns, coalition-building and media skills. All sources are annotated and many are available at little or no cost from EAF. Delaware just became the seventh state to pass legislation, and a national bill is dependent on more state victories. This guide will help us get there. (Thanks to Diane MacEachern) —SA



RECYCLING

Compost Science; Journal of Waste Recycling, \$15/year, bimonthly, from:
Box 351
Emmaus, PA 18049

More and more towns and cities are being pushed against the wall by their sewage problems and are being forced to look beyond the over-expensive and simplistic mechanical systems of recent years. *Compost Science* is probably the best single resource for alternatives—for on-site treatment systems, compost toilets, municipal composting and alternative collection and land utilization processes. —TB



Soft Energy Paths—Toward a Durable Peace, 70-minute videotape on two 3/4" video cassettes, June 1978, available for reproduction at no charge for anyone submitting blank videotape or tapes from:

Gail Penman
Oregon Legislative Media Systems
Oregon State Legislature
Salem, OR 97310

A videotape of Amory Lovins making a presentation summarizing his book and recent thoughts on the "soft energy path" before a state legislature committee and an audience of about 150 people. I was there . . . it was his usual excellent, wry explanation; perfect for high school and college classes as well as local citizens' energy groups, anti-nuclear intervenors, decommissioners and alliances. —LJ

Build Your Own Greenhouse—Solar Style, 16mm, color/sound, 21 min., purchase \$315, rental \$55, from:

Danamar Film Productions
275 Kilby
Los Alamos, NM 87544

Build Your Own Greenhouse is the documentation of a solar greenhouse workshop. The general principles and building techniques are shown and the benefits discussed. The film comes with two books: *The Food and Heat Producing Solar Greenhouse*, by Rick Fisher and Bill Yanda, and *An Attached Solar Greenhouse*, in English and Spanish, by Bill and Susan Yanda. This movie is a nice introduction and effective spark to interest people in a low-cost and effective solar structure on a local level. —JM

Living the Good Life with Helen and Scott Nearing, 30 minutes, color, 1976, sale \$375, rental \$30 from:

Bullfrog Films
Oley, PA 19547

During the Depression, Helen and Scott Nearing moved to Vermont and more recently to Maine, each time building their own home by hand, growing their own food, providing their own heat, as well as continuing with their own professions. Scott is an economist and social critic and Helen is a concert violinist. *Living the Good Life* reflects their belief in the value of hard work, self-subsistence and a healthy, natural environment. The Nearings have created a "good life" for themselves where their activities are inherently satisfying and contribute to the general good of the earth. This film shows the actualization of their values, the environment they have created for themselves and the people they are. A good example of lifestyle and economic alternatives. —JM

More Nuclear Power Stations, by Per Mannstaedt, photography by Teit Jorgensen for Flip Film Productions, 1975, 55 minutes, color, rentals from:

Green Mountain Post Films
P.O. Box 177
Montague, MA 01351
413/863-4754

This film's astounding visual impact is a result of its absolute realism. A Danish film crew has gained entrance into several nuclear facilities in Western Europe and Britain. What follows is a step-by-step documentary of the activities involved in the nuclear fuel cycle, from plant operation to waste treatment and disposal. In singularly straightforward photography and carefully objective commentary the technology is allowed to speak for itself in vivid detail. The message is startling. Nuclear power is more than a complex technology requiring vigilant control: it is the height of contorted values—the bending of nature to the threat of our own extinction. This film should be seen by people everywhere—community groups, labor unions and students. However, I strongly recommend presenting it along with a talk or film that stresses the positive energy options available to us that are infinitely renewable and life-affirming. —SA

Movie Advertising

Tired of paying to see a movie only to have to sit through advertisement for junk food, auto dealers, beer, etc., and then through "featurettes" on how wonderful the U.S. Army is (it's pure advertising, folks) before you can see

what you paid for? The Federal Trade Commission has the power to require theaters to tell you if they show advertising. If you want them to do so, write: Federal Trade Commission, Seventh and Pennsylvania Aves., Washington, DC 20580. —TB

PLAY

Ways to Play: Recreation Alternatives, edited by James McCullagh, 1978, 320 pp., \$6.95 from:

Rodale Press
33 E. Minor St.
Emmaus, PA 18049

A vibrant book about ways in which people and their communities can take hold of recreation. Tells how children and adults can participate in each others' games, and describes direct involvement in the construction of neighborhood parks, playgrounds and other open space, as well as discovering and building local trails. Includes many first-person accounts from people who have invented alternative, non-competitive play à la "New Games."

