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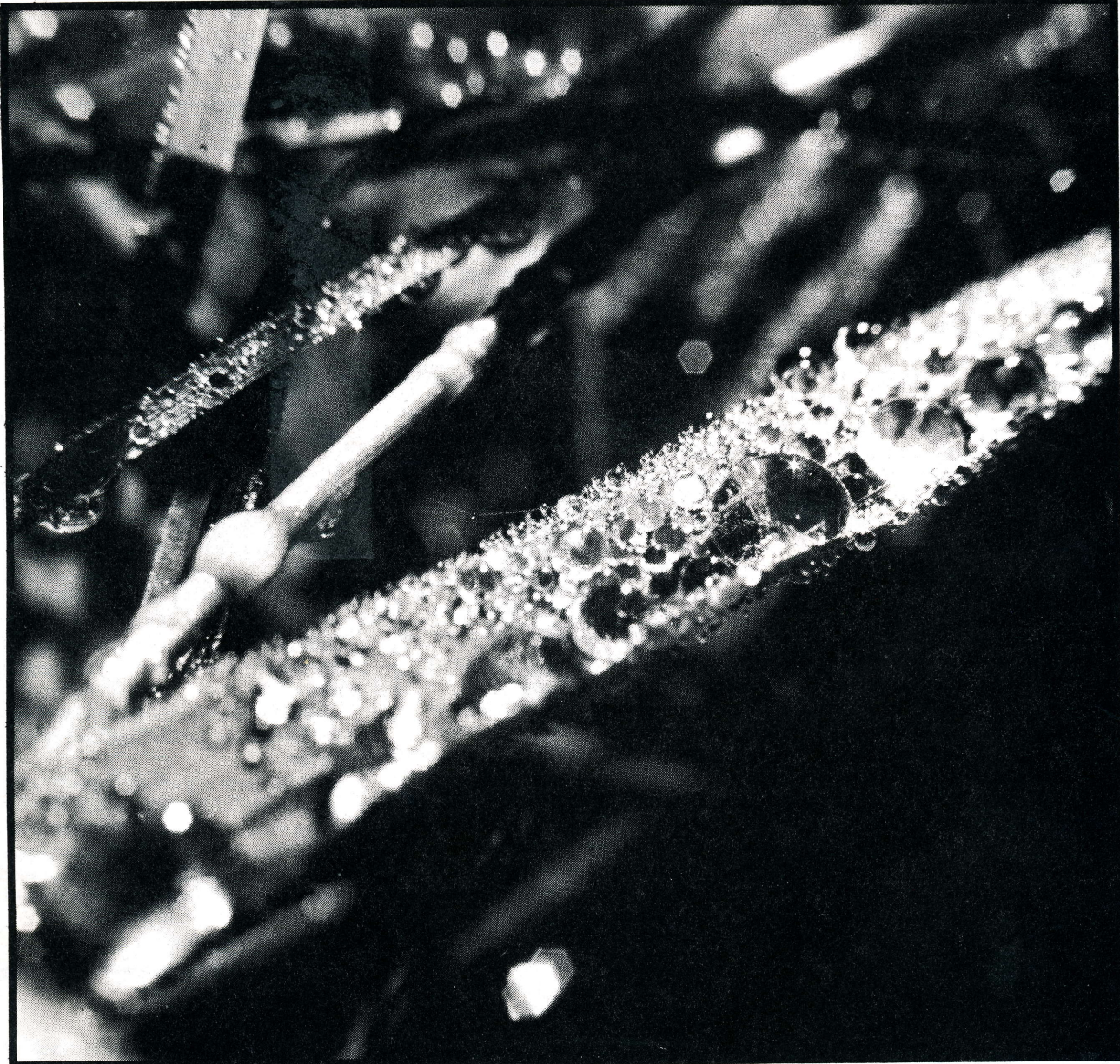
RAIN

Journal of Appropriate Technology

FEBRUARY/MARCH 1977

VOLUME III, NO. 5

ONE DOLLAR



Ancil Nance

INSIDE:

Excerpts from RAINBOOK

RAIN *access*

RAIN is a monthly information access journal and reference service for people developing more satisfying patterns that increase local self-reliance and press less heavily on our limited resources.

We try to give access to:

- * Solid *technical support* for evaluating and implementing new ideas.
- * *Ecological and philosophical perceptions* that can help create more satisfying options for living, working and playing.
- * *Up-to-date information* on people, events and publications.

AGRICULTURE

Herbal Handbook for Farm and Stable, Juliette de Bairacli Levy, 320 pp., 1976, \$3.95, from:
Rodale Press
Emmaus, PA 18049

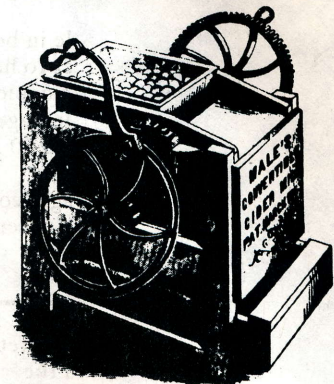
We didn't think our horses would eat garlic for worms but chopped with grain did the trick. Rodale Books are pretty neat. They've reprinted this long-time favorite first printed in 1952 in England.

"Whether you raise sheep, goats, cows, horses, chickens, bees or even sheep dogs, you will want Ms. Levy's fine book. The introduction sets the tone for the organic or natural livestock owner while the chapter on gathering and preparing medicinal herbs makes it possible to do-it-yourself and avoid harsh and sometimes dangerously manufactured veterinary supplies. Ms. Levy calls her chapter titled "Materia Medica Botanica" the most important part of her veterinary herbal, and rightly so. In it is a description of the chief

medicinal and nutritive herbs and their properties. Along with that she has included methods of preparation and dosage. Ms. Levy has written another herbal titled *Herbal Handbook for Everyone* listing herbs for human use." (Joel Davidson)

The Soil Factor in Nutrition: Animal and Human, Kenneth C. Beeson and Gennard Matrone, 147 pp., bibliography, index, 1976, \$19.75 from:
Marcel Dekker Inc.
270 Madison Avenue
New York, NY 10016

Those people looking for information on how various farming and gardening systems and techniques influence human and livestock health will be disappointed with this book. Mycorrhizae, the rhizosphere effect, and root interaction between higher plants are not even mentioned; humus and organic matter receive polite but very scant recognition, and the theory and practice of organic farming is dealt a typical USDA style putdown and dismissal as the "organic cult." This book's value is in its soil chemist's perspective on nutrition for nutritionists. It describes the extent of current understanding of soil mineral/plant growth/animal health relationships, concentrating on calcium, phosphorous, iodine, cobalt, selenium and a few others. Most of the examples deal with livestock deficiency studies and regional geochemical evaluations. Most of the references are dated from the 1940s and 1950s, though more recent citations are presented and the bibliography is helpful for the reader who wants to go deeper into the subjects which this book introduces. I would recommend this book to students of nutrition, which includes all of us, right? But at \$19.75, this short, sparsely illustrated, cheaply produced volume is an outrage—don't consider buying it—order it through your inter-library loan system. (Woody Deryckx)



Tools for Agriculture: A Buyer's Guide to Low-Cost Agricultural Implements, 2nd ed., John Boyd, 1976, \$11.50 from:
Intermediate Technology Publications
9 King Street
London WC2E 8HN England

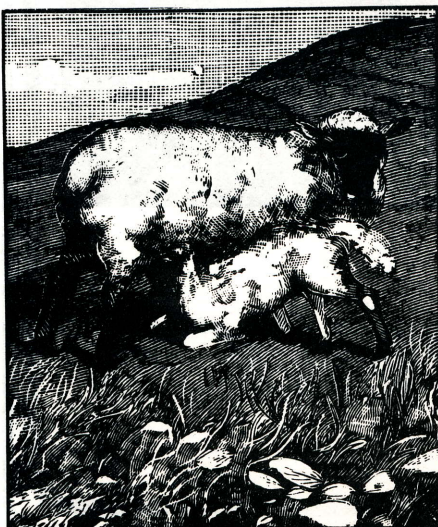
A well-illustrated directory to more than 250 manufacturers and more than 600 hard-to-find implements from around the world. Hand, animal and small-engine powered equipment, with access to research organizations and manufacturers.

Rodale Press is putting together an American edition and would like input from small inventors and manufacturers . . . unknowns, people doing unique things. Contact Diana Branch at Rodale (33 East Minor, Emmaus, PA 18049) soon.

HEALTH

Behold Man, by Lennart Nilsson, 1973, \$25 from:
Little, Brown and Company
34 Beacon Street
Boston, MA 02106

If this beautiful treasure were put in every doctor's waiting room, it would probably bring about a whole new attitude towards ourselves and our health. 350 exquisite photographs of the human body taken by the Swedish photog-



RAINBOOK:

Resources for Appropriate Technology

All in one place—256 pages of the finest resources for appropriate technology we've been able to pull together over the last 2-1/2 years. The best of RAIN, plus at least as much new material—everything from compost toilets to solar greenhouses to community economics, municipal utilities, land trusts, health self-care, maps, community radio stations and natural pest control. Fully indexed for easy access.

RAINBOOK will be available in bookstores or from Schocken Books in May, but we expect to have copies available for RAIN readers about April 1. Single copies can be ordered from us for \$7.95 (see order blank on page 23). Bookstores should order from Schocken Books, 200 Madison Avenue, New York, NY 10016.

Many of the following pages contain excerpts from the RAINBOOK that you haven't seen before. Enjoy.

—LdeM



rapher whose sensational photos of fetus development appeared in *Life* in the 1960s. Not your normal pictures these, but photographs of clouds in the sky as seen from inside the eye, the path taken by smoke being sucked into the lungs, synapses in the brain, fallopian tubes and mystically haunting photos of fetuses. They make clear the incredible beauty of our bodies. You won't feel the same about yourself once you've seen this.

Photographic Anatomy of the Human Body, by C. Yokochi, 1971, \$14.50 from:

University Park Press
Chamber of Commerce Bldg.
Baltimore, MD 21202

If you're curious and not too queasy, this will provide fascinating enlightenment about how everything goes together inside us. Photos of cutaway sections through complete torsos, a body from which the skin is removed showing how all the muscles go together. Every major organ and system in the body is shown in both exterior and interior detail.

ENERGY

The Accident Hazards of Nuclear Power Plants, Richard E. Webb, 1976, 228 pp., \$6.95 from:

University of Massachusetts Press
Amherst, MA 01002
Amazing. Now I know that WPA means

"worst possible accident," none of which AEC-ERDA have included in their list of DBA's ("design basis accidents") used in planning reactor safety, that "power excursion accident" probabilities have never been verified in a large core, and that there have been 14 accidents and near-accidents in the world's nuclear reactors. An excellent primer to what starts nuclear accidents, keeps 'em going and stops them; the gaps in the Rasmussen Report; and an intro to the jargon of LOCA, SCRAM and PCMA.

Energy & How to Conserve It, Ken Cooper, Oct. 1976, 17 pp., \$1.00 from:
Canadian Self-Help Housing
Association
P.O. Box 4134
Vancouver, Canada V6C 1Z9

We've told you about lots of home energy conservation resources, so this is mainly for all you enthusiastic fanatics who want to keep up with the latest, neatest stuff and have a copy despite the obvious redundancy. Think of *all* you've read in 20 different places; this item distills it to 17 lean pages chockful of nitty-gritty numbers and hints. Your eyes will work following the tight, single-spaced typing but will be rewarded with three curtain and shutter designs for windows, economic analyses comparing once mundane techniques now vital to personal comfort and national survival, such as passive solar and the full range of heating systems, and the fact that you've got it all in the palm of your hand.

WANTED: Alternative Energy Activists for the New Western Energy Show. If interested, send resume to:
David Nimick, Co-Director
New Western Energy Show
435 Stapleton Bldg.
Billings, MT 59101

The New Western Energy Show is planning its second summer traveling extravaganza through eight Montana towns and is looking for people to join the troupe. In particular, we need one technical person with experience in design and construction of renewable energy systems, public speaking, general carpentry, plumbing and electricity. We also are looking for several theater people who can act, dance, sing or juggle, plus play an instrument or two.

Using theatrical productions, technical displays and presentations and a little bit of magic, the show attempts to inform people about renewable energy (sun, wind, bio-gas, wood, water, conservation, recycling and alternative farming). All troupe members use their particular talents where they can in the show but share other duties such as cooking and cleaning, answering questions at the information booth, deciding show policy and program, etc.

All troupe members will join us by June 1 for a month of preparations before our tour during July and August. Pay will be \$750, including room and board for the summer.

