

Portland State University

PDXScholar

RAIN: Journal of Appropriate Technology

RAIN

10-1-1978

RAIN: Journal of Appropriate Technology

ECO-NET

Follow this and additional works at: https://pdxscholar.library.pdx.edu/rain_japt

Let us know how access to this document benefits you.

Recommended Citation

ECO-NET, "RAIN: Journal of Appropriate Technology" (1978). *RAIN: Journal of Appropriate Technology*. 10.

https://pdxscholar.library.pdx.edu/rain_japt/10

This Book is brought to you for free and open access. It has been accepted for inclusion in RAIN: Journal of Appropriate Technology by an authorized administrator of PDXScholar. Please contact us if we can make this document more accessible: pdxscholar@pdx.edu.

October 1978

RAIN

Journal of Appropriate Technology

Vol. V, No. 1

\$1.50—No Advertising



STEPPING STONES POSTER BY DIANE SCHATZ (see p. 11)



RAIN

access

APPROPRIATE TECHNOLOGY

Appropriate Technology Resources, Report Series No. 30, 1978, 55¢ from:

Citizens Energy Project
1413 K Street, N.W.
8th Floor
Washington, DC 20005

This seven-page pamphlet is a nice short introduction to appropriate technology that you might want to have handy to give to people who come into your office or to show to people at a booth. It describes the general concepts, gives examples of projects and lists basic groups, periodicals and books. —LdeM

A.T. Small Grants Program for the Pacific Northwest and Alaska, Program Announcement and Grant Application Form, available from:

U.S. Dept. of Energy
Region X
1992 Federal Bldg.
915 2nd Ave.
Seattle, WA 98174

Finally, a DOE appropriate energy technology grants program for our region run out of our region with regional a.t. people making sure it is done right. Those eligible for grants to \$50,000 include: individuals, local non-profits, local governments, Indian tribes and small businesses. Although there's \$144,500 in management money to run the program, our region gets only about \$300,000 . . . meaning administration amounts to 48 percent of the total grant monies. Ironically, the administrative dollars can only be used for program management and cannot, we're told, be transferred to the grant side so that more good ideas can be funded. We can only hope that *next* year's grant monies are allocated according to *this* year's overwhelming number of good proposals. —LJ

"Summary of Projects funded in Region IX Appropriate Energy Technology Grants Program," 1978, GPO: 1978-789-159/1015, free from:

Carole Gates
U.S. Dept. of Energy
Appropriate Energy Grants Program
Oakland, CA 94612

Describes over 100 projects which received grants in the a.t. pilot program run during 1977-78 in the states of Arizona, Nevada, California, Hawaii and the Pacific Trust Territories. Extremely useful to anyone considering trying for an a.t. grant during 1978-79. —LJ

Invention Management, monthly, 8 pp., \$48.00 per year from:

Institute for Invention and Innovation, Inc.
85 Irving St.
Arlington, MA 02174

Patents, licensing, product development and other topics of interest to the inventor are in each issue. Perhaps you can get your local inventor's resource center to subscribe. —LJ

Information Service on Industrial Equipment (ACE Service)
Industrial Information Section
Industrial Services and Institutions Division
United Nations Industrial Development Organization (UNIDO)
P.O. Box 707
A-1011 Vienna, Austria

This United Nations service publishes a number of information/access sheets on technologies and equipment available in developing countries in recycling, industrial and farm equipment, etc. A series on comparable alternatives for grain storage facilities, grain dryers, hot-mix asphalt plants, low-cost roofing, etc. is particularly useful in presenting a range of alternatives available for each need. Write above address for more information on the series of publications available. —TB

Resources for Appropriate Technology in Santa Clara County; a sourcebook prepared by the Santa Clara County Office of Appropriate Technology, 1978, 106 pp., available to residents of that county free plus 50¢ postage from:

Santa Clara County Office of Appropriate Technology
P.O. Box 5651
San Jose, CA 95150

The folks at Santa Clara Office of Appropriate Technology have done a fine job of putting together a *regional* sourcebook (à la *Rainbook*) that is chock full of information, as well as being an exemplary model for other counties in the nation. The section on food and agriculture is appropriately one of the strongest sections in a book that is geared towards a once completely agricultural community. As the Santa Clara Valley has been radically developed from a lovely orchard/plant/food producing paradise to a smoggy car-oriented apartment slurb, this sourcebook lists the important groups, tools, books, and people to connect with in surviving there in a positive way. —LS

International A.T. Group Update

It seems like keeping in touch with our overseas counterparts is unusually difficult, what with mail delays, language barriers and so forth. Nevertheless, *RAIN* would like to update and broaden its contact with foreign organizations, movements and journals that are involved in a.t.—particularly those located in *overdeveloped* nations like our own, where the tools and ideas being developed would be more transferable to the circumstances in this country—and vice versa.

In a future issue we will try to update you all on just what is happening abroad. Our readers, here and overseas, could help us out greatly by forwarding literature and contact persons to us, or by showing a copy of *RAIN* to their foreign friends. Let's make some international networking happen. Tak så mycket. —SA

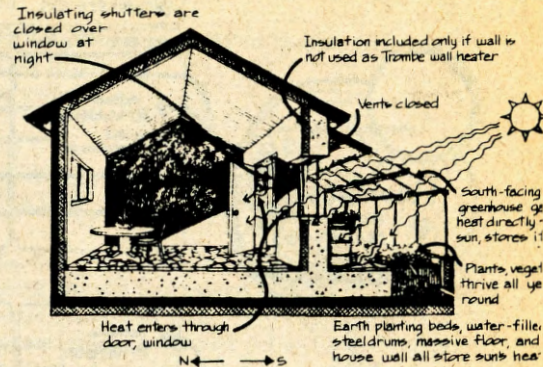
SOLAR

Sunset Homeowner's Guide to Solar Heating, edited by Holly Antolini, 1978, 96 pp., \$2.95 from:
Lane Publishing Co.
Menlo Park, CA 94025

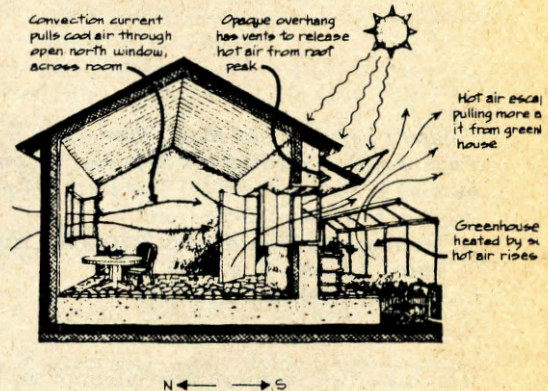
Special Report: HUD Solar Status, by Dept. of Housing and Urban Development, 1978, free from:
Status Mail
Box 1607
Rockville, MD 20850

This preliminary report outlines the progress of national solar standards efforts. It covers the current status of testing labs, the importance of warranties, and the initial steps of setting up a certification system. —LJ

This is one of the best values I've seen yet among all the existing introductory solar home books. Covering all aspects of passive and active solar water and space heating in short technology summaries and exemplary homes, there are 70 drawings and 36 color photos that illuminate a wealth of easy-to-read info in non-technical language. Includes a well-thought-out bibliography, a useful glossary and a comprehensive. Maybe it should have been titled "Everything You Wanted to Know About Solar Heating But Other Books All Cost Too Much to Buy." —LJ



Drawing 40: Greenhouse heating
Attached solar greenhouse is wonder worker: it heats itself by gathering and storing sun's heat, reradiating it at night; it also adds heat to main house by conduction through wall and convection through doors, windows. If greenhouse's temperature swing is great, main house may be insulated from greenhouse, closed off at night to prevent heat loss to gradually cooling greenhouse. If greenhouse stores enough heat, or if wall between house and greenhouse acts as Trombe wall (see page 17), house need not shut off, but may gather additional nighttime heat from greenhouse.



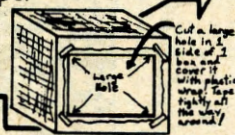
Drawing 41: Greenhouse cooling
To avoid summer overheating, greenhouse's vents and windows, high on east and west sides and across front of overhang, are opened. Sun's heat creates "chimney effect": hot air rises out of greenhouse, pulling cooler air by convection in through house's windows, across room, and through open doors and windows into greenhouse. Opaque overhang shades house to prevent heat buildup in wall (especially important if wall is not insulated from house).

from SUNSET HOMEOWNER'S GUID

from RESOURCES FOR APPROPRIATE TECHNOLOGY IN SANTA CLARA COUNTY

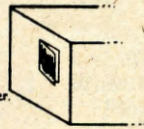
HOW MUCH **HOTTER** DOES A HOUSE GET WHEN THE WINDOWS FACE SOUTH INSTEAD OF NORTH?

MATERIALS:
2 Cardboard boxes of same size
White paint or paper
2 Thermometers
Plastic wrap
Masking tape



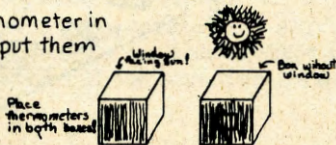
Paint both boxes white, or cover them both with white paper.

Tip: Cut a little door in the 2nd box so you can read the thermometer.



(from: Solar Energy, Science Activities in Energy, The American Museum of Natural History, Oak Ridge Associated Universities, P. O. Box 117, Oak Ridge, TN 37830)

Place a thermometer in each box and put them in the sun.



Record the temperatures after 10 minutes, 20 minutes, and 30 minutes. What do you find?



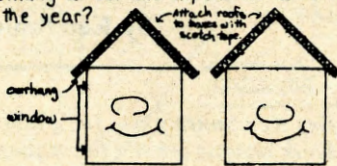
OTHER IDEAS TO EXPLORE:

Try this experiment at different times during the day.

Does this make any difference?



Add an overhang to both boxes: Does this make any difference? How would the overhang affect this experiment at different times of the year?



Try cardboard overhangs of different sizes to see if it makes a difference.

Would a house with a white roof be cooler than a house with a dark roof? What about adding insulation to the roof and/or walls?

And what about passive heating and cooling with the windows, different colors, and trees?



COMMUNITY

"The Ax of God Strikes Like Lightning"
Rick Fields, *New Age*, April 1978, \$1.50 from:

New Age
32 Station Street
Brookline, MA 02146

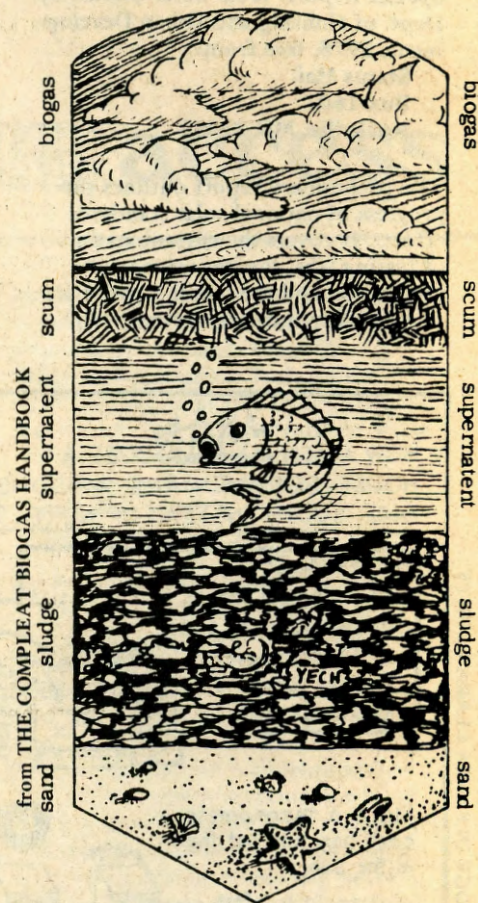
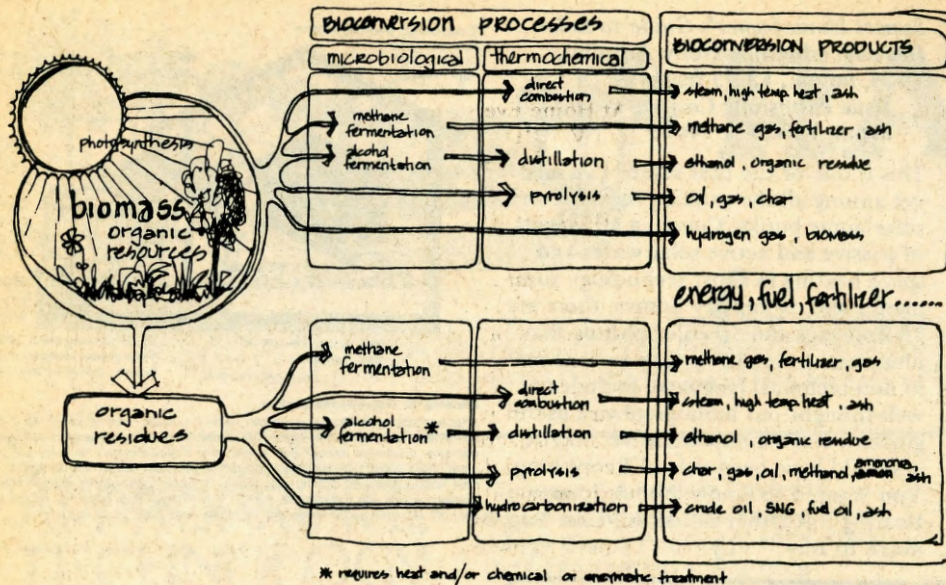
Community vs. Developers, Sausalito, CA, Round Seven—in which the Assistant District Attorney is quoted as saying, "I don't give a shit what the law is . . . we're going to do this project." See who the officials answer to when the bucks are on (or under) the table. See a scruffy but real community win another round in the endless fight for survival. See "Acts of God" occur before your eyes. See if we can do better than this! —TB

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

RAIN STAFF: Phil Conti Steven Ames Linda Sawaya Lane deMoll Lee Johnson Tom Bender

Copyright © 1978 RAIN Umbrella Inc. Reprint by permission only

Typesetting: Irish Setter Printing: Times Litho



Compost Fertilizer and Biogas Production from Human and Farm Wastes in the People's Republic of China, ed. by Michael E. McGarry and Jill Stainforth, 94 pp., 1978, \$5.00 printed, \$1.00 microfiche from:

International Development Research Centre
 Postal Address: Box 8500
 Ottawa, CANADA K1G 3H9

This is the first thorough description of the long rumored proliferation of biogas plants in the People's Republic of China (PRC). The book is a well edited version of papers "... translated from the Chinese and ... published in response to an increasing number of questions on Chinese practices and experiences in biogas production, excreta use and composting."