As someone who's already experienced the fun of creating a neighborhood playground in southeast Portland and of "beating swords into playshares" by putting a Flint and Walling water-pumping windmill atop a destroyer escort mast, it seems a very useful next book would be one focusing on how to do such a project, complete with models and case studies from towns around America, covering from acquiring land and volunteer labor to the use of local materials and super-graphics. How about it, Jim? —LJ



from Ways to Play

EVENTS

The Vancouver Women's Film and Video Festival 1978 will be held on September 22, 23 and 24 at Mt. Pleasant Community Centre, 3161 Ontario Street, Vancouver, BC. Programs of both film and video productions will be shown throughout the three days of the festival. There will be panels and discussion groups for exchange between women and Media workers. You are asked to pre-register. For more information contact, Women in Focus, No. 6-45 Kingsway, Vancouver, BC V5T 3H7, 604/872-2250.

The 2nd Annual Port Townsend Wooden Boat Festival will be held Sept. 15, 16 & 17, and the 1st Annual Port Townsend Symposium on Wooden Boat Building will be held Sept. 10-15. Registration for the festival is \$15 per person. Tuition for the symposium is \$125 and is limited to 250 people. To pre-register or for more information, contact: Port Townsend Wooden Boat Foundation, Port Townsend, WA 98369, 206/385-3628.

Common Ground Country Fair 78 will be held Sept. 22-24 at the Litchfield Fairgrounds in Litchfield, Maine. Sponsored by the Maine Organic Farmers and Gardeners Association to re-awaken the spirit of the country fair, making it once again a vital part of rural life. For more information contact: Maine Organic Farmers & Gardeners Association, Box 187, 110 Water Street, Hallowell, ME 04347, 207/622-3118.

A Northeast Regional Appropriate Technology Forum, sponsored by the National Science Foundation and the School of Business Administration, University of Massachusetts, Amherst, MA 01002, will be held Oct. 14. For more information contact Robert Kahn at the school.

Critical Mass '78, the third national gathering of the citizen's movement for safe and efficient energy, will be held October 6-8 in Washington, DC. Citizens from all over the country will meet to exchange information, skills and tactics through workshops, displays and speakers covering a wide range of anti-nuclear and of pro-alternative energy topics. For more information, contact Susan Gluss, Conference Coordinator, Critical Mass '78, P.O. Box 1538, Washington, DC 20013. Phone 202/546-4790.

The Second National Conference on Standards for Solar Energy Use will be held September 13-15 at the Roosevelt Hotel in New York City. The purpose of the conference is to emphasize the development and use of standards for the materials, products and services that are necessary for bringing the benefits of solar energy to the national economy and standard of living. The registration fee is \$100; \$90 if you register early. It should be sent to: ASTM, Second National Conference on Standards for Solar Energy Use, 1916 Race Street, Philadelphia, PA 19103.

San Diego's Community Video Center is presenting the National Conference on Public Access Cable Television at the El Cortez Hotel, San Diego on August 25-27. Local and national policy makers and industry leaders will meet with local cable programmers and representatives of community organizations to discuss the relationship of communications technology to local communities. Some issues to be considered are directions of public policy, experiments: past and present, and educational and institutional uses. There is a \$30 conference registration fee. For more information contact: Community Video Center, National Conference on Public Access Cable Television, 520 "E" St., Suite 901, San Diego, CA 92101, 714/239-3393.

"Lifelong Learning in the 1980s" will be the theme for the Eighth National Free University Conference, to be held Oct. 20-22, 1978, in Kansas City, Missouri. Conference topics will include the future of lifelong learning, spreading community-based community education, and workshops in practical matters such as funding, publicity, new course ideas and others. For more information contact: Free University Network, 1221 Thurston, Manhattan, Kansas 66502, 913/532-5866.

Kerista Village, a San Francisco-based democratic intentional community is sponsoring a West Coast Communities Conference, August 22-28. Particular emphasis will be put on sharing information on community software: group process, interpersonal relationships, etc. The conference will start in San Francisco and move to Hardin Hot Springs. Registration is \$45 including everything but bed and board in San Francisco. For more information contact: Kerista, P.O. Box 1174, San Francisco, CA 94101, 415/566-6502.