For good citizen involvement, participation, or whatever you want to call it, we feel you need what we've been calling feed-forward—that it's kind of dishonest to give people input into a decision-making process if they don't have enough information beforehand as a base from where they can make clear decisions.

Many of the citizen participation systems that have been developed are very one-sided, where people are just asked to comment through various channels, like questionnaires in land use planning, or newspaper balloting.

Not only do the people need an information base, "feed forward," it is also important, and something lacking in many citizen involvement projects, to give the people feedback about their input.

Mapping and Graphing Community Points of View describes one possible way to present information gathered during a community involvement planning process.

The "Access" project in Santa Barbara outlines a way to

make information available to a community which will allow them to make proper decisions.

Another problem with citizen participation programs is that they are not what I call iterative, that is they don't have cycles or loops. They usually consist of one feedback process, with no follow-up or further clarification.

P: When we talk, like we are now, we go back and forth; it is a dialogue, and often it involves "meta-communication," like "I don't understand what you said," or "Could you clarify that?" or "Do you mean: ?" These are necessary kinds of questions that help us see if we are really communicating. People in a community dialogue have to agree on terms, what the subject is, what the next step is, and many complicated things that demand cycles, dialogue, back and forth conversation.

S: So where is all this citizen participation stuff going?

P: I think it's going in the direction of a large-scale process that informs people about what the issues are in a community,

CITIZEN PARTICIPATION

Televote

American Institute for Research
P.O. Box 1113
Palo Alto, CA 94302

The televote system is a way to inform citizens about public issues, and in return get informed opinions. Relevant facts and opposing views are sent to all interested citizens; they then have a week to express their opinions by dialing certain numbers on the telephone, including a special televote number which assures that only one vote is counted from each person. Results are processed by computer and delivered to public officials and the media within a day after the televote ends.



Yosemite Planning Team

Golden Gate National Recreation Area
Fort Mason
San Francisco, CA 94123

Here's an example of a federal bureaucracy responding to public pressure in a positive way. When the word went out on the grapevine that a huge new development, including convention facilities and shopping center, was planned for Yosemite National Park, all hell broke loose. Suddenly an advisory committee was set up and a planning team hired to obtain citizen input on the future of the park. 48 public workshops were attended by 5,600 people and a very detailed questionnaire including options to un-develop portions of the park was sent out to 59,000 people. 20,700 people responded, and a new development plan is now in the works. We suggest anyone interested in citizen involvement in any form write for copies of the questionnaire and the summary. They're excellent models. Thank you, Department of the Interior! (LdeM)

Land Conservation and Development Commission

1175 Court N.E.
Salem, OR 97310

The LCDC has coordinated some of the most extensive citizen participation programs in the country. They have been viewed as successful by some, and by others as inadequate. A referendum to do away with LCDC was recently defeated in Oregon. While not having any new technologies to citizen participation, they've had lots of experience.

Information, Perception and Regional Policy

National Science Foundation
Division of Intergovernmental Science and Public Technology
Technology
Washington, DC 20550

This report summarizes the concept, design and evolution of the ACCESS (alternative comprehensive community environ-

in the nation or in the world, and then a way of allowing alternative methods of participation in the decisions about these issues, and it will have to be a process that allows people to step in exactly to the degree that they can or want to.

S: But what about in just, say, the next year or so?

P: More token programs until people will finally stop participating. You'll look in the newspapers and see the possibility of going to ten different workshops to involve citizens in this or that, and give up. Once everyone burns out, after no one wants to attend anymore, the bureaucracies get tired of citizen participation, in the present state of the art, and the courts say, but you got to do it, and then it will all go kapooey and things will change.

The bottom line, though, eventually, is a complete evolutionary leap in how we govern ourselves.

S: I think you've told me before, though, how you don't see that there should be some kind of gigantic centralized citizen participation process, that the varieties are important.

P: We have got to make a large-scale social commitment for allowing, facilitating and supporting diversity. We still see ourselves as separate and unable to work together. We need to recognize our differences so we can see that we're different but not separate.

Like in biological systems which have lots of variety. They can handle a lot of information flowing through them. But if you have a rigid system, then almost anything will make a big difference. If you have a varied, diverse system, then information coming in will be considered and handled by some part of the system, while other parts, the system as a whole, will go on.

This is part of a November 1976 conversation Steve and Rhoda held with Peter and Trudy Johnson-Lenz.

COMMUNICATIONS

mental study system) project in Santa Barbara. The project and the report address the problems of making information about community planning available and understandable to the general public. Lots of good "making the city (or system) observable" ideas.

Community Issue Dialogue
Northwest Regional Foundation
P.O. Box 5296
Spokane, WA 99205

NRF has received a large contract from HUD to investigate, develop and test methods for effective large-scale citizen participation. It calls for the first actual use of a balloting process developed by E.J. Corwin, and a version of the *Graphing and Mapping Community Points of View* computer program developed by Peter and Trudy Johnson-Lenz.

Participation Systems, Inc.
43 Myrtle Terrace
Winchester, MA 01890

In 1962 C. Harrison Stevens used networking techniques to win an upset election as a selectman in Bedford, Massachusetts. He has published many reports and a book on citizen involvement, information exchange, citizen feedback systems and networking. They have sheet size summaries of some forms of citizen involvement and do consulting workshops and carry out citizen participation projects in New York.

Journal of Community Communications
LGC Engineering
1807 Delaware St.
Berkeley, CA 94703

Still jockeying for its rightful place, unsure of what community communications is, but a really important area: the place of community communication technology (which they define as many-to-many, e.g. computers, vs. the one-to-many, e.g. broadcast media). \$10/year.



"Information and the New Movements for Citizen Participation," Hazel Henderson, in *Annals of American Academy of Political and Social Science*, March 1974, pp. 34-43.

An important treatment of the role of information in citizen participation.

"Many citizen leaders realize that all institutional structures are, by definition, designed to screen out any information they perceive as unwanted or irrelevant so as to better concentrate on the purposes for which they were organized—hence, their capacity for selecting, concealing, distorting and impounding information and the resulting shortcomings of their planning and goal setting processes."

MIT Community Dialog Project
Prof. Thomas B. Sheridan
MIT 1-108
Cambridge, MA 02139

This project studies the facilitation of group meetings using electronic voting aids and other procedures. It evaluates this technique as a function of the topic, participants and moderator of the group. Also into cable TV citizen participation. 43 pages, from Prof. Sheridan.

—Steve Johnson

AIR SHIPS AND SAILING SHIPS



Attention has recently been turning to forms of water and air transportation that don't require the massive fuel subsidies of our present ships and planes. Advancement in understanding of aerodynamics of sails and of the planet's wind systems offer improvement in cruise time of sailing ships. Design of low-power electric winch systems to replace the large crews necessary to operate the sails allow greater potential cargo space. Putting these and other advances together, the School for Naval Architecture at the University of Hamburg, Germany, has been refining designs for "Dyna-Ships," which promised, even before recent fuel price increases, to give a 30 percent greater return on investment than comparable conventional ships. For more details, see: *Energy for Survival*, Wilson Clark, 1975, \$4.95 from Doubleday & Co., 45 Park Ave., New York, NY 10017.

"Return of the Tall Ships," James McCawley, *Rudder*, 1971.

"The Sailing Ship in the Fuel Crisis," Basil Greenhill, *The Ecologist*, Sept. 1972. (Gatesby, Molesworth St., Wadebridge, Cornwall, GB)

Lighter-than-air craft are also getting renewed attention. Balloons are now used in some forestry applications. Goodyear Corporation has proposed greater use of cargo-carrying dirigibles in this country. And the German firm WDC has been testing a modern lighter-than-air craft over Accra, Ghana, to prove that the ship, costing only one-eighth of a comparable jumbo jet, is a superior means of transporting crops, minerals and people in areas not serviced by a network of roads.

Airships: An Illustrated History, Henry Beaubois, 1973, \$35 from:

Two Continents Publishing Group Ltd.

30 E. 42nd Street
New York, NY 19917

A fancied-up, profusely illustrated coffee table book, but gives fascinating coverage of the evolution, design and details of lighter-than-air craft. Also contains an overview of current experimental projects in various countries that were presented at the London and Paris conferences in 1971 and 1973. A good introduction to lighter-than-air craft.

Water transport by barges has never really lost its cost advantages for moving bulk materials. Canal cruising has also been a favorite peaceful vacation in England, the Netherlands, Finland, Germany and other areas. The *Mariner's Catalog Number Four* (\$6.95 from International Marine Publishing Company, 21 Elm Street, Camden, ME 04843) as well as previous catalogs contains an incredible wealth of resources for anyone interested in ships, water and ocean life. Number Four also contains a review of *Canal Enthusiasts' Handbook No. 2* from David and Charles, North Pomfret, VT 05053 (\$10.95), which they recommend as *the* source for anyone interested in canals and canal transportation.

Lighter than Air Society Newsletter
1800 Triplett Blvd.
Akron, OH 44306

Active memberships, including the newsletter, are \$6/yr. 1977 will be the 24th volume of the newsletter.

—Tom Bender

\$8 a Gallon for Gasoline?

How many of us would still consider the automobile a wise transportation choice if gasoline cost \$8.00 a gallon? Most of us would scream highway robbery and foam at the mouth in rage—but that is what gasoline would cost right now if automobile transportation wasn't guilty of some of the most massive tax evasion and taxpayer subsidy in history. Even including the cost of car payments, insurance and repairs in addition to the cost of gas and oil, we are paying less than half of the true cost of automobile travel. As a result of not paying the full cost, we use and waste more of it than we would if we paid the real bill.

The additional \$7.50/gallon above the present cost of gasoline and gas taxes represents the user taxes that would be required to pay some of the most obvious costs presently avoided by highway users. Half of it is the cost of congestion, traffic accidents, and air pollution directly resulting from but not charged to the automobile. The other half is coughed up by everyone who pays property taxes—in the form of higher taxes resulting from streets and highways not being included on the tax rolls. A recent study of New York City showed that such tax losses there exceeded \$1.14 billion per year.

Paying \$7.50 per gallon as a gasoline tax wouldn't mean any increase in costs—it is merely the amount that we (or someone else) are *already* paying in hidden subsidies to the automobile. Having to pay the full costs would obviously curtail much of our excessive highway building and use of automobiles and trucks. If we paid the *total* cost of automobile travel at the gas pump each time we chose to use the auto instead of having most costs paid separately in monthly payments, insurance, property taxes, etc., we would be more aware of what we really pay for this service. All included, we would have to pay more than \$15 per gallon of gas—which would make the cost of a bus or train ticket seem the real bargain it is!

Automobiles will become an increasing burden as the cost of fuels and maintenance of our massive highway system increases, and beginning now to pay the real costs would provide an effective stimulus towards less expensive land use and transportation patterns.

For more details on the societal cost of the automobile to New York City and its region, see *Societal Cost Accounting: A New Tool for Planners*, by Brian Ketcham, 1976, available from Citizens for Clean Air Inc., 25 Broad Street, New York, NY 10001.

—Tom Bender

WIND

An Evaluation of the Potential Environmental Effects of Wind Energy Systems Development (ERDA/NSF/07378-75/1), available from:

National Technical Information Service

5285 Port Royal Road
Springfield, VA 22161

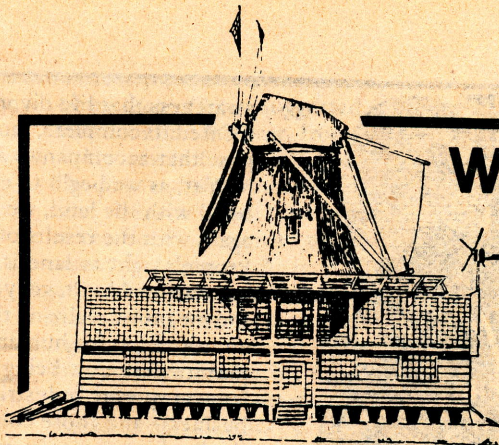
The first completed study on such questions, covering the degree that large-scale wind-turbine deployment induces changes in nearby vegetation, animal habitat and climate. As most people would intuit, the report supports the conclusion that windpower is benign in comparison to existing conventional energy systems. Very useful to anti-nuclear intervenors, electric utilities doing environmental impact statements on windmills, state energy agencies and college-level courses in environmental science and engineering.

"Wind Energy" by Bent Sorensen, in Bulletin of the Atomic Scientists, Sept. 1976, pp. 38-45.

An excellent introduction to the potential for large-scale wind-electricity, covering energy storage methods, the relative costs for wind- and nuclear-power, and their environmental impacts.