The PRC biogas plants are significantly different from the Gobar/Indian type biogas plants. The use of a fixed cover, concrete tank and rectilinear shape with no piping distinguish the PRC design.

This unique plug flow design uses no restrictive plumbing like those of the Gobar type. Instead a generous channel opening for both the "intake chamber" and the "outlet chamber" allow an easily accessible and clog-free passage for the mixture of pig manure, crop residues and human fecal material. A one meter (35 cu. ft. or about 250 gallons) digester is generally sufficient to provide cooking gas for a family of five. The digesters are below ground and require no heating. Operating temperature varies from 10° to 24° C. (50° to 75° F.) with correspondingly higher gas production in the summer when excess gas is used for cooking the animal feed.

For hygienic purposes the digesters have proven significant in their reduction of parasite eggs, schistosome flukes, and hookworms. Liquid excreta is constantly removed for crop fertilizer since the digester is fed frequently with slug loads to maintain continuous treatment and gas production. The digesters are emptied and the accumulated sludge is removed by hand once a year.

The PRC digesters are the simplest and most appropriate small-scale systems I have seen. These could be significant in altering future toilet and septic practices both in developing and developed countries which are seeking simple but effective waste treatment. These are clearly unique and exceptional. We owe thanks to Dr. McGarry for his reporting of this excellent work. —KS

the gas works

by Ken Smith

We have been twisting Ken Smith's arm for a bioconversion update, and these book reviews are the first squeezings. As his time and our space allow, Ken will also answer reader questions on the growth, conversion, utilization and end-uses of energy from biological processes. Ken is presently manager of the California Office of Appropriate Technology design team, having co-founded Ecotope Group, Inc., of Seattle, which built a 100,000 gallon dairy methane plant under his direction. If you've questions on his specialty, anaerobic digestion (methane gas production from organic decomposition in the absence of oxygen), or on alcohol production or biomass farming, write him directly at OAT, 1530-10th St., Sacramento, CA 95814.

Methane Generation from Human, Animal and Agricultural Wastes, Report by the Panel on Methane Generation for the National Academy of Sciences under contract AID/csd-2584, task order No. 1., 131 pp., 1977, free to Institutionally Affiliated Recipients (in government, education or research) from:

Commission on International Relations (JH215)
National Academy of Sciences
2101 Constitution Avenue
Washington, DC 20418

The book has value to those who may be considering the adoption of the Indian, Gobar-type digestion system. I personally feel that these are not the best units and that several technologies being developed in this country and elsewhere are more cost effective designs and readily adaptable to third world applications. Planners and practitioners may well be advised to not base their entire program in this area on the Gobar System. There is much to be learned if the development of bio-gas is viewed as experimental rather than demonstrable.

The book is very good in its presentation of "Biological Mechanism," the section on "Safety" is a good outline of the issues but leaves much to be desired in terms of how to apply the hardware necessary for safe operations.

The book is dated, but nonetheless useful. It is time they started a new study to update this artifact.

The document is lacking in comprehensive and up-to-date information due to its heavy reliance on the Indian experience. There are brief mentions of the Taiwan experience as well as other South Pacific examples but little if any of this work is described beyond mention in the introduction. There is a glaring lack of recent developments in this country which would have a great impact on the technology. Other missing examples include the commercial units operating in Australia and New Zealand.

This lack of reporting on recent development is probably due to the lack of any appropriate technology representation on their panel of "experts." It is an excellent panel except for its one-sided professional bias toward civil/waste treatment engineering. —KS

The Compleat BioGas Handbook, David House, 403 pp., March 1978, \$8.00 from:

At Home Everywhere
c/o VAHID
Rt. 2, Box 259
Aurora, OR 97002
Attention: Rita Dog

The Compleat BioGas Handbook is a book which I read and reviewed with great interest and mixed feelings. It is for the most part simplistic, naive and funky in its approach. It is tediously wordy, extremely basic and yet at times brilliant in its frequent extraction of rare and obscure tidbits of important observations from the voluminous literature on the subject of anaerobic digestion (methane gas production from the controlled decay of organic matter in the absence of air).

It is apparently aimed at a "Do-It-Yourself, Backyard-Tinkerer" audience, but its real value is more for the seasoned veteran of this technology. Significant statements are frequently not documented, leaving the reader to trust the author on his word. The bibliography is thorough, but poorly described in terms of real access to the information.

There is a great deal of practical information and formulas which are extracted from engineering handbooks. This material is well presented. Much of the actual design suggestions, however, may prove to be misleading to the novice. Fifty-five gallon drum digesters are for experimental work and hardly practical for other than novelty demonstration of the technology. Heating requirements based on gas production and surface-to-volume ratios flag the practicality of 55-gallon drum digesters.

Finally there is too little emphasis on gas handling safety. The danger of digesters in occupied space is disregarded. Digesters in enclosed spaces such as greenhouses, temperature control rooms and near their use (say, next to a stove) are extremely hazardous. Because of the potential of digester gas leakage and combination of that gas with confined space air, all enclosures for digesters or gas handling equipment should have controlled ventilation with gas alarm sensors for immediate warning and removal of explosive vapors. —KS

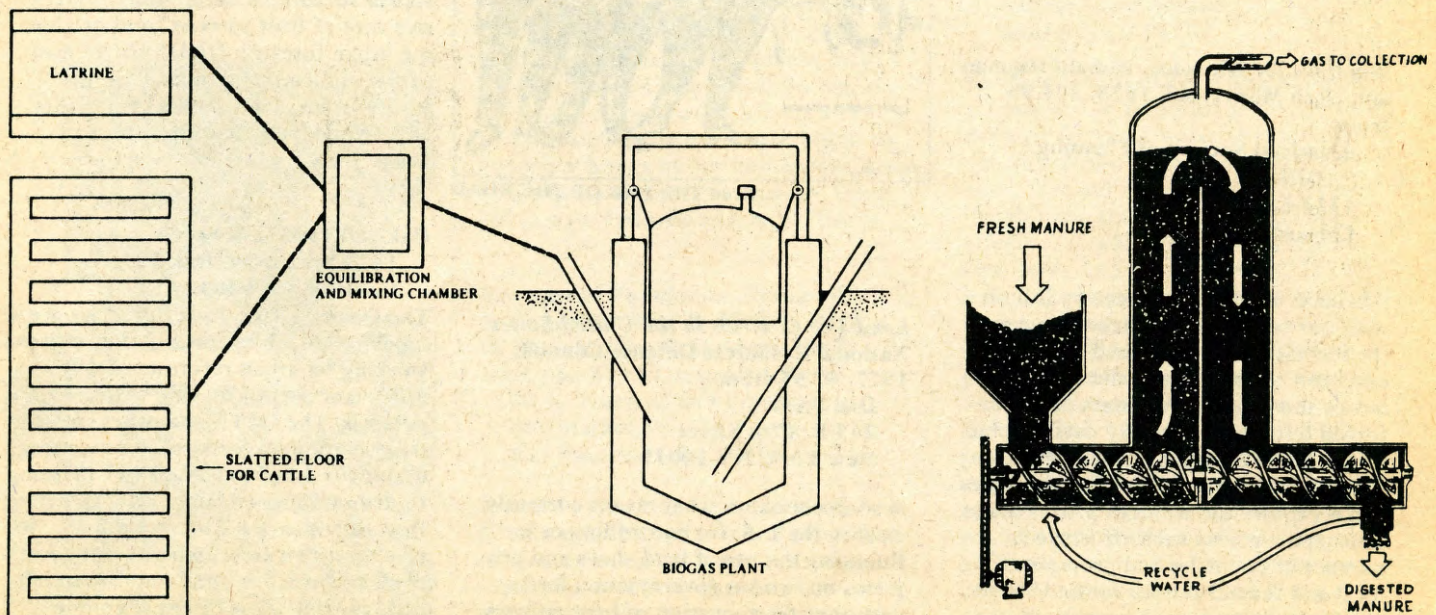


FIGURE III-2 Biogas plant for the generation of methane from night-soil and cattle-shed wastes.

from METHANE GENERATION FROM HUMAN, ANIMAL AND AGRICULTURAL WASTES

from THE COMPLEAT BIOGAS HANDBOOK

LAND

Current Demographic Changes in Regions of the United States, Peter A. Morrison, Rand Paper Series No. P-6000, Nov. 1977, 37 pp., \$3.00 (send payment with order) from:

Publications Dept.
The Rand Corporation,
1700 Main Street
Santa Monica, CA 90406

If you're curious where people have been moving to and why, or if you're about to move and are looking for still uncrowded parts of the country, you'll find this a fascinating guide to once-and-future Ecotopias. This is the first mapping and analysis, via a fine-tooth sieve, of national county-level data formed into 26 economic-cultural sub-regions by Calvin Beale at the U.S. Dept. of Agriculture, that clearly illustrates how migration has become a powerful influence in determining which areas of the nation grow and which do not. It's always a pleasure to see excellent, technical work explained without professional jargon and in a popular, conversational style that makes expertise less intimidating to the uninitiated.

Rand has a number of inexpensive (about 9¢/page) papers available to the public. Ask for their free annotated bibliography in the topic you're interested in. —LJ

Windfalls for Wipeouts, Donald Hagman and Dean Misczynski, 1978, \$23.95 from:

American Society of Planning
Officials
1313 E. 60th Street
Chicago, IL 60637

Whenever a subway or freeway is built with our tax dollars, someone pockets the increase in value of land near the exits and entrances, and the small businesses and apartment renters that are forced out take frequently catastrophic losses. Many efforts have been made to figure out how to compensate the losses and recapture the windfall profits made. This report covers such efforts in a number of countries and proposals for local and federal actions in the U.S. An outrageously expensive paperback—particularly when its research was paid for by a HUD grant. —TB

The End of the Road, David Burwell and Mary Ann Wilner, 1977, \$3.50 from:

National Wildlife Federation
1412 16th Street N.W.
Washington, DC 20036
or
Environmental Action Foundation
1345 Connecticut Avenue N.W.
Washington, DC 20036

A citizen's handbook for freeway-fighting, planning transportation alternatives and understanding the labyrinthine maze of special interests and legislation that makes up our transportation policy. Lack real discussion of alternatives to transportation, but covers other alternative planning and financing, and details of organizing and court action against freeways. —TB



The Washington Post

from THE END OF THE ROAD

Land Use Controls in the United States, National Resources Defense Council, 1977, \$7.95 from:
Dial Press
245 E. 47th Street
New York, NY 10017

A sourcebook on what means currently exist in the U.S. for controlling or influencing the use of land—laws and programs on various governmental levels, with specific discussion of how citizens can impact the development and application of those laws. —TB

FORESTRY

Forest Farming, J. Sholto Douglas and Robert A. de J. Hart, 1978, \$8.95 from:

Rodale Press
Emmaus, PA 18049

When this book first came out in its 1976 British edition, we hailed it as an important new slant on world hunger problems as well as soil and water conservation. It still is. There are no details here, but it lays out the conceptual framework for the planting of food trees on otherwise unarable land. Reading it makes lights go on in your mind. Thanks to Rodale for this easily available American edition—now if they could just get it out in paperback. —LdeM

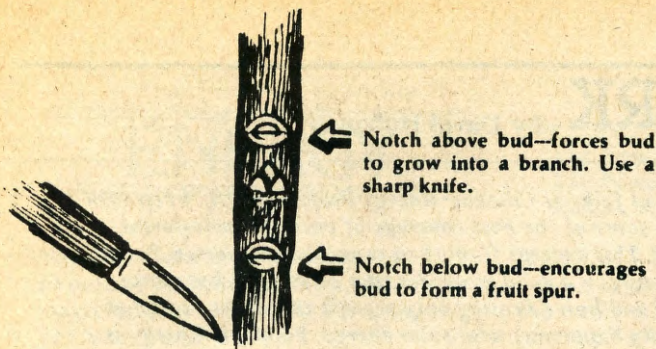
The DUMP HEAP (Diverse Unsung Miracle Plants for Healthy Evolution Among People), \$5/year for four issues published coincidental with the equinoxes and solstices, from:

Box 236
Lagunitas, CA 94938

DUMP HEAT 2, Summer 1978, focuses on *Trees in Forests, Farms and Gardens*. It includes a good list of Tree People, a national cross section of groups working on food producing trees from rare food trees to dwarf fruit- and nut-bearing trees. Also included is a tree bibliography and useful list of nurseries where dwarf and food producing rootstock is available. I am amazed as I look through this 16-page journal that every important tree book that I've heard about or come across at *RAIN* is mentioned. This is an important resource for anyone interested in intensive care of fruit trees or food producing urban forestry. *DUMP HEAT* also sponsors informal seminars. Some future issues: solar shelters for plants and people, permaculture and land trusts. —LS

Oakland Tree Task Force
1419 Broadway, Rm. 721
Oakland, CA 94612

The Oakland Tree Task Force is a great model of an ad hoc coalition of citizens working on urban reforestation. It's an important part of making where we are paradise. The OTTF and other street tree planting projects could now move us a little closer to paradise by planting food and nut producing trees, rather than ornamentals. Then we'd have food in urban areas (where costs of fresh seasonal fruit and nuts are practically putting these essential components of a healthy diet into a category of *luxury items*) and cleaner air, com-



WHERE TO FIND FRUIT BUDS...