Aprovecho ("to make the best use of") Institute, 359 Polk St., Eugene, OR 97402, is sponsoring a workshop on building fuel-conserving mud stoves, September 15-17. Registration is \$25, \$15 living lightly. For more information contact Ianto Evans at the Institute, 503/345-5981.

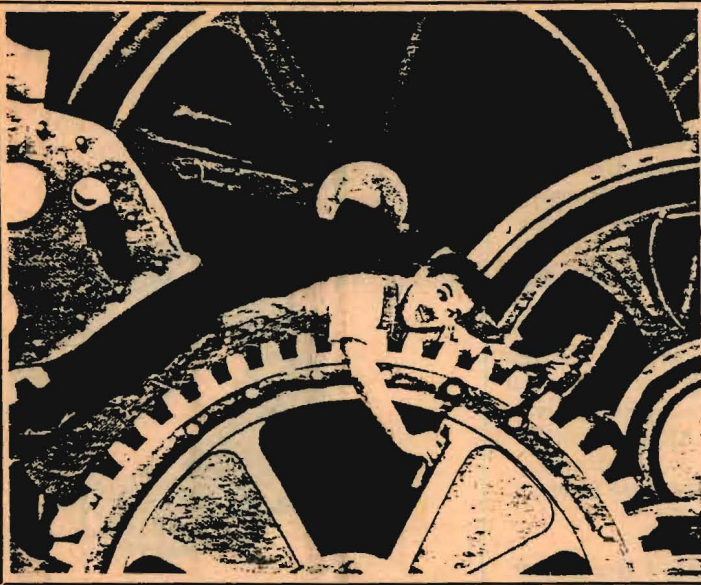


JOBS

The Siuslaw Rural Health Center is looking for a nurse or other medical assistant and an office coordinator to join a collective of nine health workers in a small, community-owned clinic. They need someone with experience in alternative business, consensus type groups, communities and/or health care. If interested send your name, address and some information about yourself to: Siuslaw Rural Health Center, Tide Route, Swiss-home, OR 97408, 503/268-4433.

EARS, Environmental Action Reprint Service, is seeking full-time staffpeople to take over the coordination of EARS. The work to be done includes routine office correspondence, mailing list work, purchasing for the EARS Catalogs, testing and evaluating advertising, preparing bulk mailings, shipping and receiving the items in EARS Catalogs, etc. Interested people should send a resume and a letter outlining why you would like to work with EARS to: EARS, 2239 East Colfax, Denver, CO 80206.

The Alternative Energy Resources Organization (AERO) is in dire need of an Office Manager/Administrator. Our projects are threatening to overwhelm us! Pay will start at \$400/month. It will rise—if the person is really good—to \$450/month. We need someone who is orderly, energetic, flexible, has a sense of responsibility and a sense of humor, and has—if not some knowledge of renewable energies, at least the inclination to learn about them and to use them. Contact Kye Cochran or Ron Pogue, 435 Stapleton Building, Billings, MT 59101, 406/259-1958.



As you can see from the numbers on *RAIN*'s finances over the last year, the magazine is not yet self-supporting. Subsidies from a grant the first year, unpaid staff time, and more recently income from publications that *RAIN* did not pay to have produced have kept us afloat over these four years. Our present financial situation is more serious than the numbers here show. We started the year with a cash balance of \$5,612—due largely to a royalty advance on *Rainbook*. That has vanished rapidly. Over the last six months our income has fallen short of our expenses by an average of \$240 per month, due largely to lower income from publications as the first flush of *Rainbook* sales tapered off and other publications became more dated.

We hoped last year to make a big push to increase *RAIN*'s subscription base, feeling that we fell far short of reaching people who could use *RAIN* well. Unexpected personal losses have kept us from having the extra time needed to get that rolling. But most important, we haven't been able to figure out how to do it. We don't want to go the typical route of mass mailings, advertisements and media promotion. From what we've seen of other publications, it just makes you run faster on the treadmill—more subscribers, more income, more expenses, and more attention focused on the treadmill than where we're going. Almost all magazines are a borderline operation. Circulation base doesn't seem to matter—almost all the income from a bigger circulation goes to pay the promotion budget, and we don't intend to become a shill for an ad agency.