"Fresh Breeze for Denmark's Windmills" by Don Hinrichsen and Patrick Cawood, in New Scientist, 10 June 1976, pp. 567-569.

Very useful to nuclear plant intervenors as it contains a comparison by Bent Sorensen of the relative reliability (i.e. capacity factor) of a modern U.S. nuclear reactor and the existing Danish Gedser windmill with and without a 24-hour storage facility. Even that small energy storage makes the power availability of the windmill as good as that of the nuclear plant. In addition, a description of the Tvind Colleges construction of a 2MW, 3-bladed wind-turbine shows that the NASA-ERDA wind program, with a smaller 1.5 MW machine scheduled for demonstration in 1979, may be beat by a Danish vocational-industrial high school and college consortium in the "big machine" sweepstakes.



A Dutch Wind-Powered Sawmill

Converting wind motion into electricity then back to mechanical energy to run motors to pump water, saw wood, run shop tools or other industrial processes is expensive and roundabout. Using windmills directly to provide mechanical power can be considerably cheaper than wind/electricity and less than grid electricity in some situations. Water-pumping windmills, grainmills, and sawmills were common in the early part of this century, along with many wind-powered farm shops, and their economics are appearing more favorable again today. Used to stretch electrical supplies, or used independently with compressed air energy storage or possibly flywheel storage in the future, wind/mechanical systems deserve closer examination, along with their more glamorous sisters.

"Effects of Initial Production Quantity and Incentives on the Cost of Wind Energy" by Ugo Coty and Lou Vaughn, Jan. 3, 1977,

and
"The High Potential of Wind as an Energy Source," by Ugo Coty and Michael Dubey, May 19, 1976, for price and availability, send a self-addressed, stamped business envelope to:

Wind Energy Program
Dept. 75-21-63A
Lockheed-California Co.
P.O. Box 551
Burbank, CA 91520

Ugo's technically tempered enthusiasm seems to have broadly infected the entire Lockheed wind team, as exemplified by these excellent studies, which clearly lay out the increasingly promising wind-electric option for our nation. The first reports state, "It is concluded that without incentives [such as the billions still being spent on nuclear power] and with wind sites having 7 meters/second annual average wind-speed, the initial production quantity is 260 units to bring the cost of wind energy down to the present price of oil (2.6¢/kwh) for private utilities and down to 1.5¢/kwh for public utilities.

Wind-Mechanical Power

The Homemade Windmills of Nebraska, 1976, \$3 from:

Farallones Institute
15290 Coleman Valley Rd.
Occidental, CA 95465

Excellent reprint of classic survey, showing mechanical windmills pumping water, running direct-driven farm shop equipment, grinding grain, shelling corn, sawing wood. Community shops of the future will store energy via compressed air tanks to power air tools during slack wind periods.

Food from Windmills, Peter Fraenkel, 1975, \$8.15 surface, \$10 airmail from:

I.T. Publications Ltd.
9 King Street

London WC2E 8HN England

An excellent nuts and bolts case study of the development of low-cost, effective water-pumping irrigation windmills in Ethiopia. Economic, social and engineering factors evolved a Cretan sailing windmill at a cost of \$700 Ethiopian that out-performed imported Dempster pumpers that cost Eth. \$2,000 each. A fine account of various options developed and suggestions for further refinements.

Federal power agencies [such as BPA, TVA, Bureau of Reclamation] could meet the present cost of oil with wind energy from turbine generators with initial production order of 40 units." The 2nd report states, "A recently completed study sponsored by ERDA shows that the full potential of the wind is far greater than previously estimated." These publications are vitally useful to nuclear power intervenors, those opposing utility rate hikes and energy-oriented public interest and environmental groups, since they provide a solid economic basis for asking why wind energy, which can't rise in cost due to fuel price rises, is not yet being rapidly implemented by ERDA and utilities with the speed its economic costs justify. The plain fact is that the large wind-electric alternative is now cheaper than subsidized nuclear power in many areas of the nation. What's the hold-up?

—Lee Johnson

Alternative Sources of Energy (Rt. 2, Milaca, MN 56353) is now accepting proposals for the ASE Minigrants Program—\$200 or so for development of small alternative technology projects. Write them for details.



Only now, as we begin to face the loss of irreplaceable wilderness areas, agricultural lands and mineral resources, are there beginning to be heard those voices who maintain that the integrity of the land is a concern which demands our attention and to which we must respond. This renewed regard for the land has come partly from the blunt realization that it is a finite commodity and that human growth is occurring on a much more rapid basis than the land can possibly keep up with or support. But it is also coming from an increasing

awareness that life divorced from the land is somehow fragmented, incomplete, lacking the sense of stability and purpose that accompanies a land-based experience.

Yet, as we begin to explore ways of reestablishing our bond with the land, we find ourselves confronted again and again with the results of our past ignorance and carelessness. People's right to land is one of the most basic principles of our national heritage; yet, increasingly, we are being denied the means of realizing those rights. Lands that were once appropriated for human settlement and the growth of communities are now being increasingly owned or controlled by large corporate industries—mining, forestry, railroads, agribusiness—and those corporations are displacing people from the land at an ever-increasing rate. The American Public Domain—once encompassing seemingly inexhaustible areas—has shrunk almost to the point of memory. Lands that were taken forcibly from our Native American forebears are now being taken from us through the various more subtle methods that our society has since developed: increasing taxation, zoning, spiraling inflation and economic "efficiency."

There are several fundamental ideas that need to be considered. The first of these has to do with the way that we regard the land. This country—and this culture—needs a new land ethic: an attitude that considers the needs and requirements of the land *first* and which then attempts to foster human relationships with the land to the extent that the land itself will allow. This kind of attitude, instinctively a part of cultures that have maintained their ties with the land, has somehow been lost in our society, and we need to devise ways of making it known once again.

The creation of such a land ethic must of necessity begin with individual response. If we are to reestablish our bond with the land, each of us must examine his/her personal land sense, and seek ways of strengthening and increasing it. We need to work more closely with and upon the land, experiencing it, *feeling* it directly. And we particularly need to look to the land as a source of wisdom and learning—to, as the poet Gary Snyder has written, "accommodate the possibility that nature has a degree of authenticity and intelligence that requires that we look at it more sensitively." If we can culture this kind of an attitude within ourselves, then we will have achieved a first and critical step toward establishing a renewed land ethic in our culture.

LAND

by Becky Deryckx

Becky Deryckx is an articulate spokesperson for the land reform movement. And she lives it too: I've watched her putting splints on a newborn goat's weak ankles. She's involved in both the Evergreen Land Trust and Tiltb. Write her at 3138 Overhulse Rd., N.W., Olympia, WA 98502.

Land Settlement, Land Speculation, Land Tenure, Land Transfer, Land Utilization, The Encyclopedia of the Social Sciences, ed. by Seligman & Johnson, Vol. IX, The MacMillan Co., New York, pp. 53-137.

This series of in-depth articles provides an excellent introduction to the basic concepts pertaining to man's relationship with the land. Each presents historical perspectives and outlines some of the social consequences of given people-land developments, and they do an excellent job of including non-European viewpoints. Not at all outdated, they are a fine place to start; some of the statements, in fact, are as radical as

anything being heard today. Check your local library.

Land Reform

The People's Land, ed. by Peter Barnes, 1975, \$6.95 from:

Rodale Press
Emmaus, PA 18049

An excellent primer, *The People's Land* presents historical, contemporary and regional perspectives on land holding patterns in the U.S. and explores in depth some of the possible alternative institutions and policies that can create

a more equitable system of land tenure in America: co-ops, farmworkers' unions, anti-corporate farm laws, land trusts and many others. Contributors range from Thomas Jefferson to Ralph Nader; individually, they are both highly readable and concise, and together they present a good overview of the land reform movement in the U.S. today.

The Lands No One Knows, T. H. Watkins and Charles S. Watson, 1975, \$9.95 from:

Sierra Club Books
930 Bush St.
San Francisco, CA 94108

This is the kind of book that can take

people who are just moderately interested in the need for land reform in America and turn them into jump-up-and-down, screaming, hard-core radicals. The story of the American public domain, *The Lands No One Knows* traces the progressive loss of our common landed inheritance to the increased control of private landholders; it is a thoroughly researched account of the literal giveaway of hundreds of millions of acres to speculators and corporate interests. In the process, however, the book also portrays the tragic social patterns that have characterized the Great American Land Grab: fraud and corruption, racial exploitation and economic discrimination, and a wanton disregard for the needs of the land itself. It is a stark and devastating picture of what we as a people have already lost through mismanagement, abuse and our own confusion, but its major contribution is that, by providing such a clear picture of the effects of uneven land distribution it provides the kind of stimulation that is going to be necessary if we are to save what we have left for the generations who are to succeed us. An important—and very readable—work.

People and Land

An infrequent, but enormously worthwhile, publication, *People and Land* was originally published by the National Coalition for Land Reform in San Francisco. Intended as a means of distributing information and articles about land and people in America, *P&L* is the kind of publication that can give the American land reform movement a sense of cohesiveness. Due to a lack of financial support, the Coalition was forced to discontinue publication of *P&L*, but a new issue is currently being put together by National Land for People in Fresno, California. Write to them for more information, or contact the Coalition for information about back issues (both addresses are listed at the end of this page.)

Akwasasane Notes, suggested subscription donation \$6/year, from:

Roosevelt Town, NY 13683

The paper of the Mohawk nation, *AN* is an eloquent voice for the perspective of the Native American peoples on matters relating to the land and our cultural relationship with it. Fine articles deal with both the continuing legacy of exploitation and land deprivation which the Native Americans still suffer and—by sharp contrast—the Indian peoples' concepts of the land's sacredness and inviolate non-divisibility. Extremely helpful for those interested in banning the notion of land ownership from our cultural headspace.

A Bibliography on Land Reform in Rural America, Charles L. Smith, published by The Center for Rural Studies, now available for \$1.25 from:

Earthwork

1499 Potrero

San Francisco, CA 94110

Published in 1975, this bibliography is the definitive reference work for information dealing with land reform in America. Over 1,000 entries, referencing books and articles, periodicals and organizations currently on the forefront of the movement. A valuable tool—worth every cent.



The following are several short but powerful papers dealing with the need for a reassessment of our current land tenure system. While their individual contents overlap somewhat, they are all very worthwhile; their collective impact is greater than the sum of the parts.

The Sharing of Land and Resources in America, by Peter Barnes, \$1.00 from:

New Republic Pamphlets

1244 19th St., N.W.

Washington, DC 20036

A hard-hitting little book in which Barnes outlines the growing inequities of our current land tenure system and makes a solid case for redistribution.

It should be seen around more; its price makes it more accessible than *The People's Land*, in which Barnes explores some of the same concepts to a greater depth.

Rural Land Use: Patterns and Proposals for Reform, Ronald P. Erickson, published for the First National Conference on Rural America, 1975, by:

Rural Housing Alliance and

Rural America, Inc.

1346 Washington Ave., N.W.

Washington, DC 20036

Another brief but concise paper which catalogues the uses and misuses of American land and which provides statistical documentation as additional weight in its argument for widespread

reform measures. Write to the address given above; ask for Conference Working Paper No. 3. \$1.00 should do it.

Who Owns the Land?, Peter Barnes and Larry Casalino, 1972, Clear Creek, now available from:

Earthwork

1499 Potrero

San Francisco, CA 94110

Probably the most familiar and widely distributed land reform document now out; proposes appropriate and specific remedies for the misuse of America by timber companies, railroads, energy companies, agribusiness and other speculators. Includes a short but dynamic statement on land economics.

"Buying Back the Land: A Proposal for California," Peter Barnes, in Working Papers for a New Society, Vol. I, No. 2, Summer 1973

Quite obviously, Peter Barnes is one of the most articulate spokespersons in the American land reform movement. In this short (7 pp.) article, he outlines a state land trust fund as a possible means of redistributing the land. Deals specifically with California, but the concept may well be relevant to other states as well. Contact Earthwork for reprint info if you can't locate *Working Papers*.



The National Coalition for Land Reform RR 4

Creston, IA 40801

The NCLR is an organization made up of farmers, farmworkers, environmentalists and others who believe that "ownership of the land by those who live and work on it is the key to alleviating poverty, easing urban overcrowding, reducing welfare costs and unemployment and building a stronger democracy." Both a political and educational organization, the Coalition invites support and membership.

National Land for People 4696 North Millbrook Fresno, CA 93726

Probably the most highly political organization in the movement and certainly one of the most dynamic, NLFP has been concerned primarily



with the enforcement of the 160-acre limit on lands irrigated with federally-financed water in the Westlands Water District in California, but they are also emerging more and more as an overall clearinghouse for reform activists. As mentioned above, they are currently working on another issue of *People and Land*; they also have available for rent a couple of intensely eloquent films, *The Richest Land* and *The Dispossessed*.