To Save a Whale: The Voyages of Greenpeace, Robert Hunter and Rex Wyler, 1978, 119 pp., \$6.95 soft cover, from:

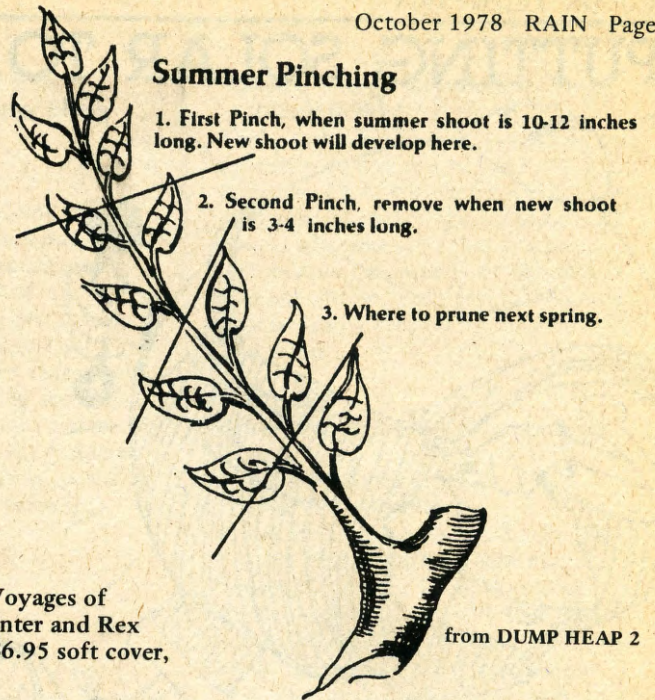
Chronicle Books
870 Market St., Suite 915
San Francisco, CA 94102

This is the story of Greenpeace and the eco-guerillas who have for several years been defending our Cetacean friends from the international whaling industry. In a succinct collection of narratives and photography, *To Save a Whale* rightly captures the feel of the early Greenpeace voyages—their verve and compassion, and the daring seaborne direct-action maneuvers used to prevent the whales from being hunted to extinction. But these missions of Greenpeace went much farther than whales—they were clearly a metaphor for our own species' struggle to survive *itself* in some balance with Creation. Says Robert Hunter: "Suddenly we see ourselves face-to-face with an alien intelligence right here on planet earth. And perhaps we have heard the signals that mark the end of childhood of the human race. Perhaps we have begun to break the bonds of our humanness, and to accept ourselves, not separate from, but as a part of wild nature." —SA

Ecoscience: Population, Resources, Environment, Paul R. Ehrlich, Anne H. Ehrlich, John P. Holdren, 1977, 1003 pp., \$19.95 softcover, from: W. H. Freeman and Company 660 Market St. San Francisco, CA 94104

I'm rarely impressed by textbooks, but *Ecoscience*, the updated and expanded version of an earlier work, is a vastly comprehensive primer and an invaluable source book for anyone involved in environmental issues. In one mammoth volume the authors link the basic concepts of natural processes with the sub-

Summer Pinching



from DUMP HEAP 2

jects of population and renewable resources, energy and materials, environmental disruption and imperatives of human survival. Unlike some of the earlier works, *Ecoscience* emphasizes strategies for positive—albeit somewhat limited—societal changes. An excellent resource tool. If you're inclined to groan at the price tag, I'd suggest waiting until semester's end at your local university and buying a used copy at the bookstore. —SA

An Environmentalist's Primer on Weather Modification, Eric I. Hemel and Clifford G. Holderness, 106 pp. plus appendices, \$2.00 soft cover from: Stanford Environmental Law Society Stanford Law School Stanford, CA 94305

Weather modification is becoming bigger business in response to the increased pressure for more water in large-scale agriculture and—yes—energy development. Yet our experience with its predictable use and environmental side effects is very limited. Recent reports (see *Acres*, U.S.A., September, 1978) have linked weather mod with cross-continental climatic effects, including severe flash flooding, loss of life and property destruction. It seems some weather disasters are much less than Acts of God. This environmentalist's primer is an introduction to weather mod issues, focusing on its cost/benefit economics, environmental consequences, and practical discussions on legal and legislative tactics for its effective control. Somewhat cautious in its approach, this book is nevertheless well laid-out and provides a good starting point for people who would like to get involved. —SA

ENVIRONMENT

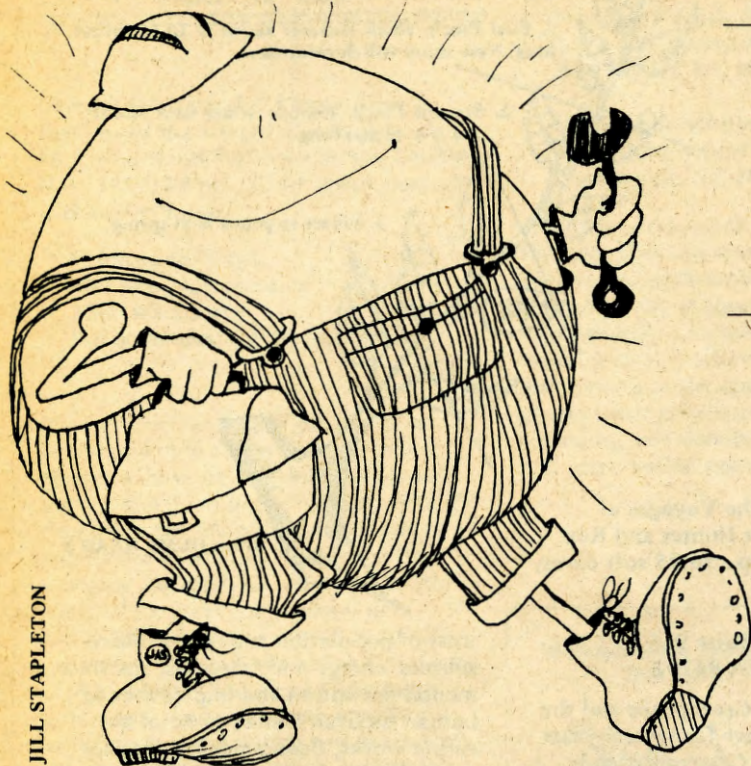


from TO SAVE A WHALE

munity revitalization, noise reduction, energy conservation (a single isolated mature tree transpiring 100 gal. of H₂O/day provides the cooling equivalent of nine average room air conditioners operating at 8,000 BTU/hour—running 12 hours/day), air purification, places to use greywater, recycling urban wasteland (Los Angeles has 100,000 vacant lots!) as well as school grounds, airports, rights of way, providing wildlife habitat, watershed protection. —LS

PUTTING SOLAR TO WORK

by David Holzman



JILL STAPLETON

Ten percent of industrial process heat could be solar-derived by 2000, according to "Solar Energy for Agriculture & Industrial Process Heat" (ERDA 76-78). The Mitre Corporation predicts that by 2000 solar process heat will supply 2 quads, or 23 percent of its potential market at an average cost of \$4.50 per mbtu compared to \$4.30 for coal, \$5.90 for oil and \$16 for electricity. Economics of solar process heat is tied to temperature. About a quarter of all industrial process heat is below 177°F., nearly within range of flat plate collectors, while 40 percent (8 percent of national energy use) is below 350°F. A not yet released study by the Cong. Ofc. of Technology Assessment (contact Henry Kelly, 212/224-5681) predicted that below 350° solar would be competitive with oil if oil's price increased 50 percent and with gas if gas's price doubled. Kelly pointed out that cheap liquid fuels have resulted in higher than necessary temperatures for process heat, and that no study has looked for areas where industry could reduce temperatures.

For greatest efficiency, the appropriate solar technology should be used to achieve a given temperature. The simple solar "shallow ponds" are capable of producing 150°, suitable for low-temperature industry; familiar flat plate collectors can raise liquids close to boiling; evacuated tube collectors can bring temperatures to nearly 300°; and concentrating collectors can produce around 500°. For processes which must have electricity (8 percent national energy budget, see Lovins, *Foreign Affairs*, Oct. 76), wind, photovoltaics, or steam generated from wood or biomass may be suitable, depending on circumstances.

Solar can be more attractive to business than homeowners because 1) businesses use life-cycle costing and are not intimidated by high first cost; 2) industries use process heat all year and collect three times as much heat annually per unit area as homeowners.

Passive solar is cheapest for low-temperature industry. Shallow ponds are being used for uranium milling in NM in a prototype system at \$7/sq. ft. At about \$5/sq. ft., cost would be equivalent to \$14/bbl oil. Warehouse heating with

The good folks at Citizens' Energy Project in D.C. keep turning out some of the best coverage of energy developments around. This excerpt from their monthly newsletter, People and Energy, is a good reminder that household hot water heaters and home heating only scratch the surface of what is already happening with solar energy. People & Energy is \$10/year from Citizens' Energy Project, 1413 K St., N.W., 8th Floor, Washington, DC 20005. Write also for list of other publications. —TB

passive Kalwall panels is on the rise. A 120,000 sq. ft. building at Plover, Wisconsin, the biggest in the state, is 95 percent solar heated; and a 1920s vintage factory in Manchester, New Hampshire, was retrofitted; and a waste-water treatment facility in Maine is passively heated (contact Solar Components Div., Kalwall Corp., 88 Pine St., Manchester, NH 03103).

Most of the collectors used for both household and industry are flat plate collectors. The largest solar hot water system in the country is a flat plate system for an industrial laundry. 6500 sq. ft. of collectors supply 56 percent of the energy to heat 66,000 gallons daily to 180° at the Red Star Industrial Service in Fresno, California. In Canton, Michigan, 40 percent heating for a 50,000 board-foot capacity lumber kiln with 2500 sq. ft. of collector. Solar flat plate collectors pasteurize beer at Anheuser-Busch in St. Louis and they bottle coke in Ohio.

The DOE-sponsored Campbell's Soup canning plant system in Sacramento, California, uses flat plate collectors in tandem with parabolic collectors which provide a final boost to 180-190°. A 20,000 gallon tank stores water for the night shift. The Nexcel Corporation uses concentrating collectors to make concentrating collectors at their Arizona plant (contact Geo. Branch, 11711 Dublin Blvd, Dublin, CA 94566).

Biomass can also provide direct process heat, or steam for process or electricity. Wood currently provides half as much energy nationwide as nuclear plants, and biomass could supply three quads for industry by 2000 (see program announcement for the Biomass Program, available from DOE). It's well on its way. In Hawaii, the Hilo Coast Processing Company (Pepeekeo Mill, HI) supplies 20 percent of the Big Island's electricity for 2¢/kwh from steam generated by burning dried sugar cane. At Eugene, Oregon, the Eugene Water & Electric Board fuels its 33 Mw generator with forest residues, saving \$2.16 million annually over oil-burning. Air pollution has been reduced. The 25-resident hamlet of Dixville Notch, New Hampshire, will soon be burning wood to generate electricity, as Burlington, Vermont's utility is doing. (21 of these are in Biomass Energy Success Stories, No. HCP/T0285-01; inquire price from USGPO, Washington, DC 20402). Methanol, which has been used in car engines, is a candidate for driving turbines. AMAX & TPM (a United Tech. subsidiary) tested methanol in a turbine for 12 hours at up to 18.5 Mw, finding that nitrogen emissions and maintenance costs could be lower. Biogas of Colorado (562 Kendall Ct., Arvada, 80002) is producing pipeline quality methane from cattle waste (P&E 2/78). Wind could generate a quad for industry by 2000, much more by 2020 according to Frank Eldridge of Mitre Corp.

Few government programs exist to encourage solar use in industry. DOE's '78 budget is a paltry \$8 million, large chunks of which go to programs that are less cost-effective than they could be. Rep. Bedell (D-IA) is trying to set up a loan program in the Small Business Administration for solar, conservation and other alternative energies (HR 11713, contact Marie Yager in Bedell's office at 202/225-5476).

ENERGY

Nuclear Power: A Case of Indecent Exposure, John Berger, 9 pp., WIN magazine, June 22, 1978, 40¢ issue, \$15/year from:

503 Atlantic Ave., 5th floor
Brooklyn, NY 11217

Indecent, indeed! This article by the author of *Nuclear Power: the Unviable Option* is based on a speech delivered at an April educational forum organized by the Crabshell Alliance. It is one of the clearest, to-the-point discussions I have seen of the myriad problems attached to nuclear power generation, and an excellent persuasion piece to hand to your baffled acquaintances who still cling to the myths of "clean" nuclear energy or electricity "too cheap to meter." The discussions of the health hazards attributable to low-level radioactivity are particularly startling. Economic arguments may have the most political clout, but the health factor is an iceberg just starting to surface. —SA

The Energy Show, \$2.75 from:
The New Western Energy Show
226 Power Block
Helena, MT 59601

Here it is, folks, the script and music for one of the several shows put on by the razzle-dazzle troupe touring Montana (and a few other places where you might be lucky enough to see them). It's perfect for putting on in classrooms, city parks, or home stages anywhere. Use it as a beginning and then write your own. If you don't know about the New Western Energy Show, read the October, 1977, issue of *RAIN* (Vol. IV, No. 1) or write them for information. —LdeM

"Counteract," a British political theatre group, is now researching and writing a play about nuclear energy. Send information and ideas to:

Jenni Wittman (CANTO)
38 Northways
College Crescent
London NW3 ENGLAND

National Energy Information Center,
202/566-9820

This is not a WATS line, but if you call collect, they will return your call. Maintained by FEA, the center will answer your general energy questions or refer you to someone who can. Statistical information can usually be handled over the phone; more general requests may be supplemented by the center's pamphlets.

Denver Public Library's Conservation Library

303/837-5994

(you can call collect)

If you live in the ten-state Rocky Plains Region—that's Arizona, New Mexico, Nevada, Colorado, Utah, Wyoming, Montana, Nebraska, North Dakota and South Dakota—and you have questions about energy or environmental concerns but don't know where to begin looking for answers, call the Conservation Library. It acts as a referral service and can put you in touch with someone who can be of specific help. There is a wide variety of data available for those of you who can visit in person.

Energy Information Center
415/556-7328

Funded by ERDA, the Environmental Protection Agency (EPA), and the Federal Energy Administration (FEA), the Energy Information Center was established primarily for San Francisco and nearby suburbs. Alternative energy technology—especially solar—is its area of expertise. The center has information on obtaining grants and funding for solar and alternative technology endeavors. It also handles questions by mail and offers a free information packet on solar energy. Write to: Energy Information Center, 215 Fremont, San Francisco, CA 94105.

Center for Energy and Mineral Resources

713/845-8025

Working out of Texas A&M University and funded by the State Energy Office, the center welcomes general or specific energy questions. It mails materials and brochures to supplement phone responses, maintains a mailing list and publishes a monthly newsletter. You can also write to the center at: Center for Energy and Mineral Resources, Texas A&M University, College Station, TX 77843.