We, like most magazines, have tried most everything we know—sample mailings, promotion at conferences, standing on our heads—you name it! Few things have a noticeable effect. The best are:

- 1) Reviews of *RAIN* in other magazines, etc., by people who value what we're doing.
- 2) Reviews in other magazines of special publications we do which result in both publication sales and subscriptions (this feels like the most honest "promotion" we know—getting on with our work and letting that bring in support!)
- 3) *RAIN* readers turning other people on to us. Not so strongly, ads don't do much—no one (rightfully) trusts them, and you can't tell snakeoil from holy water in an ad.

HELP!

At our present circulation, it now costs us \$1.40 per issue per paid subscriber to do the magazine. There's not much fat in that budget. The *total* for salaries paid to the six of us over the year equals \$16,800, just about one average all-American income. And presumably we don't have to tell you about inflation and postage and all that.

We can't afford to subsidize the magazine any further ourselves. It will have to become self-supporting over the next five or six months or go the way of all good memories. Which may not be bad—it may have served its purpose, we may better be freed to do other things, and the new regional newsletters may be a satisfactory replacement. It's up to you.

What we'd like most is your help in figuring out how to reach more people with *RAIN* and to figure out and share more appropriate ways for magazines such as ours to find and reach your audience. Who do you know that would know "appropriate" ways to proceed? What other networks could we be useful to? What could you do to connect us up with new people? We dream of getting our circulation up to about 10,000—not a big dream, but one that would allow us to continue to explore and share some exciting new paths with you that we're trying to sniff out.

With this issue we're raising the subscription price of *RAIN* to \$15 for one year (\$7.50 if you're living lightly). People have been urging us to do it for a couple of years, and we just can't afford any longer not to, as you will see below. We hope you value us enough to stay with us. If you subscribe, or renew, or get someone else to subscribe before November 1, we'll honor the old rates of \$10/year (\$5 if living lightly).

Assets at beginning of year	\$5612
Assets at end of year	2050
Current paid subscribers	2268
Exchanges	470
Average number of magazines sold through bookstores each month	305
Estimated current circulation	\$3043

FINANCIAL STATEMENT—THE RAIN UMBRELLA, INC.
JULY 1977 through JUNE 1978

Income:

Subscription	\$24,608
Other Publications	11,166
Bookstores	2,459
Donations	422
Rainbook Royalties	2,431
Postage and Billing	585
Interest	133
Misc.	40

Total Income \$41,844

Expenses:

Magazine	
Printing ¹	5,547
Typesetting ²	1,824
Mailing	840
Promotion	388
Total	8,599
Other Publications	
Rainbook	4,562
Ecotopia Posters	473
Woodstove Guide	442
Sharing Smaller Pies	475
Environmental Primer	237
A.T. Source Lists	78
Total	6,267
Office	
Rent ³	2,700
Utilities	829
Phone	1,968
Postage ⁴	2,782
Supplies ⁵	1,777
Misc. ⁶	222
Total	10,278
Salaries ⁷	14,681
Taxes	2,157
Payments to other people ⁸	1,134

Total Expenses \$43,116

Deficit: [\$1,272]

- Ten issues with an average press run of 5,000. The exception was November, when we printed 10,000, 5,000 of which were paid for by Cal. OAT. (\$403.54).
- This also includes headlines, photographs and PMTs.
- \$225 a month.
- Approximately \$520/year was envelopes and postage for foreign subscribers.
- Supplies included:

file cabinets	\$200
light table	195
typewriter	195
typewriter rental	175
- Misc. includes subscription to the local paper, Publisher's Weekly, projector rental, service charges, gifts and lunches.
- Salaries remain \$100/week, \$400/month.
- These payments include magazine entries (\$5 each), articles (\$20/page), workshops and consulting, and trip expenses. Payments to magazine contributors have ended because of our present financial condition.