Heathcote Center

**Rt. 1, Box 129
Freeland, MD 21053**

Heathcote Center is the home of The School of Living, which for more than 30 years has served as a voice for de-

centralism in the U.S. The Center sponsors workshops and seminars on all aspects of decentralist philosophy and application—including land reform—and is performing an important function in putting people interested in such matters into touch with each other. Home base, too, for *The Green Revolution*

**Institute for Liberty and Community
Concord, VT 05824**

Founded and directed by John McClaughry, the Institute serves primarily as a dispensing agent for McClaughry's numerous articles on decentralism and local autonomy. Write for their publications list.



Land Trusts

As one specific solution to the need for a new way of regarding the land and a new approach to land tenure, the concept of the land trust is showing a great deal of promise. Based on the notion that, because land is the common resource of all people, it must be stewarded in such a way as to protect the long-term common interest, the land trust holds title to the land in perpetuity and grants use rights to the occupants only if they abide by the conditions which define that common interest. Still a rather difficult idea to grasp in a society which places so much emphasis on land ownership, the land trust has been successfully implemented on a widespread basis in India, Israel and Tanzania as a means of providing the peoples of those countries with a more equitable opportunity for land access. In this country its growth and acceptance have been much more restricted; trusts have begun to be considered as a viable alternative only within the last couple of decades, and as a result the land trust movement in America is still in a fairly embryonic state. Numerous trusts—and types of trusts—are arising, however; and increased familiarity with and support for the land trust concept should result in its more widespread application as an alternative land-holding mechanism.

The Community Land Trust: A Guide to a New Model for Land Tenure in America, Bob Swann, 1972, \$3.50 from:

**International Independence Institute
West Road, Box 183
Ashby, MA 01431**

An excellent introduction to both the idea and its application, the *CLT Guide* examines the history of land tenure systems in other cultures, traces the beginnings of a single large land trust in the U.S. rural south, offers suggestions about setting up legal structures and provides numerous examples of existing trust documents. Now a bit outdated due to the number of trusts that have arisen since it was published four years ago, the *Guide* is nevertheless the only book that is currently available on land trusts, and it remains well worth the money. III is now in the process of preparing a sequel to the *CLT Guide*; the new book should be ready early next year and will bring developments in the movement up-to-date.

Since 1967, they have been providing people with information and consultation about land reform, land trusts, credit and financing alternatives and the creation of viable rural economies. Write for their complete publications list and sample newsletter; subscriptions \$10/year.

The Maine Land Advocate, quarterly, subscriptions \$5/year from:

**Box 653
Bangor, ME 04401**

The MLA focuses on what is going on with general land issues in the New England area, but it also includes fine in-depth articles on land trusts specifically. The MLA has been around for several years now; its staff are good folks to contact for information about the development of the land trust from idea to practical application.

The Green Revolution, 10 times a year, subscription \$6 from:

**The School of Living
Heathcote Center
Route 1, Box 129
Freeland, MD 21053**

Long recognized as the voice of decentralism in America (the GR has been published for nearly thirty years), this fine publication has begun to place increased emphasis on land trusts and is showing signs of developing into a regular exchange medium for people who are involved with promoting their acceptance.

"A Proposal for a State Land Trust Act," John McClaughry, *The Harvard Journal on Legislation*, June 1975, Vol. 12, No. 4

An example of one way that the land trust idea could be applied on a wide-spread basis in the U.S. McClaughry proposes legislation that would establish a State Land Trust in Vermont, with trustees appointed by the governor and income for the Trust to be derived from a 1% tax on real estate transfer. The State Land Trust's purpose would be to protect open space woodlands and agricultural areas from overdevelopment, while at the same time providing farmers with relief from excessive tax burdens. Linked with the notion of transferable development rights that has been tried in several eastern states (mentioned in the section on Land Reform), McClaughry's proposal cuts through many of the problems that usually accompany that notion and enables the benefits from the legislative process to go to the grass-roots level. The idea is a complicated one, but it is an important consideration for those who are interested in seeing legislation help to implement land trusts at the local level. (See below)

COMMUNITY LAND TRUSTS

Of the several different types of land trusts that are now emerging, CLTs are in many ways the most exciting. Widely decentralized and usually arising from the personal dedication and commitment of individuals and small groups, Community Land Trusts consistently share a concern for making land available to people who, for economic or social reasons, could not otherwise obtain access to it. It is with the Community Land Trusts that the different implications of the land trust idea are being explored and tested most fully, and because they are so closely tied to the communities in which they function, the CLTs stand the best chance of enduring over the long run.

The following is a list of several trusts across the country which, because of their emphasis on community involvement, are good sources of information and how-to advice. Virtually all are subsisting on shoestring budgets, and they incur a lot of out-of-pocket expenses; small donations to cover mailing costs will be much appreciated (and will probably speed answers!).

The Sam Ely Community Land Trust
136 Maine Street
P.O. Box 116
Brunswick, ME

One of the oldest CLTs in the country, Sam Ely publishes the *Maine Land*

Advocate (cited above). A good group to be in touch with; they're thoughtful and responsible in their promotion of trusts.

The Evergreen Land Trust
P.O. Box 303
Clear Lake, WA 98235

The first land trust in the country to receive a federally non-profit, tax exempt status, Evergreen is working on developing other legal precedents for the movement. ELT is also one of the more flexible/creative trusts currently in existence, looking at ways that the trust concept can be made applicable to a wide variety of possible situations and individual needs.

Abnaki Regional Land Trust
Putney, VT 05346

One of the quieter but more successful trusts in the country, Abnaki is expanding steadily. Good ideas, good approach. It *works*.

The People's Land Trust
1000 Harris Street
Bellingham, WA 98225

The People's Land Trust is unique in that it is, thus far, an urban-centered trust. Holding title to about half a dozen houses and a community-use building in the town of Bellingham, People's can offer assistance in dealing with various potential problems connected with urban properties held in perpetuity.

Northern California Land Trust
330 Ellis Street, Room 504
San Francisco, CA 94102

Organized for the specific purpose of providing farmable lands to otherwise disenfranchised people, NCLT has this year acquired its first piece of land and has placed occupants upon it. Because it has been relying entirely upon gifts of land and money to further its goals, NCLT is currently trying to reconcile a slow *actual* growth with the vast num-

bers of inquiries that they are receiving from people who would like to occupy trust lands. They publish a newsletter (\$3.00/yr.) and offer membership (\$6.00/yr.) as an added means of drawing those who are interested in their activities into closer involvement.

PUBLIC LAND TRUSTS

Another effective type of land trust that has arisen in the U.S., the public trusts are attempting to free large amounts of land from the speculative market by operating on a more professional, big-money level. Both of the following organizations have been highly successful in this regard; and while neither is trying to provide people with places where they can live on the land, they have done much to set aside public-use areas such as greenbelts, parks and wildlife preserves.

The Nature Conservancy
1800 North Kent Street
Arlington, VA 22209

With offices in many parts of the country, the Nature Conservancy has acquired numerous areas for public access. Their emphasis is on wilderness land; they have initiated many local programs in regional inventories of unique areas. (Northwest Office: 1234 N.W. 25th, Portland, OR 97210).

The Trust for Public Land
82 Second Street
San Francisco, CA 94105
415/495-4014

Similar to the Nature Conservancy but more oriented toward urban/suburban open space property. They have a highly polished approach and have managed to convince various large corporations and wealthy landowners to give land to the public through them. Currently setting up an intensive—and expensive—training program for those who are interested in promoting this particular approach to the land trust idea.

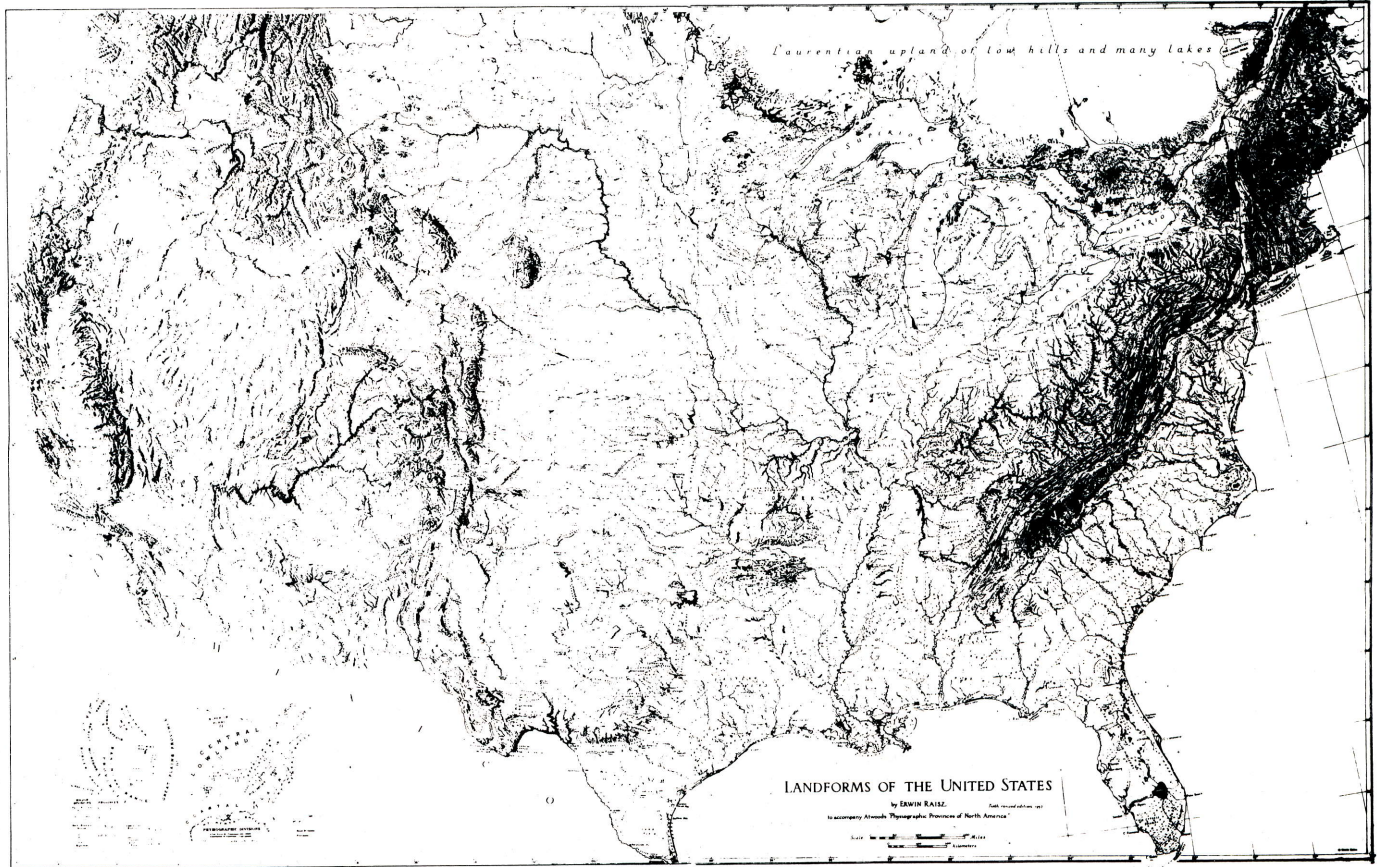


Henderson's Early Summer Cabbage.

The political regions of our country have developed with total disregard for the realities of our land and our regional cultures arising from that land. Our "melting pot" mythology has attempted to erase local and regional cultures—but it has yet to erase the landforms, climate, soils, vegetation and living creatures that constantly bring into being regional personalities and cultures in response to the unique problems, potentials and rhythms of each place. Those regional lives and cultures

are essential and will endure beyond any artificial political boundaries.

A look at one of Erwin Raisz's intricately beautiful landform maps of the U.S. (No. 3—\$1.00 from Erwin Raisz, 130 Charles St., Boston, MA 02114) gives real meaning to the regions shown here, which respond like a well-fitting shoe to the different landform regions. These regions have shared problems, potentials and lifestyles which sharing among the people of the regions can do much to improve. The life of



Regional Perspectives

Maps are useful when things get too big or complex for us to tie together in our own memory and perception. Recently applied tools that permit mapping underwater, at different wavelengths than visible light, or from earthorbit create maps that coalesce together a new feeling/understanding of our places. Get together the following maps, put them all up on a wall, and you're ready for some fascinating travels.