(Courtesy Energy Conservation Project, Nat'l Recreation & Park Association)

The Windmill Song

Two lit-tle wind-mills sit-ting on a hill can save you
lots on your pow-er bill. I'll pump wa-ter for your crops, I'll make
e-lec-tri-ci-ty. The se-cret of wind power lies in
its sim-plic-i-ty. Oh wind it keeps blow-
in' Though no-one seems to know that it's their
friend if they on-ly know what it could
do then they would ne-ver say it's
no-thin' just the wind.

from THE ENERGY SHOW

AGRICULTURE

Small Farm Marketing: 31 Farms in Maine, David Vail and Michael Rozyne, 1978, Idea Paper No. 9, 50¢ from: Maine Small Farm Project Department of Economics Bowdoin College Brunswick, ME 04011

The Family Farm in California, Report of the Small Farm Viability Project, 1977, from: Attn: Bill Myers Economic Development Division State of California Sacramento, CA

Take a look at these two reports together if you'd like to get a sense of what size and bureaucracy do for solving problems. Admittedly, California agricultural problems are far different from Maine's. And the Small Farm Viability Project report contains a wealth of valuable information—most notably the results of a study led by Isao Fujimoto at UC-Davis that expanded to 130 communities in the San Joaquin Valley the classic Arvin and Dinubia study of Walter Goldschmidt. Vail's group merely went out and talked with 31 successful small farmers in Maine, talked with them about the problems they had had to overcome, and shared the insights of other farmers they had talked with. The significant difference, though, is the form of the recommendations. Vail suggests concrete actions based on specific and real experiences of the people

involved. The California report consistently appeals to the bureaucracy—for the Extension Service to do this, for the universities to do that, for a commission to be set up here, for the governor's office to have a special small farm representative there. Almost all ring hollow—they lack a clear sense of the problems and the leverage points to affect them, and enough sensitivity to people to recognize that such institutional structures and directives alone are useless and that the crucial element is having the right people with the right skills, enthusiasm and experience in the right place. The record of bureaucracies achieving that is rather dismal. Together the reports say "Get out in the field, and look to the people, not the government to solve your problems." —TB

Title 4 of the Family Farm Development Act (HR 10716) was signed into law in August providing FMHA ownership loans for small farmers at low 5 percent interest levels, "ballooned" payments for lower initial principal and interest payments, and funds for farm production cooperatives and small farmers otherwise unable to obtain credit through other private and public sources. This program will help to address the credit needs of the 1.6 million farmers with less than \$20,000 gross sales. For more information on Title 4 or the remaining eight proposed titles yet unpassed, write to Rep. George E. Brown, Jr., 2342 Rayburn Bldg., Washington, DC 20515. —SA

"A Perspective on Cropland Availability," AER-406 to ESCS Publications, free from: U.S. Dept. of Agriculture Rm. 0054-S Washington, DC 20250

This recent study identifies 15 million acres of high potential land with no limitation to development which could be converted to crop production. The study analyzes the amount, location and quality of land with cropland potential, by region, and outlines future research needs for conversion of non-cropland to cropland. —LJ

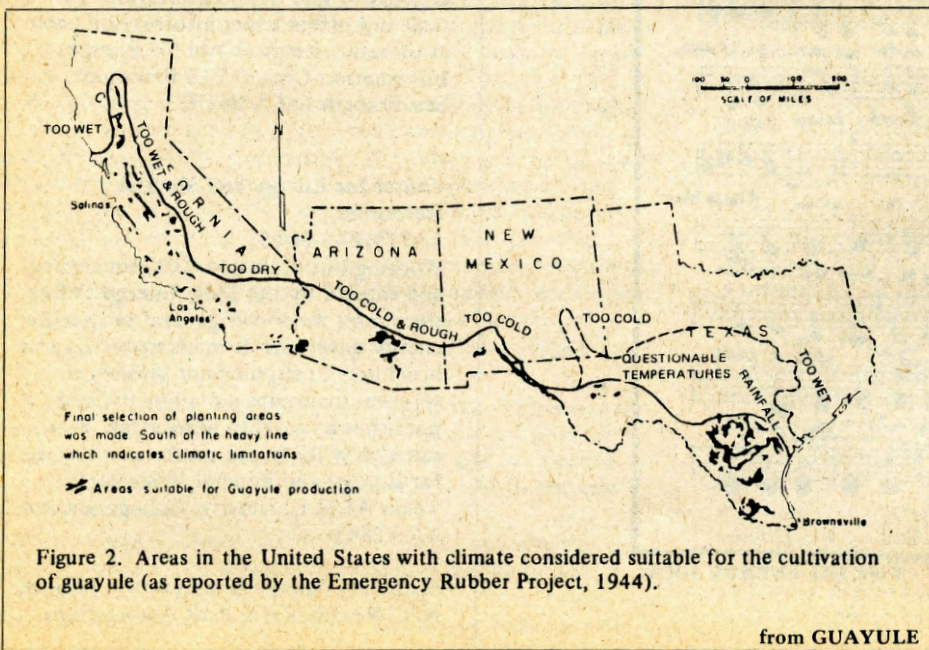
Guayule: An Alternative Source of Natural Rubber, National Academy of Sciences, 1977, NTIS No. PB264-170, \$5.00

The Winged Bean: A High Protein Crop for the Tropics, National Academy of Sciences, 1975, NTIS No. PB 243-442, \$4.00

Single copies of both reports are free if requested on government, educational or research institutional letterhead, from:

Commission on International Relations (JH 215) National Academy of Sciences—National Research Council 2101 Constitution Avenue Washington, DC 20418

Two more of the commendable reports from NAS on overlooked agricultural potentials—*The Winged Bean* is a classic in the series—easily grown, leguminous (producing its own nitrogen from the air), edible and highly nutritious leaves, flowers, roots, seed pods and seeds. An uncommonly valuable plant for many tropical areas. *Guayule* has more direct implications for the U.S. A desert shrub that produces natural rubber, it is a potential domestic product that can replace our current (719,000 tons, \$500 million in 1974) import of natural rubber from foreign countries. Interestingly, more than 3 million pounds of guayule natural rubber were produced in the U.S. during WWII. This report covers research on guayule since that time—processing techniques, biological research, and a survey of conditions that suggest renewed potential for commercial application: exhaustion of petrochemical sources for synthetic rubber, limited ecological base for tree-originated rubber, increased potential for political, economic, or biological restriction of that supply in face of growing worldwide rubber demand, and of course our own import-export trade imbalances. —TB



STEPPING STONES Table of Contents

PART I—THE PARTY'S OVER

Introduction

Speak to the Earth and It Shall Teach Thee—*C. R. Ashbee*

Changing Possibilities—*Tom Bender*

Lessons—*Stewart Brand*

Net Energy

It Takes Energy to Get Energy—*Wilson Clark*

Energy, Ecology and Economics—*Howard T. Odum*

Cosmic Economics—*Joel Schatz & Tom Bender*

Value and Values

Clothesline Paradox—*Steve Baer*

Household Economy—*Scott Burns*

Buddhist Economics—*E. F. Schumacher*

Conscious Culture of Poverty—*E. F. Schumacher*

New Values—*Tom Bender*

Technology for What and for Whom

Radical Monopoly—*Ivan Illich*

Isn't Nature Neutral?—*Frances Moore Lappé & Joseph Collins*

Time to Stop—*E. F. Schumacher*

Technology with a Human Face—*E. F. Schumacher*

PART II—APPROPRIATE TECHNOLOGY DEFINITIONS

Introduction

from A.T. and State Government—*Sim VanderRyn*

from Big and/or Little?—*Wilson Clark*

from Towards a Liberatory Technology—*Murray Bookchin*

from Rainbook—*Tom Bender*

Nature of Tools—*Ivan Illich*

Horsedrawn Tools and the Doctrine of Labor-Saving—*Wendell Berry*

Size

On Size—*Leopold Kohr*

Testimony to the Senate Small Business Committee—*Barry Stein*

The Briarpatch Network—*Andy Alpine*

Sustainability

The Soil and Health—*Sir Albert Howard*

Forest Farming—*J. Sholto Douglas & Robert Hart*

Biotechnology—*John Todd*

The Road Not Taken—*Amory Lovins*

Simplicity

Voluntary Simplicity—*Richard Gregg*

On Citizenship and Conscience—*Wendell Berry*

Building with Mudbrick—*Hassan Fatby*

An Ecologically Sound Architecture Is Possible—*Malcolm Wells*

PART III—BEYOND APPROPRIATE TECHNOLOGY

Introduction

Flight from Freedom—*Karl Hess*

Why Big Business Loves A.T.—*Tom Bender*

Can Americans Convert to Lower Energy Use?—*Margaret Mead*

Nurturing a Responsible Agriculture—*Gil Friend*

Independent Cities: Changing the Nature of Economic Development—*David Morris*

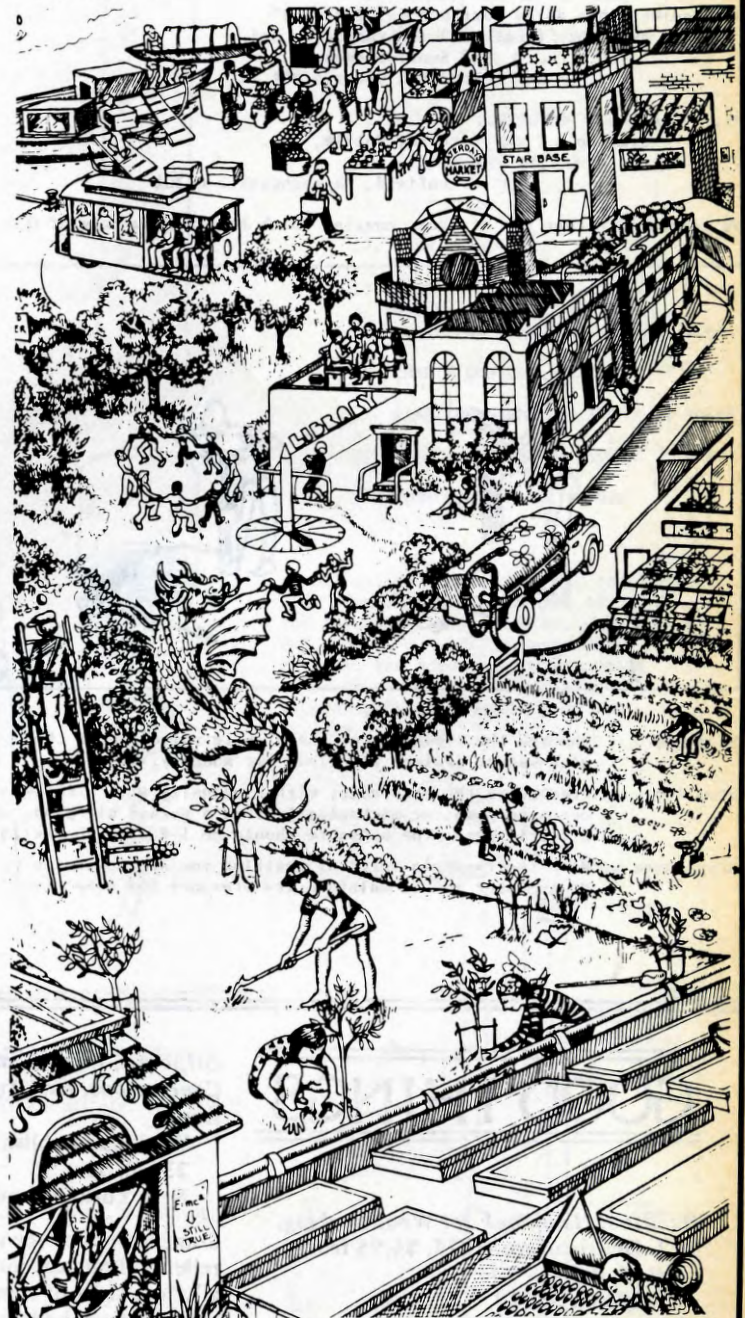
Neighborhood Energy: Designing for Democracy in the 1980s—*Lee Johnson*

Getting through the Looking Glass—*Tom Bender*

RESOURCES

INDEX

We are now taking orders for *Stepping Stones: Appropriate Technology and Beyond*—the a.t. reader edited by Lane deMoll and Gigi Coe this summer. As you can tell from the table of contents it is a collection of classic essays that have appeared over the past several years, plus five new pieces on new directions and possibilities. It's perfect as a text for classes or for anyone wanting some in-depth philosophical background on this strange beast called appropriate technology. The book will be out sometime in November, so send us your \$7.95 today. Bookstores and other bulk orders should go directly to our publishers—Schocken Books, 200 Madison Ave., New York, NY 10016.



detail from STEPPING STONES POSTER

Ever wonder how all our wacky ideas fit together? As you can see from our cover this month, Diane Schatz has come through once again with a vision that combines lots of appropriate technologies into an amazing landscape. It was done as the cover for *Stepping Stones*, and *RAIN* is making it available for \$3 as a full-sized poster—companion to our Urban and Suburban Ecotopia posters. How can anyone resist it? —LdeM

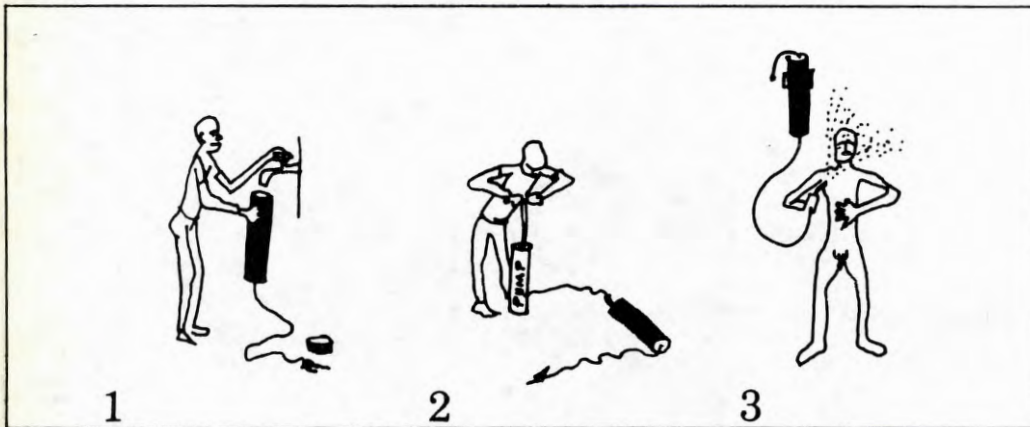
Assembly of the MINI-MISTER is as follows :

- a. Cement the two caps (2 & 3) to the tube with ABS cement.
- b. Drill a hole in the clean-out (4) to receive the insert (6). Place the insert in the hole and fasten the nut (7). Push the bicycle valve (8) snug onto the insert.
- c. Screw the completed assembly into one end of the reservoir.
- d. Drill a hole in the second clean-out (5) to receive the insert (9). Place the insert in the hole and fasten the nut (10). Push the end of the hose (13) over the insert and tighten the hose clamp (11) over the hose.
- e. Insert the other end of the hose onto the control valve (14) and tighten a hose clamp (12) over the hose.
- f. Screw the adapter assembly (15,16) into the control valve (14).
- g. Screw the nozzle (17) into the adapter assembly.
- h. Now screw the entire assembly into the other end of the reservoir.