Kinsey, Photographer, A Half Century of Negatives by Darius and Tabitha May Kinsey, by Dave Bohn and Rodolfo Petschek, 1978, 320 pp., \$19.95 softcover, from:

Chronicle Books
 Prism Editions
 870 Market St.
 San Francisco, CA 94102

Our friend Glen Simmons says the changes brought about by abusive forestry practices and improper land-use in the Pacific Northwest are happening faster than those that eventually denuded much of the cradle of civilization. This amazing collection of early photography by the Kinseys is a reminder of how far we've come in a short half century: the settling and logging of a land of giant trees and mountains of cascading water. In one sense, these photographs are anything but nostalgic. One can see the same attitudes we detest today in action back then. We were just as violent with the land—only we had to work harder at it. Pictures of boom towns and clearcuts make us feel no romance for the past, but rather impart a clear understanding of what has occurred. On another level, there is something profound to admire in these pages. Everything looks intensely real: from the directness with which these strong, determined people stare back at us over time to the immensity of their accomplishments documented here. An inevitable question arises: how would these people react if they could see their homeland today? *Kinsey, Photographer* is a book of great quality and depth. The softcover version is much more affordable than the original limited hardcover version. To help us learn about Ecotopia's roots, and where we might be going, this is a wonderfully useful book. —SA/JM

Old photographs are important in giving continuity to our sense of place. Unfortunately, not everyone realizes their value. It was only several years ago that a friend in the community where I grew up rescued several hundred glass negatives that were being hauled to the dump by people unaware of their worth. Museums, libraries and historical societies can be contacted if you know of collections of negatives that are not being cared for or are not wanted. It is important that they be restored and stored properly before they deteriorate. Also, if anyone is aware of any published information on the care and use of glass negatives, I would appreciate knowing about it. Thanks. —JM



from *Kinsey, Photographer*

FOOD

Chemical Cuisine Poster, \$1.75 from:
Center for Science in the Public Interest
 1775 S Street, N.W.
 Washington, DC 20009

Do you have a sinking feeling every time you go into the stupor-market and have to choose which additive-poisons you will risk this time? Help is here. Get this poster, take it with you, and try to get your grocer to order some to put up in the store for other shoppers. Color coded for safe, questionable and dangerous additives. Thank you, CSPI! —TB

Eater's Digest, Michael Jacobson, \$2.95 from:
Center for Science in the Public Interest
 1775 S Street, N.W.
 Washington, DC 20009

If you want more details on what the different additives are, why they are harmful and what sorts of deceit they are being used for, also order a copy of the updated *Eater's Digest*. It has a particularly interesting section in the back on "standard" foods that aren't required to list contents on their labels:

"Every friend or foe of frankfurters ought to take a tour through a local packinghouse, if they will let you in. My visit to a large Virginia packinghouse was a real eye-opener. The meat that went into hot dogs (and bologna) consisted entirely of fat trimmed from hams and chops; the only red meat was bits that were accidentally attached to large pieces of fat. The low protein content of such meat is often boosted slightly by the addition of dry milk or soy flour. After the ingredients were pulverized and emulsified, the mixture of fat, water, protein and additives had the color of bread dough and the consistency of mud. The emulsion was then

packed into a casing, which was coated with a brilliant red artificial coloring, and cooked. The light tan mixture darkened during cooking due to the heat and to the action of sodium nitrate and nitrite. In addition, the red dye on the casing colored the surface of the frankfurter. Additives like sodium erythroate, sodium ascorbate, and sodium acid pyrophosphate sped up the development of color. A visit to their local frankfurter factory will cure most persons of their hot dog habit."

Then you will be all set to order your hot dogs (56 percent water), ice cream (50 percent air), or Chicken Noodle Cup-o-Soup (less chicken than salt)! CSPI has other good food publications —*Nutrition Action* (monthly, \$10/year), *Building a Grass Roots Food Policy* (\$2.50), an activities guide for teachers on food (\$4.50) and others—write for a list. —TB

The Book of Kudzu, William Shurtleff and Akiko Aoyagi, 1977, \$4.95 from:
Autumn Press
 7 Littell Rd.
 Brookline, MA 02146

The Kudzu vine has been blessed and cursed by thousands for its rampant growth that overwhelmed forest and agricultural land in the southeastern states. Shurtleff and Aoyagi's thorough and careful study lays out how to control its spread, recipes for use of its root as a high quality cooking starch, details of medicinal use of the plant; its use for livestock fodder, erosion control and soil rejuvenation; instructions for weaving with its fibers, and details for home and cottage industry production of the various products available from the plant. A commendable continuation of these folks' earlier work in the *Book of Tofu* and *Book of Miso*. —TB

The One-Straw Revolution, Masanobu Fukuoka, 1978, \$7.95 from:
Rodale Press
 Emmaus, PA 18049