Landforms of the United States, \$1 from:

Erwin Raisz (Map No. 3)
130 Charles Street
Boston, MA 02114

The only maps most of us are used to seeing are highway maps that make it look like there's nothing in this country but freeways and road numbers. There may not be, but if you peel off those

roads and look at the contours of the land beneath, you end up with the beautiful Erwin Raisz landform maps. You can pour over these for hours—discovering that the hills of northeast Indiana are terminal moraines of glaciers and the old shores of Lake Erie, or follow the cleft of the Hudson River and Lake Champlain all the way from New York to Montreal, or see the cliff over which Niagara Falls stretches for miles across upstate New York. Write for list of other maps.

Portrait U.S.A., for price and other offerings, write:

National Geographic Society
17th and M Streets, N.W.
Washington, DC 20036

Issued as a supplement to the July 1976 *National Geographic*, this is the first color photomosaic of the U.S. Pro-

duced from more than 500 separate satellite photos to provide a clear and cloud-free view, it's what we would look like if we had a real big mirror to look into, or were sitting on a chair in high orbit.

Potential Natural Vegetation of the Coterminous United States, \$14.50 from:

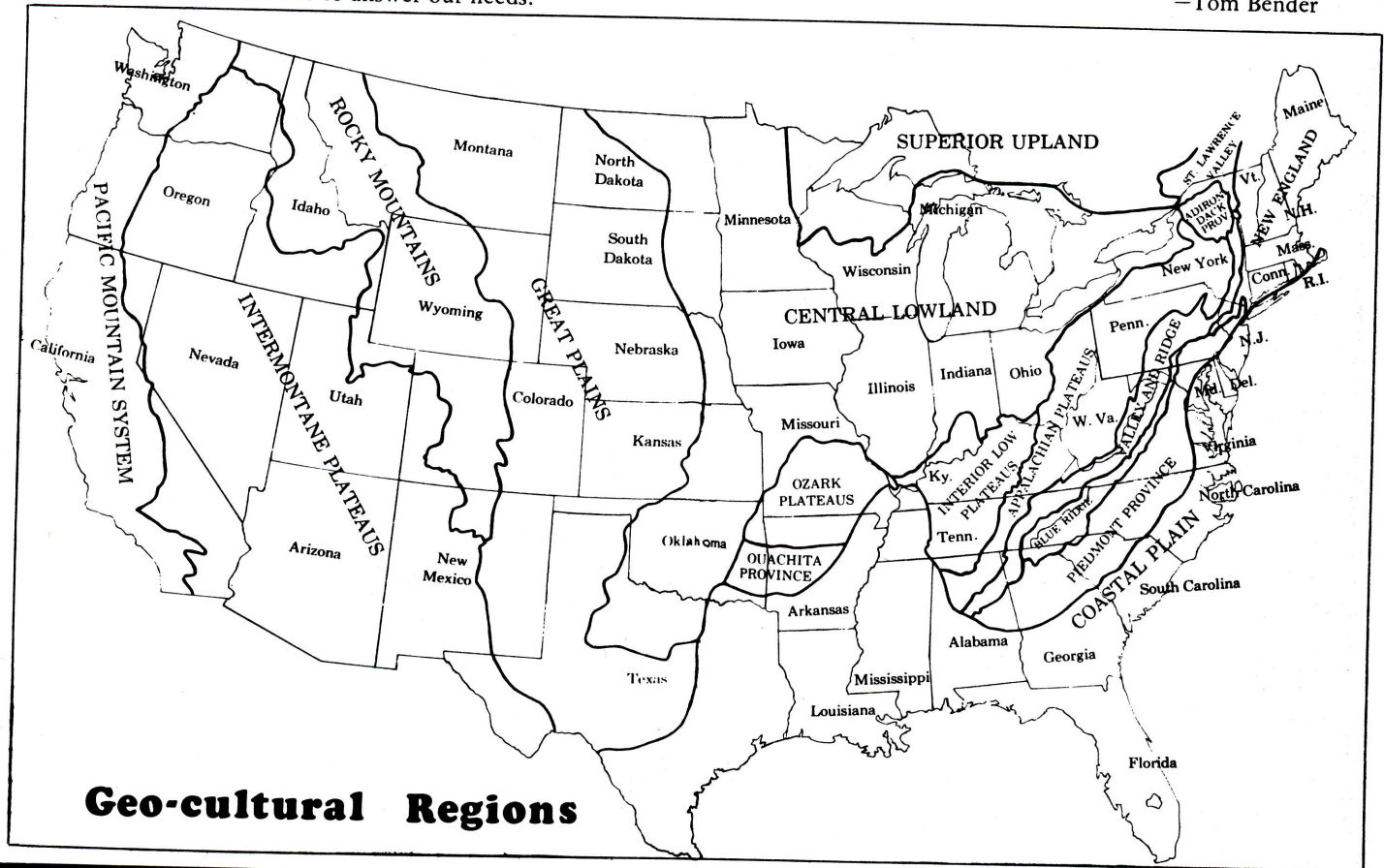
American Geographical Society
Broadway at 156th St.
New York, NY 10032

An overwhelming 65"x40" eight color map that lays out the location and extent of various plant communities in the U.S. They correspond, of course, with the landform and geology maps, and the population maps correspond to these. Forms the basis for meaningful bio-regions where similar and shared conditions provide a useful basis for a shared culture.

Tidewater, Virginia, is closer to that of New Orleans than to West Virginia. The myths of *Planet Drum* and *Ecotopia* are alive for the people of the Pacific Coast. The dryland farming of eastern Montana has more to share with that of the Texas Panhandle than with western Montana. Regional publications are arising to further the sharing of our lives and the meeting of our common needs. A sense of our regions and their cultures gives us a sense of place and of our roots as well as of where we can find resources to answer our needs.

Atlases such as the *Climatic Atlas of the U.S.* by Stephen Visser can give more detailed regional maps for topography, geology, climate, soils, flora and fauna—but they only bring into finer focus the general regional pattern. Different regions have distinctive features and resources, and much to share with each other, but our lives are nourished and formed dominantly by what is offered and required of us by the region in which we live. Know it well.

—Tom Bender



Geo-cultural Regions

World Biogeographical Provinces Map, 22" x 38", full color, \$3 postpaid from:
CoEvolution Quarterly
 P.O. Box 428
 Sausalito, CA 94965

Attempts to do on a world scale what *Potential Vegetation* . . . does so beautifully for the U.S. A good first attempt, and, given funding and expertise equal to the American Geographical Society, would hopefully provide a stunning new image of meaningful world regions.

Population Distribution, Urban and Rural, in the U.S. -1970, United States Maps, GE-70, No. 1 (Stock No. 0324-00224), 35¢ from:

Superintendent of Documents
 U.S. Government Printing Office
 Washington, DC 20402

This map shows population by white dots on a black map on a deep blue background. The U.S. appears as it does

from an airplane at night, with the necklaces of twinkling lights out of the darkness coalescing into the fairyland of urban areas. Shortly after we first saw this, an issue of *Astronomy* appeared with an infra-red satellite photograph of the U.S. on the cover which looked exactly like this population map.

The Floor of the Oceans, \$10 from:
 American Geographical Society
 Broadway at 156th St.
 New York, NY 10032

Ocean Floor Maps, inquire for available maps and prices from:

National Geographic Society
 17th and M Streets, N.W.
 Washington, DC 20036

The maps from the American Geographical Society cost about ten times as much as those from the National Geographic

Society, but *are* incredibly more beautiful and detailed. These maps deal with the two-thirds of our planet that is hidden from our eyes beneath a layer of water as well as an ocean of air. Rivers flow there, and vast mountains and plains reveal the growing pains of a cooling planet. There are deserts and fertile valleys and vast migrations of sand, water, plants, animals, fish, heat and wind. These maps give an amazing view into the geography of these regions.

Bio-Region Maps

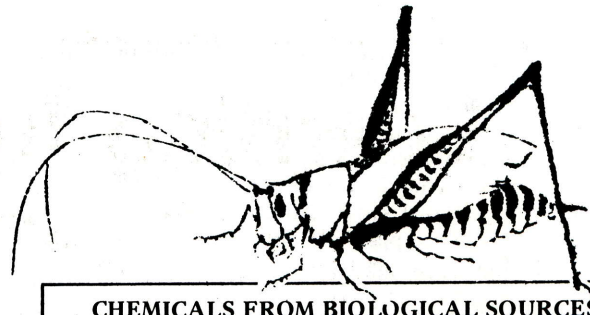
When you put these all together, you begin to discover a sense of bioregions—where geological, biological and cultural patterns coincide and co-evolve. These regions form a many times more useful organization for thinking and doing things than do the abstract and historically accidental boundaries of states or federal regions.

INVISIBLE TECHNOLOGY

The best technologies are often the invisible ones—where people have figured out how to avoid problems rather than to solve them. Often all that is required is a perceptual change such as seeing grasshoppers as an airborne mobile protein harvesting and conversion unit—a food source—rather than a destructive pest. Or living near where we work rather than building better transportation technologies. Or eating lower on the food chain so you don't have to pay for or grow food for the conversion losses of meat animals. Or planting trees rather than air conditioners.

The second-best technologies are also invisible. They're based on people's skills and relationships rather than machines—the skilled calligrapher drawing a line or carpenter cutting a line rather than needing a jig or machine; good neighbors rather than locks on doors; caring for the ill or elderly at home rather than in a Home; hiking rather than mini-biking; an auto mechanic or piano tuner's ear rather than a tuning machine. But there's always a range of skills and scales and situations where things need to happen, and we're interested in expanding the range of tools for situations that have been neglected, and learning when there are good reasons for choosing one scale rather than another. One size can't fit every situation well, and a technology that tries is likely not to fit *any* well.

Be resourceful, be clever, be wise.



CHEMICALS FROM BIOLOGICAL SOURCES	
Products obtained by dry-distillation of 1 ton of hardwood scrap (ca. 70% maple, 25% birch, 5% ash, elm and oak)	
Charcoal	600 lb
Gases:	5,000 cu ft
Carbon dioxide (38%)	
Carbon monoxide (23%)	
Methane (17%)	
Nitrogen (16%)	
Methanol	3 gall
Ethyl acetate	15 gall
Ethyl formate	1.3 gall
Acetone	0.7 gall
Creosote oil	3.3 gall
Sol. tar	22 gall
Pitch	66 lb

Alan J. P. Dalton, 'Chemicals from Biological Resources', ITDG

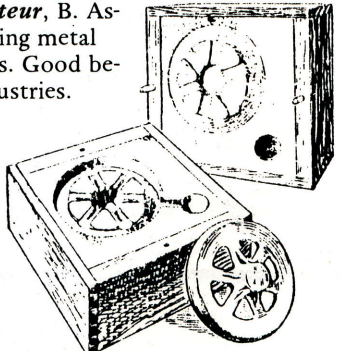
APPROPRIATE TECHNOLOGY SOURCEBOOK

Volunteers in Asia, 1976, \$4.00 from:
Box 4543
Stanford, CA 94305

Ken Darrow and Rick Pam have done a bang-up job with their second edition of their *Appropriate Technology Sourcebook*. It's an outstanding sourcebook for practical tools and techniques for village and small community technology. It focuses on books and plans with useful how-to information and draws on world-wide sources. A fine and useful complement to the *RAINBOOK*.

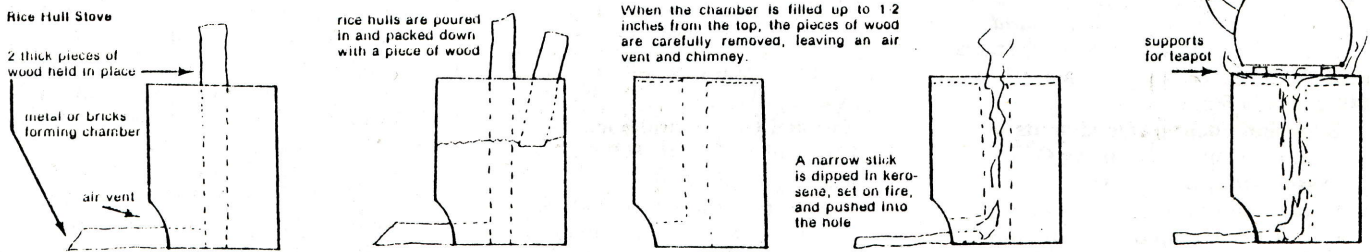
Sawdust or Rice Hull Stoves—simple processes for using waste products for cooking.

Foundrywork for the Amateur, B. Aspin—basic skills for producing metal tools and replacement parts. Good beginning for local repair industries.