Nozzles: *Steinen Spray Nozzle Model TM21 1/8"
 available from: Masdom Corporation Ltd.
 83 Sunrise Avenue
 Toronto, Ontario M4A 1B1

Or, *Bete F 200
 available from: Bete Fog Nozzle, Inc.
 Box 311
 Greenfield, Massachusetts 01301

We recommend either one of these nozzles which have a flow rate of 0.3-0.4 liters per minute.



- Step One : Unscrew the clean-out at the bicycle valve end of the pipe and fill the reservoir with water. Replace the clean-out snugly.
- Step Two : Pressurize the reservoir; either manually with a foot-pump (less work) or a hand-operated pump, or mechanically from a garage air pump, pressurized cannister or electric pump. The pressure should be 1-2 atmospheres (15-30psi).
- Step Three : With reservoir in vertical position you are now ready to shower. A well constructed Mini-Mister should maintain its pressure for some time.

the mist exp

Commercial "mist" showers that use pressurized air to atomize water have been recently promoted for their water conserving value. There is a substantial energy tradeoff, however, both to operate the pump and for heating to offset the considerable evaporative cooling caused by the atomizing. In water-rich areas it's hardly worth considering. Hot, arid climates are a different story. The Minimum Cost Housing Group, well-known for their path-breaking *Stop the Five-Gallon Flush*, is carrying on development of low cost mist showers, with the ultimate aim of avoiding the need for the intricate and expensive plumbing connected with our present bathing habits. The Do-It-Yourself

It is possible to build a small portable mist shower for well under ten dollars.

It would be possible to utilize a Volkswagen windshield washer reservoir, which already has a built-in pressure valve, but as a car accessory this is quite expensive (about \$20 for the reservoir alone). Instead we have developed a design that uses ABS (or PVC, though this costs more) plastic tubing and closures.

The main component is a piece of 75 mm (3") diameter tubing. This forms the reservoir whose capacity will depend on the length of the tube: 50 cm (20") contains about 2.3 litres (0.5 gallons) of water.

GOOD THINGS

Handtool Handbook for Woodworking, R. J. DeCristoforo, 1977, \$4.95 from: H. P. Books
 P.O. Box 5367
 Tucson, AZ 85703

The finest introduction to the use of handtools I've seen—an incredible amount of valuable information and useful tips in a very usable form for either a beginner or experienced woodworker. —TB

Potpourri, Incense, and Other Fragrant Concoctions, Ann Tucker, 1972, \$2.45 from: Workman Publishing Co.
 231 E. 51st St.
 New York, NY 10022

Somewhere between land planning, tax relief and nuclear power we occasionally lose sight of some of the lovely treats that make life special. Here's a nice reminder for our noses—the art of perfumery—the nature of scent, ingredients of perfume, extracting the scents of flowers, roots, etc., and how to use them to make incense, scented candles, perfume and other nice-smelling things. —TB

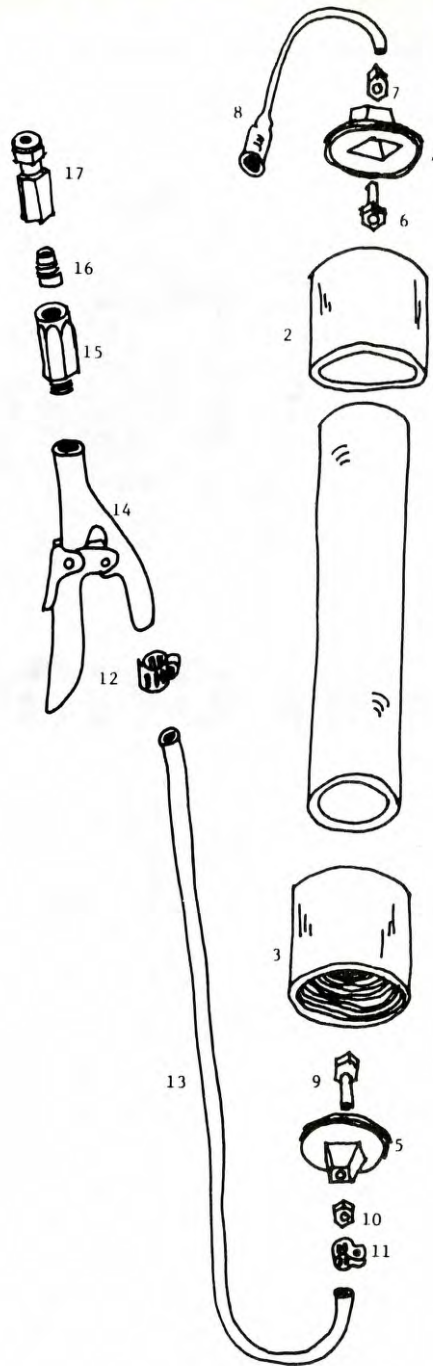
Music of the Whole Earth, David Reck, 1977, \$9.95 from: Charles Scribner's Sons
 597 Fifth Avenue
 New York, NY 10017

Every time I hear the typical "Western" explanations of music—confidently expounding octaves and notes and such things as THE structure of music, I remember the sliding sounds of trombone and singing and waterfalls, and see us again projecting our accidents of our own musical history and ignorance as the whole universe of the possible. This book is a delightful exception. It takes us about as far through an understanding of our planet's music as is possible.

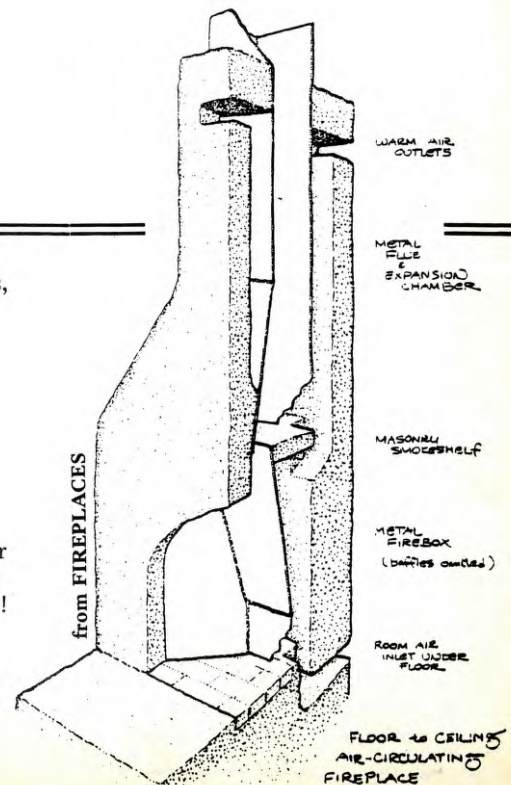
Mini-Mister

PARTS LIST

1. TUBE, ABS
75 mm (3") diameter
Length as required (approx. 50 cm, 20")
2. THREADED CAP, ABS
3. THREADED CAP, ABS
4. CLEAN-OUT, ABS
5. CLEAN-OUT, ABS
6. INSERT, COPPER OR BRASS
7. NUT, COPPER OR BRASS
8. BICYCLE VALVE
9. INSERT, COPPER OR BRASS
10. NUT, COPPER OR BRASS
11. HOSE CLAMP
12. HOSE CLAMP
13. HOSE, VINYL
6.3 mm (1/4") diameter
Length as required (approx. 1.8m, 6')
14. CHAPIN CONTROL VALVE
15. ADAPTER ASSEMBLY, COPPER OR BRASS
16. ADAPTER ASSEMBLY, COPPER OR BRASS
17. ATOMIZER NOZZLE, BRASS



Almost all of these parts are available from plumbing suppliers. The ABS parts are for water drains and could be of PVC plastic as well, though ABS is cheaper. The hose and control valve could be common garden variety... depending on the ingenuity of the builder.



erience

Mini-Mister shown here may find many uses in desert climates. It saves 96 percent of the water used in a normal shower. Cheap, portable, and solar heatable (just hang it up in the sun), its only drawback is need for a bicycle pump to pressurize. These plans are excerpted from a new Minimum Cost Housing Group report on their mist research and available water conserving showers:

Water Conservation and the Mist Experience, 1978, \$4.00 (Canadian) from:

Minimum Cost Housing Group
School of Architecture
McGill University
Montreal, Quebec, Canada

-TB

The ends of the pipe are closed with threaded clean-out caps, also of ABS plastic, which are cemented. A bicycle pump valve is attached to one of the caps, while a vinyl hose is attached to the other. At the end of this hose is the hand-operated control valve and handle, to which the atomizer nozzle is fixed. The vinyl hose can be made as long as desired, usually about 1.8 meters (6').

ABS plastic is an ideal material for the MINI-MISTER since it can be easily cut and drilled, is non-corrosive and readily cleaned, and can be glued and sealed with available plumbers' products. When not in use the hose and handle can be stored inside the reservoir.

intellectually and reminds us that the intellect misses the mark with music about as far as it can with anything. It doesn't go beyond into where the real power and meaning of music is, but that's okay for now. It shows the similarities and differences of the wonderful instruments of various cultures, the different ways sounds are put together into "music" in different societies, and what different people value and try to do through their music. Gives a base from which to construct some new synthesis. -TB

Fireplaces, Ken Kern and Steve Magers, 1978, \$7.00 from:

Owner Builder Publications
P.O. Box 550
Oakhurst, CA 93644

A well-done addition to Kern's Owner Builders Guide series, with beautiful examples of well-built fireplaces, the principles behind several distinctive types and detailed illustrated guides for building them yourself. Good solid information—leaves you ready to go at it! -TB



JILL STAPLETON

the crisis crisis

by Tom Bender

We have an energy crisis, right? There's a crisis in the Middle East, right? Or in Southeast Asia, or on a street corner in New York? There's a crisis everywhere and every minute, if you listen to the media or to the exhortations of many public officials.

But what is a crisis? A crisis is only a problem that supposedly is so critical and requires such drastic action that we must immediately throw all our forces into the fray, suspend any critical examination of the situation and ACT!

Who can declare a crisis? You can, or I can, but usually we don't bother, as the problems are usually our own and we're too busy dealing with them to bother with declarations. But if you'd write down who declared each of the crises you hear about in a 24-hour period, you'll probably find out that either (1) the media, or (2) public officials declared almost all of them.

Who said they could? No one. But the media knows that crises get the attention of listeners and readers and sell newspapers and get audience ratings. And public officials know that crises are important for bureaucracies because only large institutions can act largely and uncritically to deal with problems. If a problem is a Crisis, then it's unquestionable that government must ACT, and set up commissions, and make decisions and spend money without our interrupting them with questions or alternatives or anything. Time, you know, is all too important in dealing with crises. And whoever first discovered the crisis gets a pat on the back and a lot of attention for their diligence.

Wouldn't it be easier if we didn't have crises all the time? Sure would—we could relax a little, and try to get a sense of the whole situation, other people's viewpoints and ideas, have time and attention to figure out the real causes of problems, and maybe even go fishing once in awhile.

But how could we get rid of crises? Well, the Type I crises are real easy to get rid of—you just turn off the radio, tell the newspaper carrier not to deliver the front section of the paper, get a timer to turn off the TV at news time, and head out to the nearest trout stream. Trout, you know, are well known for their ability to keep you up on the really important things that you wouldn't hear about anyhow from your neighbors, co-workers, or friends. And because of the shape of their mouths, trout can't pronounce the word Crisis.

Then, do you remember that list of a day's crises you made? Look at it again and see what you did about any of them or could do about any of them. Nothing? Turns out they're mostly other people's problems that you listened to so you could feel anxious, or worried, or concerned, or so your ulcer could keep in shape. When in the last 3000 years have Middle East countries NOT been fighting? What could you do about that plane crash in Portugal? When you think of it, what of our crisis actions against urban problems, pollution, poverty, or toiletpaper shortages have had any real effect? And letting go of Type I Crises saves us the problem of picking up last week's paper by mistake and worrying about the wrong crisis in the wrong country.

What about Type II Crises? They're a little harder to deal with, because you have to tell someone that their crisis was a case of mistaken identity. It may have been a dead fish, or their pants were on backwards, or they had their belt too tight, but it certainly couldn't have been a crisis. They haven't been seen around here for years. There may be a problem, but that's something we can sit down and figure out and maybe take care of ourselves. You may even have to make Crisis a no-no word, but it's worth it. Without our attention and meddling, many crises either go away, like itching mosquito bites, or are taken care of by the people they affect.

Would eliminating crises have any harmful and lasting side effects? It might put a few crisis management consultants out of work, but they could be put to work cleaning the trout. Studies made in countries that have outlawed crises have found a pronounced decrease in rate of government activity and inactivity, subnormal anxiety rates in the public-at-large, and a significant decrease in inability to solve problems, but such symptoms did not seem to cause any lasting problems to society.

... Since we eliminated crises, we have discovered that we really do live in pretty good times. The fishing is good, it is good to be able to focus on real, affectable problems and solve them, and lots of rewarding things are around to learn and do, once we relax and quit worrying so much. Sure don't miss the good old days, and all those ... what did they call them?

HEALTH

Getting Well Again: A Step-by-Step Self-Help Guide to Overcoming Cancer for Patients and their Families, O. Carl Simonton, M.D., Stephanie Matthews-Simonton and James Creighton, 1978, 268 pp., \$8.95 hardcover, from:

J. P. Tarcher, Inc.
9110 Sunset Blvd.
Los Angeles, CA 90069

The Simontons are the directors of the Cancer Counseling and Research Center in Fort Worth, where their work with patients described as medically incurable has had dramatic results in extending life expectancy and even promoting complete recovery. Their psychological self-help approach augments standard medical procedures with the patients' active use of their minds, emotions and various relaxation and visualization techniques in altering the courses of their malignancies. *Getting Well Again* discusses the Simonton theories on the mind/body cancer connection and lays out a whole person model for cancer recovery; it is easily read and sensitively presented. Cancer patients and their families would do well to read this book in exploring their options for treatment and recovery. —SA

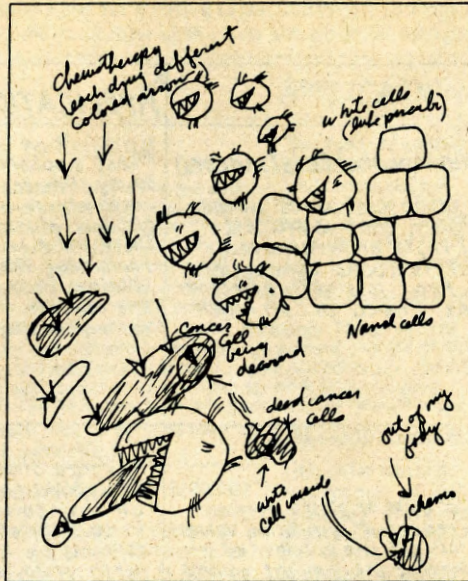


Figure 4. Betty's Initial Imagery, Showing Anger and Hostility. from GETTING WELL AGAIN

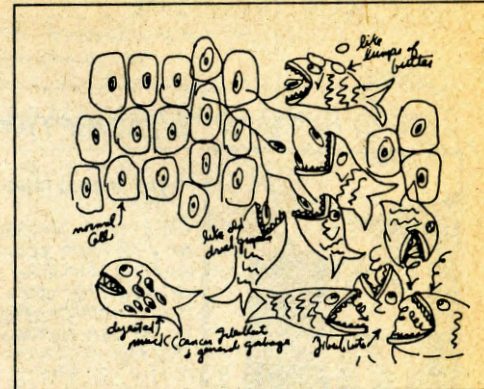


Figure 5. Betty's Imagery Six Months Later.