A vision, and a partly-tested one, of a different attitude and way of agriculture based on wisdom rather than power—knowing when and where to seed without plowing, how to co-exist fruitfully with "weeds," interplanting—without the mechanistic trappings we currently use to imitate natural processes. An important "think and feel" book with applications far beyond agriculture. —TB



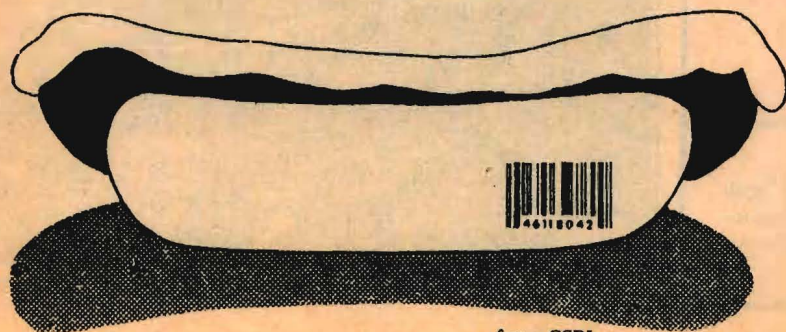
from *The Book of Kudzu*

CORRECTIONS

In the April issue of *RAIN* we incorrectly stated that the *Quarry Association Newsletter* is available from the Centre for Alternative Technology for \$1/year. Due to postage costs and dollar differences, a donation of not less than \$3/year is needed to cover costs.

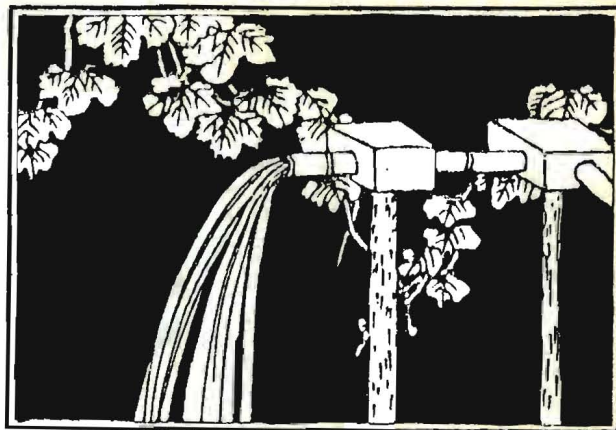
Culture and Horticulture by Wolf Storl, mentioned in the June issue, is all sold out but will be published soon by Heinz Grotzke. Anyone interested could contact Bio-Dynamic Literature, Box 253, Wyoming, RI 02898.

The *Energy Adventures of Ernie and Bud*, reviewed in the July issue, is available from AERO for 30¢ an issue (25¢ in bulk of 10 or more), plus 20¢ to cover postage. In that same issue, *Films on Food and Land*, available from Earthwork, was also listed incorrectly. It is available for \$1.50 for individuals and \$2.50 for institutions and co-ops.



from CSPI

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.**
- Urban Ecotopia Poster**, by Diane Schatz, 22"x33", \$3. A reprint of the "Visions of Ecotopia" line drawing that appeared in the April '76 poster issue. Great for coloring.
- Suburban Ecotopia Poster**, by Diane Schatz, 22"x30", \$3. Available for the first time in full size, this finely executed drawing illustrates Small-Is-Beautiful and self-reliance principles applied in a happy suburb of the very near future. Also great for kids' (and grown-up kids'!) coloring. (See cover of April '76 poster issue)
- Emerging Energy Policy Principles**, by Tom Bender, August 1974, \$1.
- Cosmic Economics**, by Joel Schatz and Tom Bender, revised March 1974, \$1.
- 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.
- 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.
- 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."
- 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 10 issues; Vol. IV, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9 (Vol. IV, No. 2 was a special issue guest edited by the California Office of Appropriate Technology.)

Principles to be carefully remembered in wending our way through this transition, and outlines for the simplest and most effective economic mechanism we've seen for guiding that transition.