A typical mold, with its pattern

Agricultural Green Leaflets (ITDG)—individual plans for agricultural equipment developed from African experience. Cassava grinders, paddy puddling tools, sorghum thresher, granule applicator, groundnut lifter, and more.

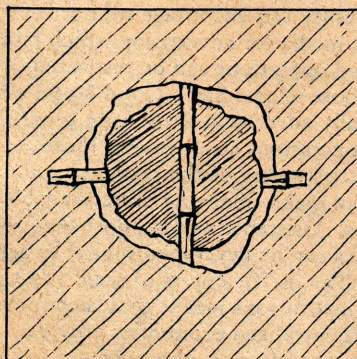


Learning from the Past

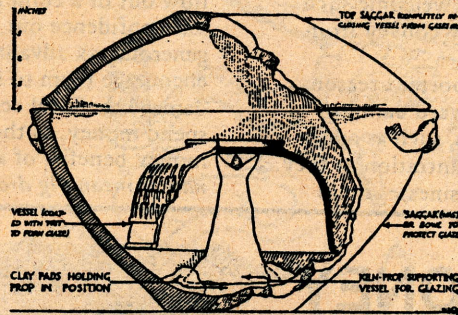
We don't have to start from scratch to develop ways of doing things that are more humane and more appropriate for our emerging resource conditions. We have the legacy of the work of millions of people throughout history who have explored untold numbers of different ways to do almost everything. They've forgotten more than we'll ever know, but a lot has been written down in these and other sources. Relatively minor changes in the balance of costs of people's work, materials and transportation have caused us to set aside perfectly workable techniques that are still valid. Compared, combined, improved, newly-understood, and openly shared, they can offer a lot. Most of the rest is scaling down, simplifying, borrowing from others, refining and trying.

Science and Civilization in China, Joseph Needham, 1962, from: Cambridge University Press
32 East 57th
New York, NY 10022

A vast goldmine of information on ways of thought different from our own and the incredible technologies developed over 4000 years in one of the most productive cultures on our planet. The volumes produced so far include introductory orientations, history of scientific thought, mathematics, sciences of the heavens and the earth, physics, mechanical engineering and building, chemistry and medicine. The volumes are very expensive (\$30-\$50 each), so get them at the library (or through inter-library loan).



MENDING OF CAST IRON. Sketch showing how a fragment of a cast iron is held in a hole of a cast iron brazier which is to be mended. The outer shaded surface represents the wall of the brazier in which the hole is found. Pieces of bamboo hold the mending piece in place and the space between mending piece and the edge of the hole is filled out by successive applications, one next to the other, of the liquid iron taken from the crucible. As soon as the mending piece is held fast in the hole by a few applications of the liquid cast iron (which cools as soon as applied) the bamboo strips are removed.



—Applying a lead-glaze to a vessel by firing it upside down on a pronged support inside another vessel (making a muffle-kiln).

History of Technology, 5 vols., Charles Singer, ed., 1954-58, \$53 each from: Oxford University Press
200 Madison Ave.
New York, NY 10016

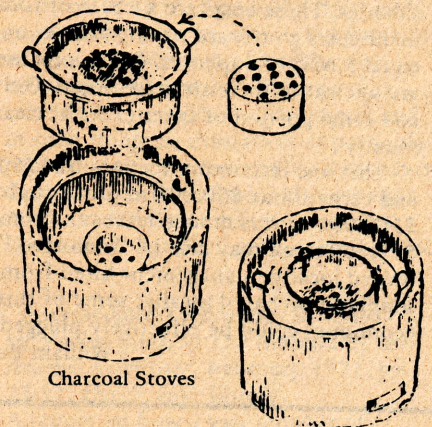
A massive collection of fascinating information on how things were done in different times and places—Ancient Empires, Mediterranean Civilizations, Middle Ages, Renaissance, and 19th Century. This does for the European culture what Needham does for China. Waterwheels and grain mills built on boats anchored in the middle of streams, how to make lost-wax castings and a wealth of other techniques that turn the impossible into the possible by just being clever.

Traditional Crafts of Persia, Hans Wulff, 1966, \$7.95 from: MIT Press
28 Carleton St.
Cambridge, MA 02142

Records in readable yet technically clear language the wide range of technologies of the traditional Persian culture: metallurgy and metal working, jewelry, lockmaking, woodworking, comb making, building, brickmaking, tiles and glazing, textiles, carpet weaving, irrigation, agricultural methods, windmills and oil milling. A wealth of valuable information.

China at Work, Rudolf P. Hommel, 1937, \$3.95 from: MIT Press
28 Carleton Street
Cambridge, MA 02142

The sometimes strange-seeming tools and ways of working of other cultures can be a mind-opening stimulus to rethinking our own patterns. Why do the Japanese pull their saws instead of pushing them? Why do some Chinese boats look so strange—with bow and stern twisted to opposite sides? How can such "primitive" tools work so efficiently? How could the Persians make their beautiful geometrically-inlaid boxes so cheaply? *China at Work* surveys the traditional Chinese tools and their uses—tools for making tools, producing food, making clothing, providing shelter and enabling transport. Excellent box bellows, how to mend cast iron, the Chinese origin of the "American" washboard, making roof tiles and caulking boats. The expedition that assembled this material was organized by Henry Mercer, whose tool museum in Doylestown, PA, is one of the most fascinating collections of tools in the world.



Science and Civilization in Islam, Seyyed H. Nasr, 1968, \$15 from: Harvard University Press
79 Garden Street
Cambridge, MA 02138

Far less comprehensive than Needham's masterpiece, but contains an extremely thought-provoking introductory section explaining the underlying purposes and practice of Islamic sciences—conceiving of science as a means for spiritual growth and considering an individual who specialized in one aspect of science or life to the detriment of others to be unbalanced and a danger to society and oneself. The basis of Islamic sciences can offer a valuable yardstick with which to evaluate our own.

BIG NAMES—BIG DRAINS

Most banks give preferential loan rates to big-name companies, chains and franchises wanting to open a local outlet, because their big name and big financial base gives them the appearance of being a better risk. And most communities welcome such big names because of the aura of big-time they convey from advertising.

Yet both banks and communities have important reasons to rethink these priorities and to go as far toward banning outside-owned businesses and the institutions, such as advertising, that reinforce such unproductive concentration as they can. For banks it's simple—outside-owned businesses drain

money out of a community (see box), while locally-owned businesses cycle and recycle money through the local economy and the local bank.

For the community the benefits of local ownership are even greater. A fast-food franchise that drains two-thirds of its cash flow out of a community also drains the life and power and self-confidence out of the town. Yet most communities offer generous tax advantages to such outside-owned enterprises to encourage them to locate there—assisting the very forces that damage the local economy. Such enterprises provide jobs and spend money, as they claim, but compared to the jobs and money benefits of a more locally self-reliant community, *big names mean big drains!*

EXPORTING MONEY

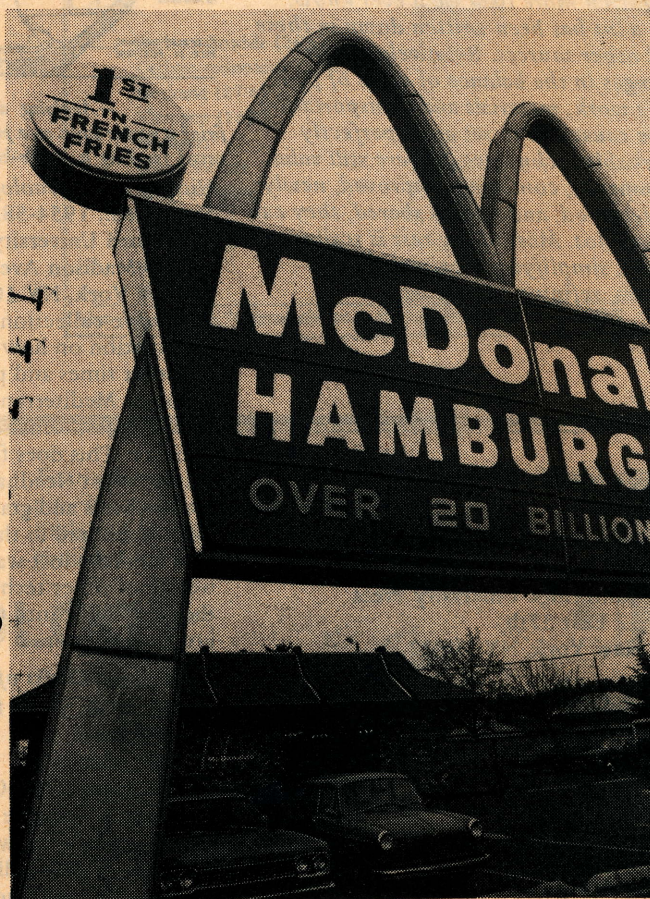
National fast food chains, like chain supermarkets, provide convenience, jobs and tax revenues to their service areas. And, like the supermarkets, they also export capital.

Figures were obtained on the financial status of one chain outlet (a McDonalds), located in an inner-city area. Corporations cost out their expenses, allocating to each restaurant its proportional share; this breakout is illuminating. If the figures from this one store are representative (and there is good reason to expect that they are, given the industry's standardized operations), then we all deserve a break.

Fully 20.00% of this store's costs immediately leave the community: advertising; rent (paid to a corporate subsidiary); a service fee paid to the corporation; accounting and legal fees; insurance; depreciation and amortization; and debt service. This restaurant, like all other outlets, purchases its food and paper supplies from other centralized corporate subsidiaries. These costs are 41.81% of total expenses. Management costs go toward paying salaries outside of the area and equal 5.62% of expenses. Other expenses, a total of 9.07%, are unclear in their ultimate origin. Only "crew labor" (15.04%) and some portion of taxes (1.93%) clearly remain in the community.

This one restaurant does about \$750,000 in sales annually and earns about \$50,000 in profits before taxes. Over \$500,000 of this money leaves the community; as much as \$67,500 more may also be "exported." Were the buildings owned locally, management hired from local residents and supplies purchased locally, some of this drainage from local economies could be effectively plugged.

—William Batko in *Self-Reliance*



CONTROLLING MONEY FLOWS

Our focus has so long been toward promoting bigness that it is difficult even to think how communities, states or regions can act to strengthen their economies from within and make them more self-reliant. Starting to do so will open up a flood of ways we can't even think of now, but a number of actions are possible even at this time. Communities can stop giving tax breaks to outside industry. States and cities can't establish trade restrictions, but they can raise sales taxes on everything and use the income to lower property or other taxes for local businesses, in effect making local goods cheaper. A large number of new businesses require some sort of code, zoning or other variances, and outside-owned businesses can be blocked

there. All businesses rely to some degree on local good will and are relatively sensitive to local threats of boycott, harassment or bad publicity. Making known the real economics involved within the community can encourage support of local businesses. Use of public media for advertising which inherently favors large, centralized operations can be restricted or banned. (Who would choose a local Sleep-Good Motel when all you hear of is nationally-advertised Road-Sore Inns?) Most local chain or franchise operations are financed locally—making local finance sources aware of the economics and community sentiment can make financing more available for locally-owned operations. Assistance and support services for setting up local businesses can be developed similar to agricultural extension services. The inefficiencies of scale and high overhead of centralized institutions means that such moves toward simpler, more decentralized economies provide a reduction in overall costs as well as an improvement for local economies.

Our building patterns generate externalized costs—freeways, powerplants, commuting time, and duplicated infrastructure. Accounting of a building's effects on such costs can make a solid case for different building patterns offering surprising savings.

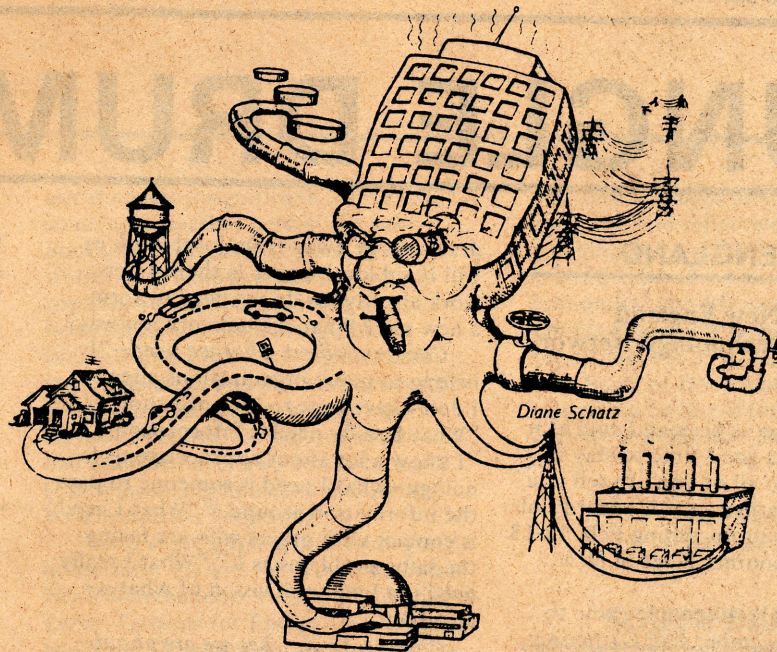
BUILDING VALUE

Building Value: Energy Design Guidelines for State Buildings, Tom Bender and Lane deMoll, 1976, \$3.25 from:

Office of the State Architect
P.O. Box 1079
Sacramento, CA 95805

Here's where the rest of our spare time went this fall in addition to doing the *RAINBOOK*.