WASTE

World Ass'n for Solid Waste Transfer and Exchange (WASTE), for details write:

WASTE
152 Utah Ave.
South San Francisco, CA 94080

This global, computer-linked system enables participants to submit profiles of available or wanted materials for matching and retrieval. Governments, chambers of commerce, trade, environmental and other groups operating surplus material exchanges and clearinghouses are invited to call 415/871-1711 for a free test. —LJ

Rural Sanitation info, from:
Institute for Rural Sanitation Services (IRSS)
National Demonstration Water Project (NDWP)
1820 Jefferson Place, N.W.
Washington, DC 20036

The IRSS was established in 1978 by the NDWP. It operates an extensive research program, and is designed to provide up-to-date information about rural sanitation services, policy and technology. —LJ

WIND

Proceedings of the National Conference—American Wind Energy Association, Amarillo, Texas, March 1-5, 1978, 183 pp., edited by Vaughn Nelson, \$9.00 from:

Alternative Energy Institute
West Texas State University
Canyon, TX 79016

As we've come to expect from AWEA, another informative conference so we all have an excuse to get together in between the U.S. Dept. of Energy wind conferences which occur only every other year. Presentations of special interest included "The Vertical Axis, Articulated Blade, Wind Turbine" by Michael Bergey, "Wind Energy Programs sponsored by the State of New Mexico" by Kenneth Barnett, "Wind Energy in Denmark" by Marshal Merriam, "Simplifying Wind Turbines with the Composite Bearingless Rotor Concept" by P.A.M. Stierings. A seven-page list of attendees is included. —LJ

"Megawatts from the Wind: Low Cost Power in 1979," 3-day seminar, Oct. 30-Nov. 1, 1978, Seattle, Washington, \$525 registration fee, enrollment limited to 30, for details write:

George Stricker, Director
Continuing Education
University of Puget Sound
Tacoma, WA 98416
206/756-3306

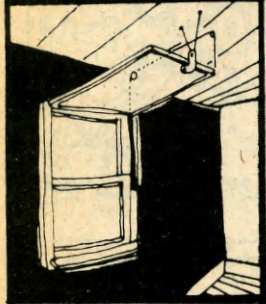
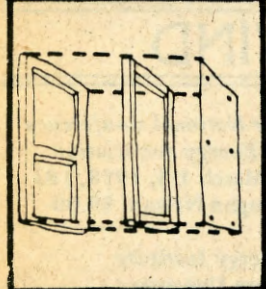
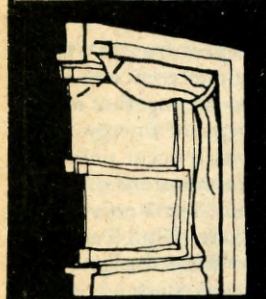
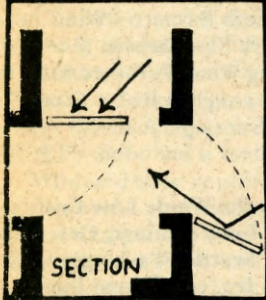
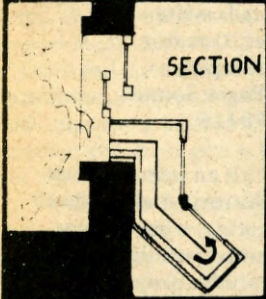
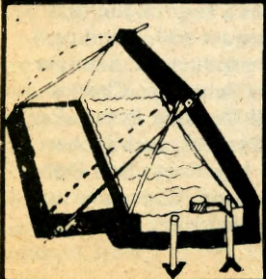
Program begins with an introductory past and present history, and follows with wind prospecting, wind turbine generators, economics, windpower applications, a case study, project action plans, and includes a tour of the first commercial, megawatt-scale wind turbine generator in production. Seminar leaders are Robert Scheffler, Charles Schachle, Wendell Hewson, Bob Baker, Stel Walker, Ed Warchol, Jack Robertson, Nick Butler, Ugo Coty, Bob Donham, and Ed Johanson. Expensive but excellent for electric utility decision-makers. —LJ

WORK

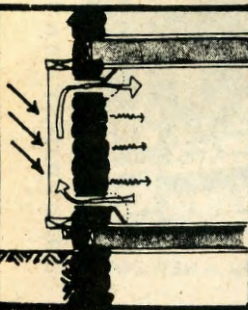

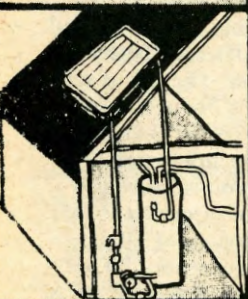
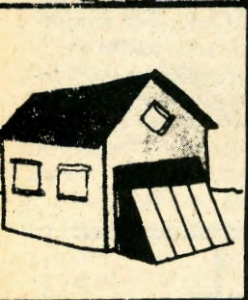
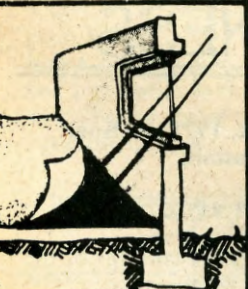
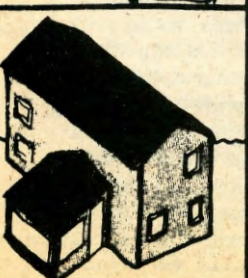
Night Work, J. Carpentier and P. Cazamian, 1977, 17.50 Swiss Francs (check current U.S. price) from:

International Labour Office
1750 New York Avenue, N.W.
Washington, DC 20006

Night work results primarily from industrial greed—a desire to keep expensive machinery running 24 hours a day to maximize output in relation to the finance overhead of the firm. The benefits to industrialists are obvious. The costs to the community and to the health, occupational, personal and social well-being of the workers are not so obvious. This is a good overview of the social and economic costs of night work, and lays a basis for efforts to minimize it and mitigate its effects. —TB

TYPE OF RETROFIT	DESCRIPTION	APPLICATION	ADVANTAGE	DIS-ADVANTAGE
	<p>Rigid Insulating Window Shutters (Indoors)</p> <p>This is a window enclosure usually made of 1-2 inch styrofoam that is placed over a window at night and removed during the day. It reduces conduction and infiltration heat loss very effectively. It can be hinged, clipped or on roller tracks.</p>	<p>Most appropriate to icy climates that would interfere with outdoor shutters. There must be room near the window to store the shutter during the day.</p>	<p>Easy to make; Does not need to be weatherproof; Very effective in reducing heat loss.</p>	<p>May increase water condensation inside window and around frame; May be fire hazard; May interfere with furniture and living space</p>
	<p>Double Glazing</p> <p>An additional layer of glass or plastic over an existing window increases its insulating value and reduces heat loss out the window at night without eliminating the sunlight gained through the window. Extra glazing layers can be either temporary or permanent with or without wooden frames. They should be installed with weep holes so that condensation can drain out the bottom.</p>	<p>This idea should be applied to all windows in cold climates—especially north windows.</p>	<p>Inexpensive; Effective; Easy to install.</p>	<p>Requires seasonal attention to install and remove; May interfere with ventilation and view through window; Storm windows require summer storage space</p>
	<p>Insulating Window Curtains (Inside)</p> <p>A window curtain made of heavy drapery material that fits tightly against the top, bottom and sides of the window will prevent room air from passing against the window at night and can be opened for solar gain during the day. This will prevent heat loss without reducing solar heating.</p> <p>Variations: Curtains may open sideways or roll up. They may be fastened around the edge of the window with velcro, multi-layered with flexible foam inside.</p>	<p>This curtain can be used on any window that has enough room around the edge.</p>	<p>Easy to install and use; Conventional appearance; Long lifetime.</p>	<p>Homeowner must be willing to open and close curtains daily; Takes up wall space when open; May cost more and be less effective than rigid shutter</p>
 <p>SECTION</p>	<p>Outside Insulating Window Shutters</p> <p>These shutters are designed to operate much like the inside rigid insulating shutters and can be just as effective at reducing heat loss. They can be designed with reflective surfaces that increase solar gain through the window during the day. They can also be used to shade the window during the summer.</p>	<p>Can be used on any window. Especially effective on north or shaded windows.</p>	<p>Shutters are effective in reducing heat loss and increasing heat gain; Can easily be constructed.</p>	<p>Outside shutters must be rugged enough to withstand wind, ice, falling snow and direct sunlight. Must be operated every day to be effective in bad weather.</p>
 <p>SECTION</p>	<p>Window Box Air Loop Solar Collector</p> <p>This is basically a flat plate solar collector that is attached below an existing window. The heat of the sun striking the collector causes room air to circulate through the collector and return through the window at a higher temperature. The best solar collector is a south facing window that is insulated at night. This collector increases the heat output of any existing south window.</p>	<p>This collector can be added to any south facing window that has enough room below it. Can be constructed of any insulated building material and glazed with glass or plastic. Black absorber plate should have a 2" air space on both sides for air circulation.</p>	<p>Collector can be built from salvaged materials; Simple to install and operate; No moving parts.</p> <p>The point where the collector meets the window should be well sealed and insulated.</p>	<p>No heat storage capacity; No heat delivered to house at night; Less efficient collector than insulated window; may have undesirable appearance</p>
	<p>Solar Hot Water Batch Heater (Trough Type)</p> <p>This is basically an open tank of water that is completely surrounded by insulation. Sunlight is reflected into the enclosure through the south glazing and heats the water. The tank is filled in the morning and the heated water is used in the afternoon. The glazing is covered with insulation at night. This unit can heat roughly 1 gallon of water per square foot of glass.</p> <p>Variations: Batch heaters can also be built</p>	<p>Can be used as heater or preheater in series with a conventional water heater. Can be filled and drained manually or water level can be controlled with a float valve. Should be mounted on roof for gravity drain.</p>	<p>Unit will supply free hot water on sunny day all year; Can be built from salvaged materials.</p>	<p>Heater requires daily attention during freezing weather; Is inefficient collector</p>
<p>out of old water heater tanks painted black and placed in an insulated enclosure. Sunlight can be reflected onto the tank during the day. No float valve is necessary.</p>				

For more details, read "The Fuel Savers: A Kit of Solar Ideas for Existing Ideas," 1977, \$3.75 from TEA, Church Hill, Harrisville, NH 03450, from which these two pages were adapted by the good folks at the New Mexico Solar Energy Association. -LJ

TYPE OF RETROFIT	DESCRIPTION	APPLICATION	ADVANTAGE	DIS-ADVANTAGE
	<p>Trombe Wall Added to Existing Masonry Wall - The masonry wall is painted black, vent holes are cut into the wall at floor and ceiling level and a glazing material is placed six inches away from the wall, enclosing the wall and the vents. Solar heat is trapped by the glazing and is absorbed by the black wall. The air between the glazing and the wall heats up and rises into the room through the top vents. Cooler room air is pulled into the lower vents and is heated. The vents are closed at night with dampers and insulating shutters can be used over the glazing to keep the wall warm. (Shutters not always necessary.) Heat stored in wall radiates to room during the night. A wall collector will deliver 32-40% of the incident sunlight into the room as heat. (30-35% from circulating air, rest as radiant heat.)</p> <p>Variations: A frame wall may be stripped down and filled in with bricks or water barrels to achieve the same effect.</p>	<p>This type of collector can be added to any solid, uninsulated, south-facing wall of brick, stone or adobe. It is very easy to design into new construction.</p>	<p>Wall serves as a heater as well as a structural part of the building; Very simple to construct - Takes one week-end; Has effective collection, storage and distribution systems that can be easily controlled; Can be installed over windows.</p>	<p>Collector will not work effectively over insulated or hollow walls; Appearance may be objectionable; When installed in new construction, it may take a year for the mortar and bricks to dry out and begin operating at full efficiency. Heat may damage a poorly constructed wall.</p>
	<p>Thermosiphoning Solar Hot Water Heater</p> <p>This system consists of flat plate solar collector panels, a water storage tank and a heat exchanger inside the tank. Anti-freeze solution circulates between the heat exchanger and the collectors. The sun warms the solution at the collector and causes it to rise into the tank which is mounted 2 feet above the collectors. The solution gives up its heat to the water in the tank through the heat exchanger, cools off and sinks back down to the collector.</p>	<p>This water heating system may be used anywhere there is a good southern exposure and a high place to mount the tank.</p>	<p>More efficient collector than a batch heater; Will operate automatically with little attention; Can be built from standard plumbing parts.</p>	<p>Complicated design requires a knowledge of plumbing; Leak in heat exchanger can pollute the hot water supply; Heavy tank mounted in attic must have adequate structural support.</p>
	<p>Pumped Solar Hot Water Heater</p> <p>Same basic components as thermosiphoning heater except the storage tank can be mounted below the collectors and an automatically controlled water pump causes the anti-freeze solution to circulate between tank and collectors. Collectors can be allowed to drain at night, thereby eliminating the need for anti-freeze and heat exchanger.</p>	<p>Same as other water heaters.</p>	<p>Very efficient solar heat collection; Automatic operation; More adaptable design.</p>	<p>Operation depends on electric power source; Design and controls are relatively complicated and require knowledge of plumbing and electricity.</p>
	<p>Greenhouses</p> <p>Greenhouses range in size from the small window mounted planters to the large units that cover the entire south wall. Window mounted units gain no more heat than an ordinary window and do not store heat for night time use, but do supply growing space for flowers and food. Large greenhouses stocked with water barrels for heat storage can supply a generous amount of heat to a home in a manner similar to a trombe wall. Substantial amounts of food and living space can also be provided by a greenhouse. Recent estimates (2) indicate that food and heat savings will cause an owner-built greenhouse to pay for itself in under 2 years. It is possible to grow \$1.50 worth of food/square foot/year or more.</p>	<p>Greenhouses can be built on the south side of any building that has a few feet of yard space adjacent to the wall and is not shaded. Temporary plastic greenhouses work very well adjacent to mobile homes. Heat can be transferred into the house through open doors and windows and can be stored for night time use in masonry or water barrels.</p>	<p>Greenhouse produces heat, food, space and humidity. Greenhouses are warm, green, and aesthetically pleasing.</p>	<p>A productive greenhouse requires daily attention; Moisture control can be difficult in some situations. Construction requires basic carpentry skills.</p>
	<p>Add Thermal Mass to Sunny Rooms</p> <p>If you already have a lot of south facing glass on your house and the south rooms tend to overheat, the addition of cement floors, veneer brick walls or water barrels can help to store this heat and to control the temperature.</p>	<p>Thermal mass can be added to any south-facing sunny room, greenhouse or sun porch to improve its performance. Mass added to non-sunny room will also help to control temperature fluctuations in those rooms.</p>	<p>Mass will store excess heat that might ordinarily be vented; Will prevent sudden and uncomfortable temperature changes automatically and silently.</p>	<p>Thermal mass occupies living space and weighs quite a lot, requiring adequate structural support.</p>
	<p>Glassed in South Vestibule Entrance - A vestibule entrance can be built to cover the south door and can double as a sun porch or greenhouse. It will reduce heat loss when the door to the house is open and will supply solar heat as well. An unglazed vestibule entrance on the other sides of the house will greatly reduce air infiltration losses when those doors are in use.</p>	<p>Any entrance used during the winter would benefit from a vestibule; all that is required is the yard space adjacent to the door.</p>	<p>Reduced heat loss and increased heat gain; Increased living space; good opportunity to improve the appearance of the house.</p>	<p>Heat distribution to house may require a fan and duct; Porch structure may shade other parts of house; Generous building skills required.</p>

NOTE: THANKS TO BRUCE ANDERSON FOR DIAGRAM IDEAS!