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- Living Lightly: \$7.50/year—10 issues \$ _____
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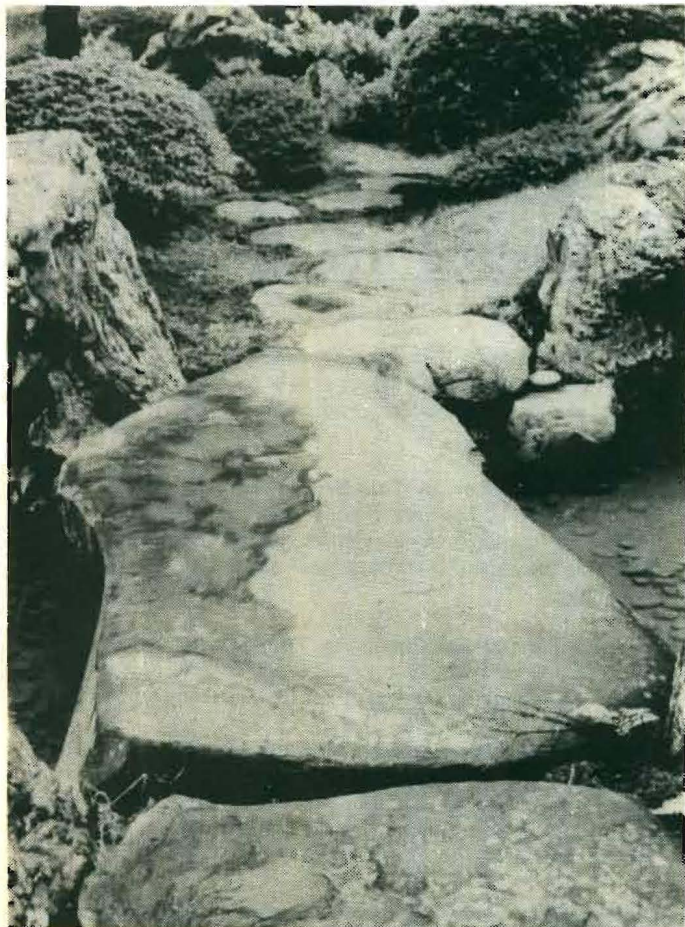
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STEPPING STONES



Tom Bender

In Japan, the stepping stones in a garden are spaced far enough apart so that each step must be taken carefully, one by one. As you look down to cross safely, you see in the water the reflections of the clouds and the trees above. Your attention is focussed from the broad view of the garden to the detail of the immediate footstep and the mirror of the sky. . . . When your footing is again secure you look up to find yourself in a new place.

It's hard to write this now since Linda and I are in the final exhausted stages of layout corrections, but we have a new book coming out! *Stepping Stones: Appropriate Technology and Beyond* is a collection of pieces about a.t. edited by Gigi Coe (from the California Office of Appropriate Technology) and me. With so many people getting interested in a.t., we felt it was high time for a book which brought together all the hard-to-find old idea pieces that have shaped the development of the movement in the last few years. Many have appeared in relatively obscure places like *Resurgence* and *Rain*; others were never really published at all—just passed around the network as increasingly tattered xerox copies. There are lots of old friends in it like Howard Odum's *Energy, Ecology and Economics*, early *Schumacher pieces*, *Clothesline Paradox* by Steve Baer, and *Cosmic Economics* from the now defunct Oregon Office of Energy Research and Planning. These pieces are the early stepping stones. Then there are five brand new pieces which examine what's been happening and explore future possibilities in several key areas: David Morris on self-reliant cities, Margaret Mead on the realities of Americans changing energy patterns, Gil Friend on responsible agriculture (it's more than just compost), Lee Johnson on neighborhood energy systems, and Tom Bender on "Getting through the Looking Glass." These pieces are the "beyond" part. There's also a wonderful new cover drawing by Diane Schatz which we'll share with you in the next issue of *Rain*.

Stepping Stones is being published by Schocken Books—the same people who did *Rainbook*. They're billing it as a companion to *Rainbook*, which of course it is. *Rainbook* gives you the resources on what's happening—*Stepping Stones* provides the background and the philosophical glue to put it all together. It should be out in November or so (if we get it on the plane tomorrow)—just in time to give to your mother for Christmas. It will also be useful as a textbook, to hand to anyone who's been wondering what this a.t. stuff is all about, or to enjoy yourself. You'll be able to order copies through *Rain* or get them at your local bookstore. (Bookstores should order them through Schocken: 200 Madison Ave., New York, NY 10016). We'll let you know more about price and availability when we know more. —LdeM

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