Policy guidelines prepared for the California State Architect, containing a guide to design resources for energy-wise design, energy conserving landscaping, dry toilets, and economic evaluation. Outlines valuation of buildings to include lifecycle costs, externalized costs, and institutional per-



formance in addition to regular fiscal economics. The State Architect's guidelines for state buildings include low-flush toilets, solar heating, accounting

of unused solar energy as lost income to a building, source-stream energy analysis, and landscaping for summer shading of streets and sidewalks.

ECONOMICS

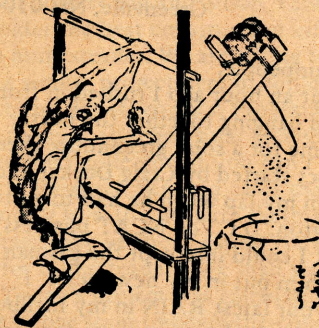
Priorities, donation requested, from:
American Friends Service Committee
980 N. Fair Oaks Avenue
Pasadena, CA 91103

A well-done newsletter documenting alternatives to a military economy. Recent issues have focused on the unemployment caused by military spending because of its capital-intensity, legislation dealing with the conversion from a military-dominated economy to a civilian one, and the effects of the federal research and development program in committing future expenditures on useless systems such as the B-1 bomber and the Trident missile submarines. Defense, space and atomic energy receive two-thirds of the federal research funds. *Priorities* presents the sound economics of alternatives.

The Defense Monitor
Center for Defense Information
122 Maryland Avenue, N.E.
Washington, DC 20002

Our journalists should be seeking out these kinds of people in the Postal Service, academia, banking or agriculture—finding people who can propose viable alternatives for public evaluation instead of merely publishing the official policy preferences of top bureaucrats. Legislators should require submission of alternative budgets and priorities by staff

people as well as by administrators. This is an excellent model—a newsletter containing evaluation of alternative military priorities, programs and budgets by professional military people who support a strong defense but oppose excessive and ineffective expenditures or forces.



Home, Inc., Scott Burns, 1975, \$6.95 from:

Doubleday and Co.
245 Park Avenue
New York, NY 10017

Our whole way of measuring economic activity is skewed towards large-scale production and consumption. If we do something very efficiently for ourselves, it doesn't count in our GNP. If we have someone else do it, even at great expense, the GNP says "Yeh! We're doing better." And, of course, we only count what happens from 8 to 5, five days a week, in "the office." Never counted is the at-least equal amount of work done at home, by housewives or housebands.

Buying labor-saving devices for the home so people are free to "go to work" so they can pay for the labor-saving devices so they can... is only running on a treadmill that gives the illusion of progress because we ignore the value of homework. Burns explores the economics of the home and shows that investment in the home in general and in such things as insulation in particular, provide a much greater value and return than almost any industrial investment. A whole dimension of our economic system that has been studiously ignored.

"Intermediate Technology in China" by Vaclav Smit, in *The Bulletin of the Atomic Scientists*, February 1977, pp. 25-31. Check your library.

A report on how a vast number of small-scale bioconversion, solar and hydro projects are strengthening the country's industrial base, especially in rural areas. Local energy self-reliance reduces the need for energy-intensive transportation and transmission of primary energy; reduces or even eliminates the need for using firewood, grasses or crop residues as fuel, which means they can be used for composting or as fodder or conserved. In the same way that the irrigation and flood control provided by small dams may be more economically vital than power, so also the improvement of hygienic conditions and reduction of infections and parasitic diseases provided by biogas generation may be more important than the methane gas and fertilizer produced.

JUNGLE DRUMS

NEW ENGLAND

NEAT-NET—New England Appropriate Technology Network

Hi,

With the snow as deep and cold as it is, it seems like a good time to stay inside and write to all of you—to tell you about our fall gathering at Goddard College and about our upcoming Feb. 12-13 conference at Another Place in New Hampshire.

Approximately 40 people came to our two-day November Fall Gathering, with another 20 or so dropping by for the day. The group was diverse in background and interest. Here is a sample of those who attended:

Bruce Anderson—Total Environmental Action

Bart Bales—appropriate technology network organizers in Conn.

Earl Barnhardt—New Alchemy Institute

Kirk Gardner—Vermont Dept. of Agriculture

Christel Holzer—Abnaki Land Trust, American Friends Service Committee

Ed Kepler—President of Mass. State Association of Community Action Program Directors

Mindy Reiser—Graduate Student at Brandeis

For those of us who organized the gathering, we learned a lot about how a conference reflects the degree of unity of the organizing group and the amount of care put into it. For those who attended, I am told that it was stimulating and enjoyable.

On Saturday we had group meetings interspersed with workshops on such activities as New Alchemy's "Ark," Total Environmental Action's solar designs, and Goddard's Cate Farm. Afterwards a few of us prepared a vegetarian dinner for others, which we shared before seeing the film "Lovejoy's Nuclear War." Later on we had a discussion on the American Friends Service Committee's work with land trusts.

On Sunday, the entire group participated in a round table discussion about how we are involved with the network and how we could use it. Going around the circle, each spoke of their activities and concerns. Some of the things that came up:

Questions about a network—Do we really need a network? Why would I want to belong to a network? Will it

draw energy away from local work or will it aid local work? Is there a network already, or do we need to form a new one? What is a network anyway?

Concerns about what we need—"I belong to many organizations already, I don't have time to put into another." "What I really need is information."

"I know a lot about appropriate technology—what I need is someone to pass the information around." "What I need is contact with others who are facing the same problems as I." "What I really need is a long term vision of what we are about."

Comments on what we are about—What we are all trying to do is change the aspects of the world we live in. And to do that you can't just tell people how bad things are—you must present some alternatives. Appropriate technology relates to the whole dynamic of social change—it is not just fixing up some gadgets for fun and to save a little money. As Peter van Dresser has said, "What we are really doing is trying to learn how to discover ourselves."

Marc Sarkady
c/o Another Place
Route 123
Greenville, NH 03048

Dear Rainpeople,

About an hour ago I rushed in from MIT and banging together the north wall frame for a solar greenhouse there (a project started by Craig Decker and placed in my lap when he had to go to Washington, D.C., on NCAT business) to see if I could intercept the gasman and let him put in my new meter. I found your latest RAIN in my mailbox and the gasman's note on my door saying he'd been there and left. No meter. Nice article on solar greenhouses though.

I feel pretty pooped. Not quite up to reading your latest but all the same I've been paging through the damn thing something like three times already, and Bill, who drove me back home and shared a few peanut butter sandwiches with me, read all the way through the Schumacher and says he'd like to subscribe.

In the meantime, I've returned a call to a friend who's organizing a forestry project on some 400 acres in Essex County, MA, asking me for ideas (he's already talked to the New Alchies and everybody else I could mention), and tried to arrange for a new date to change that damn meter. Soon I'll have to hassle

my landlord about the electric bill. Jesus, I'm glad I do have one solar collector (hand-built by yours truly) and wish I could get it together to build that bicycle generator I bought plans for a year ago. I wish I had a bicycle to go with it.

You might be interested in a Xerox thing that Chris Ahrens put out of the NY CSA office awhile ago on low-cost solar thingies. He can be reached at CSA, Region II, 26 Federal Plaza, New York, NY 10007. It includes most of the stuff we "old hands" have been seeing illustrated in one place or another (but never as actual working models or hanging from the roof and windows of buildings around town) for a couple of years now. All in one place. Six nice cheap solar ideas/ideals.

If I get the energy, I'll also include a couple of maps I've copied and had hanging on my wall for a month now showing the terminal markets for fruits and vegetables in this country, the principle of truck farming areas of the country, and the plant hardiness zones. Some interesting interactions that I'd like to do a paper on some time in between the hassles of daily life and the trying to survive. You know by now of the price increases (carrots at 33¢ a lb.). The slack will be taken up by Texas and Southwest bumper crops, which are reported to be coming in, and by Mexico. Mexican produce, of course, comes out of the two states there that are undergoing Echeverria's land reform troubles and the farmers there use pesticides which have been banned in the U.S. by our own EPA. N.E. is bad off. I can only hope to finish this one greenhouse soon and have it working so that I can go on and build what I really wanted to do, which is a nice solar heated Cold Frame (inner tubes filled with water or plastic one-gallon jugs—I have 30 of them now—filled with water). And next week I have to see some farmers about supplying local produce to our own Cambridge Food Co-op and other co-ops around eastern Mass. Gad, I have been feeling the heebies and the jeebies lately. None of those people on Walter Cronkite's News (except the fella who built his new house according to Malcolm Wells) seem to have any grasp on the reality I know.

But you do. And isn't that nice. Excuse my kvetching. I can only hope that it is justified by the pieces of hard information between the lines.

Oh yes, another solar greenhouse is being considered to interface with an ongoing community garden program in Fall River. Mike Hurley of Citizens for Citizens, 264 Griffin St., Fall River, MA 02724, can tell you more.

George Mokray
13 Suffolk St.
Cambridge, MA 02139

EAST COAST

Dear Rainpeople:

Honeysuckle—the oft-cursed, persistent cancer of trees—is the subject of my work recently. While mulching trees in the orchard here, I started pulling down honeysuckle vines that choked tree growth. As I pulled, I thought about the honeysuckle's purpose . . . obviously it has to be removed by human (or other vine-clinging hands) paws, so it probably has usefulness to humans. It does. I've made a basket and some bracelets. The next phase is to use the leaves for tea or curative purposes. I've discovered the Indians used the roots and leaves for colds and sore throats. They also apparently "ate the bright red berries though they were both tough and tasteless" (*Treasury of American Indian Herbs*), which has piqued my curiosity. We have some aged honeysuckle vines over an inch in diameter that are like balsa wood in texture. One can peel scales/strips of fibre from the woody vines and these strips resemble primitive paper/papyrus. I suspect there are many more properties to honeysuckle, but, since RAIN came today—literally and figuratively—I decided to enlist the aid of my west coast friends. Has anyone done any experimenting with honeysuckle? Does anyone have information, experience, inspiration concerning honeysuckle purpose in the living cycle? Are people interested in uses for this omni-present plant?

Be well and happy.

Petey O'Neil
14600 Homecrest Rd.
Silver Spring, MD 20906

OZARKS

Dear RAIN Gang,

Got the latest RAIN. The freeze broke here yesterday, and I cut another hole in the 12 inches of ice on our mountain top pond for the horses to drink. Snow still covers everything,

but the melt is significant. We've had some cold weather here in the sunny South. Best estimate is a one in ten winter with lows and snows pushing towards 40-year plus records. It has been hard on critters living outside (wildlife and livestock). Lack of sufficient insulation and air infiltration still seem to be the biggest heat gobblers. Haven't been off the mountain due to bad roads for over two weeks to work (I'm winterizing homes of elderly on Weatherization Program.)

Noted some missing info for greenhouse info. To wit: "A report on Solar Heated Greenhouse Projects," George Larke, Citizens for Energy Conservation and Solar Development, Inc., P.O. Box 49173, Los Angeles, CA 90049. George has put together a good bibliography in the report. *Winter Flowers in Greenhouse and Sun Heated Pit* by Kathryn S. Taylor and Edith W. Gregg (1941—an oldie but goodie reprinted in 1969 by Charles Scribner's Sons, \$4.95). This 281-page book, although mostly about flowers, is full of solid experience backed info by these women. *Organic Gardening and Farming*, September 1976 (greenhouse issue), and March 1976, p. 152, "A Solar Greenhouse for All Seasons" by Steve Smyser.

I consider Bill and Susan Yanda's booklet the best construction info for the homesteader. We are trying to set up a similar project here in conjunction with the Weatherization Program. Better to build attached solar greenhouses than solar collectors if you can't have both. Research here indicates that the Yanda g.h. with adequate thermal storage may be the cheapest route to go for homesteaders. We shall see.