SIMPLE SOLAR

POLITICS

A Basic Call to Consciousness, The Hau de no sau nee Address to the Western World, 1978, 53 pp., \$3.00 softcover, from:

Akwasasne Notes
Mohawk Nation
via Roosevelttown, NY 13683

Originally presented to the UN Geneva conference on Discrimination Against the Indigenous Populations of the Americas (see *RAIN*, July 1978), *A Basic Call to Consciousness* is now available in a booklet format from the good people of Akwasasne. The first analysis of the modern world ever committed to writing by an official body of Native people, this statement is important reading for anyone seeking a non-Western American perspective on the thrust of American culture. In their own words: "The traditional Native peoples hold the key to the reversal of the processes in Western Civilization which hold the promise of unimaginable future suffering and destruction. Spiritualism is the highest form of political consciousness. And we, the Native peoples of the Western Hemisphere, are among the world's surviving proprietors of that kind of consciousness. We are here to impart that message." (Thanks to Terry Simmons) —SA



from A BASIC CALL TO CONSCIOUSNESS

Coalition for a New Foreign and Military Policy, Membership \$10/yr
120 Maryland Avenue, N.E.
Washington, DC 20002

The Coalition unites more than 40 national religious, peace, labor, professional and social action organizations working for better military and foreign policies. In addition to grassroots organizing and Washington lobbying, the people connected with the Coalition produce a series of useful information, resource and action guides on human rights and foreign policy, unemployment caused by military spending, transfers from military spending to human needs, disarmament, the new generation of nuclear weapons (all 10¢ each), South Africa (\$1), and Indochina (\$1). —TB

ECONOMICS

Who's Mining the Farm, Janet M. Smith, David Ostendorf and Mike Schechtman 1978, 76 pp. softcover, \$4.00/individuals, \$8.00/institutions, \$25.00/corporations, plus \$1.00 postage from:

Illinois South Project, Inc.
101-1/2 N. Park
Herrin, IL 62918

Based on extensive research into land ownership data and county tax records, this report examines corporate ownership of coal reserves in Southern Illinois and the negative implications for the local economy, family farms and small towns. Of 380,000 acres of coal lands documented here, fully 99 percent is absentee-owned, primarily by six large energy corporations. *Who's Mining the Farm* cites how existing tax systems avoid netting a fair reimbursement for local governments and how federal reclamation laws have actually encouraged such companies as Peabody and Amax Coal to expand into corporate farming with all its destructive tendencies. The report demonstrates how better property tax assessments, coal severance taxes and restrictions on corporate land ownership could avoid the creation of yet another banana republic in America's heartland. Strong stuff! A good research model for other regions threatened by corporate exploitation. —SA



from COALITION FOR A NEW FOREIGN AND MILITARY POLICY

Cut Local Taxes—Without Reducing Essential Services, Robert W. Poole, Jr., 1976, \$2 from:

National Taxpayers Union
325 Pennsylvania Avenue, S.E.
Washington, DC 20003

The standard bureaucratic reply to tax-relief proposals is, "That means we will have to cut essential services." When the ballot measures pass, they cut essential services and say, "See, I told you so!" Bunk! Get hold of this little book and thrash them out of office, or better yet, run for office yourself. The age of self-approved bureaucratic budgets is over. Nothing radical here (other than common sense), and no technological alternatives. Just good administrative procedures (what they're supposed to do). Many documented savings of 50 percent in cost of fire protection, 70 percent savings in garbage collection costs, etc. Contains a special reference section for getting more hard facts, useful organizations, private consultants, how to launch a political campaign or taxpayer's group. —TB

SMALL BUSINESS

The Briarpatch Book, 1978, \$8 from:
New Glide Publications
330 Ellis St.
San Francisco, CA 94102

I'm always talking up the concept of the Briarpatch Network wishing places other than the Bay Area would start up their own versions of this small business self-help/cooperative network. Besides assisting each other with bookkeeping, marketing, worker management and other such challenges, the Network puts out a quarterly journal (\$5/year) that is filled with examples of interesting and successful small businesses and general tips on the hows, whys and wherefores of "living between the

cracks." This new book is a reproduction of their eight existing issues. Don't buy it if you've been a long-time subscriber (you've already got it)—do if you're new to the idea and want an interesting cut through an important aspect of living and working right livelihood. —LdeM



from THE BRIARPATCH BOOK

Soycrafters Association of North America
 P.O. Box 76
 Bodega, CA 94922

If you're interested in appropriate small business here's a new network of people involved in low-technology tofu and soy milk production in America.

These folks are working to inform people about the varieties and benefits of soyfoods, to network among producers, conduct workshops regionally and nationally on sharing technical and business skills, problems, and to publish a journal called *Soycraft*.

Work on health and quality standards, access, legal aid, and research are also goals of this group. Sounds great! They now have available a list of tofu shops and soy dairies in the Western World as well as a catalog of tofu and soy milk equipment. —LS

community canneries. Although food drying is ultimately the most economical method, most of this study examines the processes and considerations involved in starting and operating a community canning center. It is a useful tool for comparing alternatives and setting up a canning center on an economic basis, but lacks consideration of an important aspect: the level of nutritional losses in each method studied. Contains a good bibliography. —LS

Carcinogen Information Program
Center for the Biology of Natural Systems
 Washington University
 Box 1126
 St. Louis, MO 63130

A new project to provide the public with reliable, understandable information about cancer-causing substances. The first two reports issued cover the cancer-causing chemical compounds formed in cooking hamburgers in certain common ways. Cooking methods, such as using frying pans, where the surface of the hamburger exceeded 300° F., and high-fat meat seem most dangerous, while slow cooking in an electric broiler got the best health rating. Notify CIP if you wish to receive reports as issued. —TB

New York City Garden Program Report,
 by Theo J. Kneip, 1978, from:
 David Call
 Cooperative Extension Service
 New York State, Roberts Hall
 Ithaca, NY 14853

There's long been a good deal of worry about the lead and cadmium contents of vegetables grown in urban environments. The Cornell University Cooperative Extension Service has completed a study of garden and market vegetables which shows that being city-grown does "not present any apparent health hazard." Write for the full details. (From *The Elements*) —LdeM

COOL it

Living better than ever after more than two years without a refrigerator has gotten us to question more closely our social fears about food preservation. The temperamental, short-lived, \$500 monsters that sit in our kitchens drinking more energy than any other home appliance, and destroying our peacefulness with their gurgling, roaring and panting day and night aren't as necessary as we seem to think. We're building an insulated cool box for our kitchen now, which past experience in our region says should keep even things like milk for several days except in the very hottest weather.

We've learned several things already about keeping "refrigerated" food: Milk, even when it has turned almost solid, is still safe, and fine for cooking (ever hear of *sourdough* bread?). Eggs keep for at least two weeks without any refrigeration. Cheeses are *harmed* by refrigeration. Dried milk can be used for cooking as well as drinking, and requires no refrigeration.

Living with a minimum of refrigeration doesn't necessarily mean living any less safely, or much less conveniently, or eating less well. We probably throw out less leftover food now than when it molded in the depths of our refrigerator. We're encouraged to plan meals more carefully, to use fewer processed foods, and to become creative with leftovers. We still can indulge any whims for meat or ice cream—on market day—and it's more of a treat.

What we'd like to know is more details on where the real points of concern are: What's the real scoop on salmonella, ptomaine, etc. (looking in the dictionary for the spelling of ptomaine we just discovered that many forms are not poisonous). What conditions cause them (food type, time, temperature, etc.), how to recognize the ways of neutralizing them (heat?), good tips on keeping various foods well. Some people have told us that food poisoning is only a problem if we don't clean out our system when we do get sick from it. And even if many things can be kept safely without refrigeration, what about their nutritional quality (both *with* and *without* refrigeration)?

Any help? We'll write up what we hear back from you all.
 —TB and LdeM

FOOD

Food Preservation, Spring 1978, 28 pp., \$3.00 from:
 Hunger Action Center
 Alaska Bldg., Rm. 200
 Seattle, WA 98104

This study explores the financial considerations in preserving foods via: home canning, freezing, drying, and

Average Cost/Year of Preserving 6 Dozen Quarts Prorated Over 10 Years

\$11.50	Drying
13.00	Home Canning
13.50	Community Cannery—Glass Jars
18.00	Community Cannery—Metal Cans
22.00	Freezing Locker
23.00	Custom Cannery
37.00	Freezing—Home Freezer

from FOOD PRESERVATION

It's quite evident that people in government (bureaucrats) have ignored reality in allocation of R&D grants in the bio-mass energy field. While "BIG" government supports academics and "BIG" business through "BIG" money R&D grants, large numbers of homeowners are quietly buying wood-burning stoves to reduce energy costs. Small-scale direct combustion appliances are and have been sold in the United States for over 200 years. Wood combustion has in the past provided over 90 percent of all home heating needs. As recently as 1950, over 70 percent of all counties in the USA (1950 Census) listed direct wood combustion as the predominant home heat source.

Increased research in direct wood combustion is needed and could produce the following immediate benefits:

1. Higher efficiency would further reduce fossil fuel use.
2. Creosote by-products may be eliminated from chimneys.
3. Consumer protection from relatively short-lived throw-away products.

Documentation indicating the benefits of small-scale, localized energy sources abound nearly everywhere. Transporting energy from one place to another via railroads, pipelines, and high voltage electrical grids is both costly and wasteful.

I encourage readers to promote wood heating to government policy makers. A little encouragement might help wood (the dark horse) win the energy race. Of course wood may eventually have to share the spotlight with wind.

European products are again leading the pack in wood-coal combination appliances. Not only are these imports higher quality and more efficient than our own; there is a greater variety to choose from. As a rule they are more compact and of better design than heating-cooking appliances manufactured here. Volume imports of products bearing such brand names as "De Dietrick," "Franco Belge," "Jøtul," "Buderus," or "Koppe" will soon make them common names here.

Here at RAIN we expect to begin the testing and examination of some wood-coal domestic water heaters. I've noted that

many European cookstoves are also waterboilers which are designed to provide hot water heat to an entire home. If any readers have had good experience with any product in this field, we'd appreciate any feedback offered.

Before firing up your woodstove or furnace this fall, perhaps you'd find it wise to do the yearly inspection-maintenance chores that were forgotten last year.

Did your chimney get its periodic inspection and cleaning? Chimney fires result from use of dirty chimneys. A chimney in poor condition, combined with a chimney fire, can cost your home or life. (See RAIN, Jan. '78, for more information). An eighth-inch of soot inside your woodstove can reduce heat radiation by 30 percent. A little furnace cement applied to the seams and joints of your woodstove will help restore its original efficiency and give you more control over the combustion. Your local fire department or woodstove shop can help you find the necessary tools for cleaning and maintaining your chimneys and wood-coal appliances. Please feel free to write Bill Day, c/o RAIN Magazine, 2270 N.W. Irving, Portland, OR 97210, if you have seemingly unsolvable wood combustion problems.

There are still a few people using galvanized stovepipe inside closed structures. When the zinc is heated, noxious-poisonous fumes are emitted into the air. New blue stovepipe costs very little compared to the potential loss of health.

A definite trend has begun in the Midwest and Eastern States. Most of the recently marketed steel box heaters sport cast iron doors and door frames. Earlier "'73 oil shortage expediencies," such as Fisher, Frontier, Earth, etc., ignored the air leakage problems caused by warped doors or door frames built of structural steel. Many of the new welded steel stoves now incorporate a Scandinavian style air baffle inside the stove. It appears that steel stove manufacturers have received a message—build a better product or go out of business. These newer designs should be much better, longer lasting, more efficient consumer products.



Bill Day's

**wood
heating
news**



LETTERS

More Wood Works

Dear Bill,

Your "Wood Heating News" in the August/September issue of *RAIN* was indeed welcome, particularly the remarks on chimney maintenance and on the poor quality of the copies of the Scandinavian stoves. These copies have got to be one of the biggest ripoffs around—they are a waste of money at any price.

You mentioned two new stoves from Washington Stove Works, but did not mention three new airtight cast iron stoves being made on the East Coast which in our opinion are far superior to those being made by Washington Stove Works. The first cast iron airtight stove to come on the market was the Defiant, which is assembled in Randolph, Vermont. The Crest by Washington Stove Works is merely a poor copy of the Defiant—Vermont Castings brought suit against Washington Stove Works about a year ago and the two finally reached an out-of-court settlement.

The second truly airtight cast iron stove made in America was the Cawley/LeMay. Assembled in Pennsylvania, the Cawleys are very large, Americanized versions of the Scandinavians—the large Cawley weighs in at 385 pounds versus the Jøtul 118's 231 pounds. Cawley and LeMay tried to ring a few improvements on the Scandinavians to make their stoves more appealing to Americans—like bigger fireboxes and two cooking rings in the top.

The Comforter came on the market last winter and has proven to be a well-made and popular airtight version of the American parlor stove. The Comforter was designed and marketed by Abundant Life Farm, one of New Hampshire's biggest stove dealers. The Comforter uses a baffle with a Venturi slot, has a pre-heating chamber like the Scandinavians and has a flue outlet low enough to fit into most fireplace openings. The castings are 1/4-inch thick and malleable iron is used at all the stress points.

From all indications there will be a few more airtight cast irons on the market this winter, with a few of them being American-made. It has taken several years for high quality cast iron airtight stoves made in America to hit the market, because it takes at least two years to design, build and market a good stove. Steel stoves, on the other hand, hit the market almost overnight, and die almost as fast. It is encouraging that a few American-made airtight cast iron stoves are now available, but only time will tell whether they will last over the long haul.

Sincerely,
Carl English
Homestead Stove Co.
Camas, Washington 98607

Pushing Passive

Dear Rain:

I want to make sure you know about David Wright's book, *Natural Solar Architecture, a passive primer*, Van Nostrand Reinhold, 1978, 250 pp., \$7.95. I'm impressed by it—it's a comprehensive introduction to techniques and considerations.

Passive solar needs plenty of support and education. It seems to have a way of falling between the cracks of American consciousness and organization. It's difficult to *measure* the impact of use of passive design, but it's easy to count the number of square feet of active collectors, so energy analysts in their studies and forecasts usually don't bother with passive (after all, the purpose of any study is to come up with hard numbers, right?). Business, looking for what it can sell, labor, looking for what it can make, and consumer, looking for what he can buy, all relate immediately to active hardware. Passive, being an approach, rather than a tangible, visual thing, can't even be advertised on TV and magazines (or shown to neighbors) like collectors can. And after all, anything truly decentralist and self-reliant almost by definition serves no organized interest group (except architects, I guess). I'm bothered that we seem to be headed toward a great cop-out: "Buy this fancy solar system and you'll never have to think about energy and you can keep doing everything exactly like you're used to."

Sincerely,
Walter Epp
San Francisco

You Can't Take the Suburbs with You

Dear Rain:

Judy Gordon's letter in your June issue hit a nerve. As a professional land use planner, I sometimes spend my mornings figuring out how to keep productive land in agriculture and my afternoons figuring out what to do about fertilizer in the drinking water. The inconsistency of doing this does not escape me . . .

But, lest Ms. Gordon and others among your readers brand me (and my professional colleagues) as insensitive to appropriate technologies and the sanity of decentralization, let me say this. We can't plan for a rural society of Jeffersonian yeomen with composting privies, solar collectors and organic gardens when what we get is a rural society of motorbike cowboys who poison their 1-10 acre tracts far more intensively than a working farmer could afford to do. The conventional wisdom of trying to increase density by preserving agricultural land or other means may weigh heavily against the would-be homesteader. It, also, keeps a lot of sewage out of the groundwater, a lot of tax dollars out of school busses, snow plows and far-ranging water lines, and a lot of energy out of sprawling power lines and long-distance commuting.

The low density of settlement that is, perhaps, prerequisite to the society idealized by Jefferson (and later agrarian decentralists) is, unfortunately, just as well suited to highly consumptive lifestyles. The issue is not as simple as a choice between organic gardens and agribusiness (or a "nice cover crop of weeds"). Until the things I see in *RAIN* are common practice, not just common sense, land use planning is going to have to make the best of a bad situation. I don't think we do that by spreading our problems out.

Yours for the best we can do today and a little bit better tomorrow,

Lee Nellis
Basin, Wyoming

Raindrops

*Putting together this issue we were struck by the ever-changing balance of things that end up together at deadline time. A few issues ago we ended up with almost all articles and few reviews, and said to ourselves, "Oh dear, we're not being RAINish anymore." Then this issue and the last we ended up with piles and piles of entries and no one felt like writing long things. It ain't a conspiracy or a plan—just the normal rhythm of how things happen. Take myself, for example. Pounding nails for the last year has meant that deadlines came up without enough time to read and review everything that came in. So short things got reviewed and long books got added to the ever-growing backlog pile. Finally got that cleaned out these last two months, so lots of entries and no time to write new stuff. And everyone else's lives are at least as crazy.

*Response from our financial plea in the last issue has left us with the feeling that if all RAIN-readers would subscribe, we'd be in great financial shape! We're glad that you all have learned well the lessons of living cheaply and reading RAIN at the office or borrowing a friend's. But we all also have to support the things we want to have. So, if you can, subscribe . . . and thanks to the folks that just have.

*We are setting up two intern positions at RAIN—an opportunity to pitch in and learn all the iceberg that is under the water of a publication and how to operate a small organization. Availability of an excellent library, weird and sometimes amusing cohorts, interesting people passing through, a place to sleep in the cavernous Rainhouse, and a grand stipend of \$25/week are the fringe benefits. Contact Linda Sawaya.

*Lane and I have moved into the upstairs of our Round Two house at the coast and will be finishing the first floor as soon as we get this issue out. Many thanks to all of you whose physical help and moral support this spring made it possible. We couldn't have done it again without you! —TB

California, Demons and Special Wisdom
September has afforded me the luxury of a little travel, and it's been nice to wend down and up the West Coast observing the changes in climates, vegetation and temperaments. My first-time-ever visit to California helped to diminish some of its enigmatic quality, leaving the brown grass, warm breezes and redwoods most real in my mind.

I greeted the wetter-than-usual weather in the Washington Cascades with a little less enthusiasm. But hiking with good friends in the high pleasures of the Enchantment Lakes was beautiful just the same. All along (and off) the trail I learned more about a game I sometimes play one might call Casting Off Demons. It's a little ritual I run through at danger points (the edge of a cliff, a turbulent plane ride) when I quickly imagine exactly what I wouldn't

want to happen (falling off, crash landing). I let the demons take the brunt and I go on my way. Somehow it better focuses my attention on what should really be happening.

I want to ask RAIN readers a favor if I can. Since writing my piece on Wisdom and Age in the June issue, I've become more interested in an ongoing project to collect and compile interviews with older folks who have some special knowledge to share—things that relate to self-reliance, a.t., folkways or Earth-consciousness. If you know of someone with a special wisdom about them, who would like to share it, drop me a line and tell me about them (and you).

This fall I will be taking on a short-term job outside of RAIN with two other folks to conduct a series of energy advocacy workshops throughout Oregon.

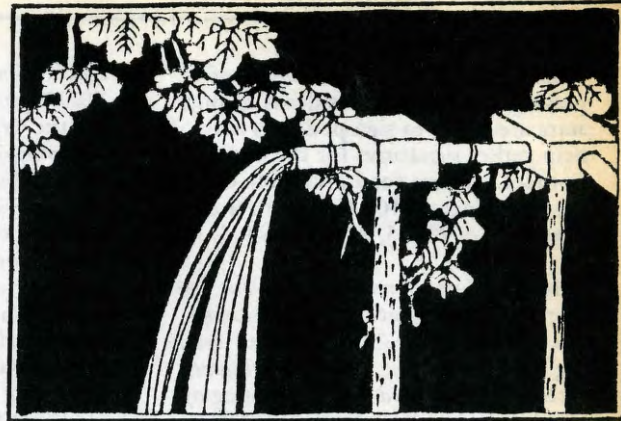
We hope to be broadening the understanding of energy issues and options for low-income groups and programs. I welcome this chance to sharpen some new skills and to be out in the field. I'll still be with RAIN, but just not on a full-time basis.

In the meantime, as fall approaches I know I'll be missing my favorite Midwestern season. So someone out there, take in a little extra golden brown and frost for me.

There's a new name in the RAIN box this month which generally corresponds to a new person working on our staff. That's Phil Conti, an organizer of Portland's new Responsible Urban Neighborhood Technology (RUNT!) and a board member of Oregon's a.t. network, now formally known as Oregon Self-Reliance. Phil will be dividing his time between the RAIN affairs and his many local activities in promoting neighborhood scaled self-reliance. Welcome to RAIN. In the same breath, we should say that Joan Meitl, the lady who kept RAIN running for the better part of a year, has left us to spend more time on personal interests and creative endeavors. Joan now has an industrial sewing machine and will be doing her own fabric cottage industry to make ends meet. Lots of love to you Joan. —SA



RAIN PUBLICATIONS



NEW

- Stepping Stones: Appropriate Technology and Beyond**, edited by Lane deMoll and Gigi Coe, 208 pp., Fall 1978, \$7.95. A valuable reader providing the philosophical glue and background of what appropriate technology is. Compilation of classic essays by Schumacher, Odum, Lovins, etc., as well as new visions of what may lie beyond by David Morris, Margaret Mead, Tom Bender, Gil Friend and Lee Johnson.
- Stepping Stones Poster**, by Diane Schatz, approx. 22"x33", \$3. This incredible new vision landscapes a community combining rural and urban views of Ecotopia. It was designed for the cover of our new book, *Stepping Stones*, to illustrate some possibilities for beyond. The detail in the poster is great.
- 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.
- 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. 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.

- 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, all 10 issues; (Vol. IV, No. 2 was a special issue guest edited by the California Office of Appropriate Technology.)

Subscribe to RAIN

Rates go up Nov. 1 - SUBSCRIBE or RENEW NOW!

RAIN
2270 N.W. Irving
Portland, OR 97210

Name _____
Address _____
City _____ State _____ Zip _____

SUBSCRIPTION RATES • NEW RATES

Regular: \$15/year—10 issues \$ _____

Living Lightly: \$7.50/year—10 issues (income less than \$5,000 . . . ?) \$ _____

Foreign Rates: Payable in U.S. Dollars, add \$2.80 for surface mail. Inquire for air mail. \$ _____

DONATION \$ _____

PUBLICATIONS (listed above) \$ _____

Add \$5 billing fee if payment is not enclosed \$ _____

TOTAL AMOUNT ENCLOSED \$ _____

The Post Office won't deliver magazines without zip codes.

Washington State is on the verge of passing a bottle bill. Residents of that state are urged to sign petitions and help gather signatures for the initiative. Contact Citizens for Returnable Beverage Containers, 1406 N.E. 50th Street, Seattle, WA 98105, 206/525-9453.

NASCO (North American Student Cooperative Organization) is sponsoring the annual Co-Op Education and Training Institute in Ann Arbor, Michigan, October 20, 21 and 22. The timing of this is important as the National Consumer Cooperative Bank Bill has just passed, creating a cooperatively owned bank that will loan money and give technical assistance to co-ops. The Institute workshops will cover the bank, co-op strategies for operations and management, etc. Contact: NASCO, Institute '78, Box 7293, Ann Arbor, MI 48107, about this conference and other information related to co-ops.

Northwest Food and Land Policy is the focus of a Rural America Conference in Seattle November 12, 13, 14. Rural housing, and community development, health care, food and nutrition, and land, water and resources are the three tracks of focus. Contact Rural America, Inc., 1346 Connecticut Ave., N.W., Washington, DC 20036, or Stephen Bossi, Seattle Coordinator, 206/243-4539, for registration.

Nuclear Intervenors Training Conference, Washington, D.C., October 8-10, following the Critical Mass 1978 Conference. An intensive two-day working conference will set the legal framework and demonstrate the skills necessary for lawyers and citizen activists to be effective intervenors and public advocates on nuclear power issues. Two levels of workshops (in some cases) will facilitate dealing with different levels of experience. If you cannot attend this conference, you can order a training manual prepared for this conference that compiles the legal precedents, procedural guidelines, and strategic tools essential for effective intervention. Cost is \$50 to energy/utility activists and citizen group representatives, \$75 to private and government attorneys, \$250 to industry reps. Contact NITC, 1025 Fifteenth St., N.W., Suite 500, Washington, DC 20005.

October 2-7, Quebec, Canada, International Federation of Organic Agriculture Movements (IFOAM) Seminar and Congress. Contact: Clement Boulander, 340 Willowdale, Suite 2, Montreal, Canada H3T 1G7, 514/342-9264.

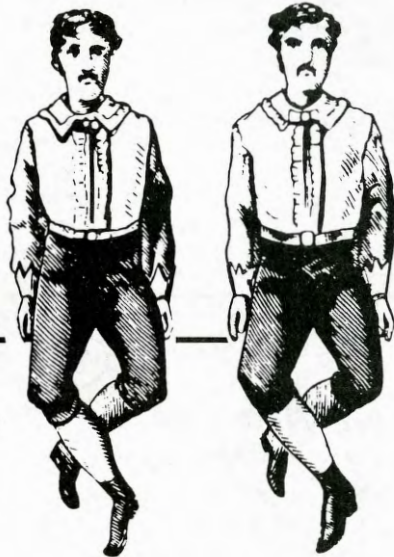
October 6-8, Washington, DC, Critical Mass '78, \$15 individuals, \$100 corporation representatives. Contact: Critical Mass '78, Box 1538, Washington, DC 20013, 202/546-4790.

Rush

Environmental Action Foundation is looking for a new editor for *The Power Line*, its monthly journal on utilities and energy. Applicants should have writing and editing experience as well as an interest in the utility reform movement. Involves contact with local citizens' groups. Salary \$11,500; job begins mid-November. EAF operates as a collective. Send resume and clippings to: Deborah Schoch, Environmental Action Foundation, 724 Dupont Circle Building, Washington, DC 20036.

News comes to us of a terrible automobile accident taking the life of Justas Bavarskis, news editor of *High Country News*, the environmental journal of the Great Plains and Rockies published in Wyoming. Seriously injured in the same accident were staff members Dan Whipple and Marjane Ambler. Ironically, *High Country's* staff had resisted taking group medical insurance in order to help keep the magazine afloat financially. Faced with at least \$12,000 in medical bills, only part of which will be covered by auto insurance benefits, the *High Country* people are in desperate need of financial support. Now is the time for all of us to activate our informal support network and help these folks through the difficult times. Please send your \$10 (or more) and moral support to:

High Country News
Box K
Lander, Wyoming 82520



RAIN
2270 N.W. Irving
Portland, OR 97210

Non-Profit Org.
U.S. Postage
PAID
Permit No. 1890
Portland, OR

Forwarding and Return Postage Guaranteed