Today's project was calculating heat loss in our soon-to-begin-the-construction-but-it's-gonna-take-a-few-years-time-and-money-available home. Best tool was "Heat Loss Data and Calculations," Jan. 1972, *Engineering Extra*, 9 pp., free from Johns-Manville, Division Headquarters, Greenwood Plaza, Denver, CO 80217. Used this with wall, roof, floor drawings to figure out how much wood the critter was going to eat. Recommendations at this point

are storm windows and doors, 6" of insulation and reflective dead air space in ceiling and walls. Floor we are going to build is based on page 24 of "An Economical and Efficient Heating System for Homes," Production Research Report No. 99, 1967, USDA (available from Supt. of Documents), which just happens to be like Wendel Thomas' no-draft floor in *Mother Earth News* No. 10.

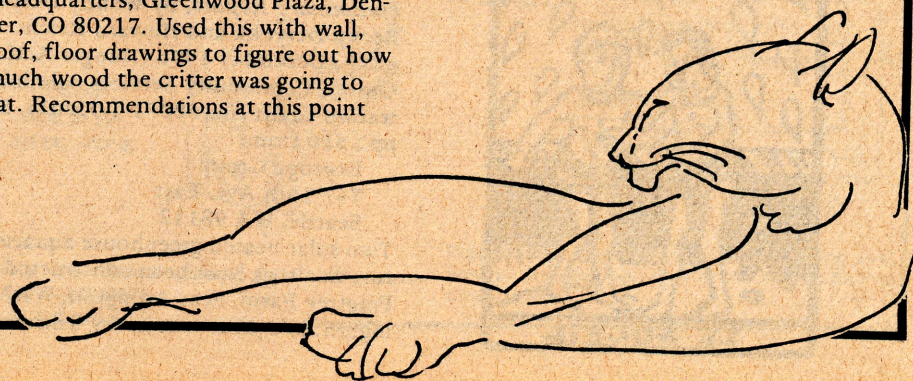
Love,
Joel Davidson
Dutton, AR 72726

SOUTH DAKOTA

Community Action in South Dakota
We are operating a home weatherization program throughout the state whereby low income homeowners may receive aid in the form of caulking, weather-stripping, insulation and possibly storm windows/doors. Over 1400 homes have been weatherized to date, and fuel savings have averaged twenty percent. This program is funded by the Community Services Administration and is operating throughout the country.

Northeast SD Community Action Program, Inc., Sisseton, has been funded to design and construct two 10KW wind electric units, several solar air and water heaters and a 200-square-foot solar greenhouse. The wind units will have 20-foot diameter blades and produce dc power that will provide resistance space heat and domestic hot water. (Contact Gene Wiegand, Northeast SD Community Action Program, Inc., P.O. Box D, Sisseton, SD 57262, for details.)

A 200-square-foot solar greenhouse has been built at the Parkview Care Center in Bryant, South Dakota, and should be operational in a few months.



JUNGLE DRUMS continue

There is no utility hookup or supplemental heat other than the sun!

(Further information available from Jim Drew, Inter-Lakes Community Action Program, Inc., P.O. Box 268, Madison, SD 57042.)

Geothermal potential is being investigated as a source of low temperature heat to provide domestic space heating needs as well as for heating greenhouses. We are seeking shallow well areas and trying to avoid expensive heat exchanger mechanisms, etc.

(Further information available from Mr. Powers, Western SD Community Action, Inc., 220 Omaha Street, Rapid City, SD 57701.)

One passive solar home has been built and another is in progress near Lake Andes. (Details from Don Slaba, South Central SD Community Action Program, Inc., P.O. Box 6, Lake Andes, SD 57356.)

We are also considering the potential of producing methane gas and liquid fertilizer from animal wastes. This is in conceptual stage, however.

Mike Hohmann
State Economic Opportunity Office
State Capitol Bldg.
Pierre, SD 57501

CALIFORNIA

Dear Gentlepersons:

We are looking for people who are knowledgeable in the building and application of simple solar devices and/or in the manufacture of solar cells *and* knowledge in setting up and running a private business.

We are trying to encourage economic development in these areas by exploring ways of setting up companies to manufacture environmentally sound products whereby the processes used are labor intensive and all the people who work in these companies are also its owners.

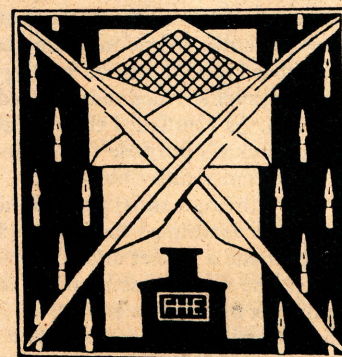
Although we don't have "a pot of gold" at our fingertips, we think that with the talent and expertise which exists in the community (you) and our knowledge of finagling and finding our way through the bureaucratic maze, we might be able to come up with businesses that work.

We're not looking for people who feel extremely proprietary about their knowledge or who want to make a quick buck and get out. We need people who are willing to share their knowledge and want a decent living for them-

selves and as many other people as possible.

If you have experience in housing rehabilitation and neighborhood preservation, you are also most welcome to contact us.

Nadja Burge
California State Economic Opportunity Office
555 Capitol Mall,
Room 325
Sacramento, CA 95814



SOLAR ENERGY



Toll-free Solar Info, call:

800/523-2929 or

800/462-4983 (Pennsylvania only)

Open since Oct. 1976, the National Solar Heating and Cooling Information Center has available a list of financial incentives reports from government and private industry, and a general reading list covering periodicals, directories, technical solar textbooks, architectural publications, catalogs and non-technical books. Or write: P.O. Box 1607, Rockville, MD 20850.

Two Solar Aquaculture-Greenhouse Systems for Western Washington: A Preliminary Report, by Woody Deryckx, Becky Deryckx and Howard Reichmuth, December 1976 (Hunger Action Center, Community Services Administration Grant No. 00071-T-75/01), 51 pp., \$10 from:

Ecotope Group
747 16th Ave. East
Seattle, WA 98112

Two solar-heated greenhouse-aquaculture facilities have been constructed at Pragtree Farm, near Arlington, Washington, as a joint venture by Tilt and

Ecotope Group. These structures, the small rhombicube octahedron and the parabolic north wall greenhouse, represent an attempt to determine the feasibility of integrating warm-water aquaculture systems into solar-heated greenhouses designed for the specific climatic conditions of Western Washington and to develop optimally efficient food-raising facilities for use by low-income families and individuals.

A Floridian's Guide to Solar Energy, Robert J. Pozzo, 1976, \$1.50 from:

Florida Solar Energy Center
300 State Road 401
Cape Canaveral, FL 32920

A useful consumer's guide to solar energy—explains graphically the basic concepts of solar radiation, collection, storage, water and space heating and air conditioning. Gives detailed information on safety, costs, how to find a reputable manufacturer, and current status of solar systems and equipment. Particularly this latter half of the book provides a good model for other states to help people know the specific potentials and problems in their area.

SEWAGE

Meadow Marsh Systems as Sewage Treatment Plants, Maxwell M. Small, Nov. '75, pub. no. BNL-20757, \$4.00 from:

NTIS
5285 Port Royal Rd.
Springfield, VA 22151

The exciting, common-sense and plain money-saving possibility (where useful natural filter systems haven't yet been paved over or tract-housed) is that "both systems produce water suitable for ground water recharge or other reuse without public health hazard. On the basis of investigations to date, both systems can be recommended as sewage treatment plants and water producers for human populations between 100 and 10,000."

The Ecology of Waste Water Treatment, by H.A. Hawkes, 1963, out of print, check your library. Published by MacMillan Co. 866 Fifth Ave. New York, NY 10022

The ecology of living organisms found in water purification situations (septic tanks, sewage treatment plants, aquaculture fish tanks) is described in thorough detail, yet it can provide the eager non-biologist with a working grasp of the essentials. Useful in developing practical water and energy conservation during treatment, sustainable food chains in fish tanks and environmental clean-up in general. Since it covers the ecologic cycle, it's a good companion in any aquaculturist's library to Spotte's *Fish & Invertebrate Culture: Water Management in Closed Systems* (1970, \$9.50, John Wiley & Sons), which focuses on chemical and biological cycles. (Courtesy Howdy Reichmuth and Woody Deryckx).

OREGON WATER CONSERVATION Oregonians interested in developing legislation for implementation of dry or compost toilets should call Liz Welt, 285-1293.



If there are any RAIN readers who have had experience building and managing food-producing greenhouses and who would like their projects featured as case studies in a new book, they should get in touch with Ken Kern, Owner-Builder Publications, Box 550, Oakhurst, CA 93644.

The Woodburner's Encyclopedia

The Woodburner's Encyclopedia, Jay Shelton and Andrew Shapiro, 1976, \$6.95 from: Vermont Crossroads Press Box 333 Waitsfield, VT 05673

This promises to be the basic source for people seriously interested in wood

heating and what actually happens in various aspects of burning wood. Contains results of Shelton's energy efficiency study of various kinds of wood heaters, detailed examination of how creosote forms, operating characteristics and heat output, economics, and all sorts of interesting insights on how to burn wise and safe.

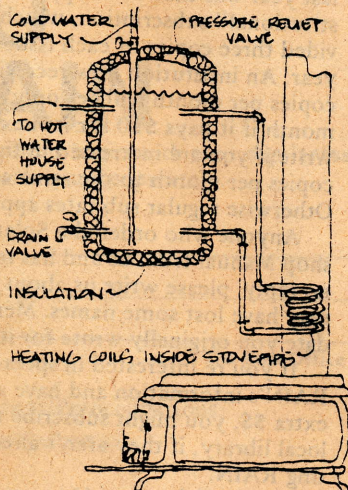


Figure 10-3. A wood-stove tap-water heating system. In this case, the water circulates naturally from the heating coils to the tank and back.

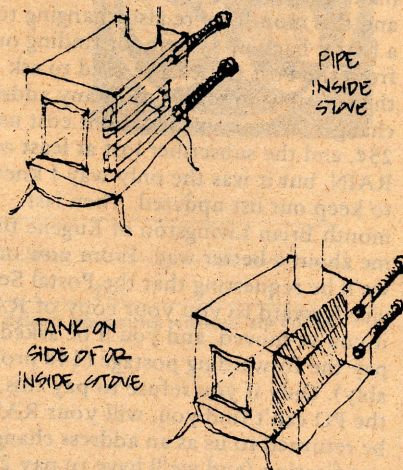
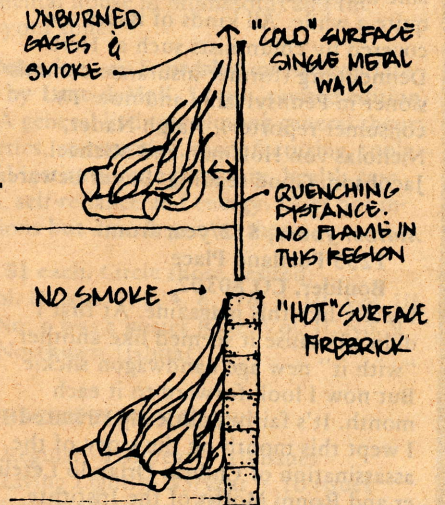


Figure 10-5. Some systems for heating water with a wood stove.



Effect of a cold surface on a flame.

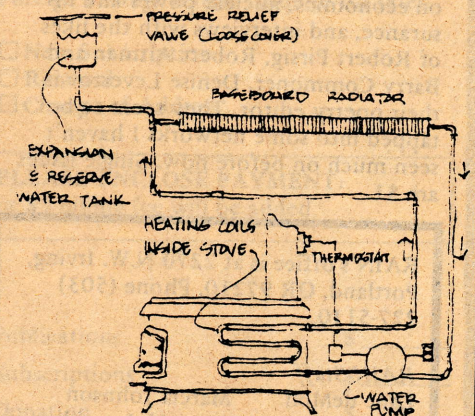


Figure 10-4. A wood-stove water heating system for distributing some of the stove's heat to other rooms.

GOOD THINGS

Simple Living, quarterly newsletter of the

Simple Living Program
American Friends Service Committee
514 Bryant Street
Palo Alto, CA 94302

\$3 contribution requested. More efficient schools, agriculture or transportation won't break the holds those institutions have on our imagination. We consciously have to go other directions to discover how we can live lives of quality and happiness without massive demands on resources. This newsletter and the project behind it is exploring some of these new directions.

Caveat Emptor, \$8/year from:

P.O. Box 336
South Orange, NJ 07079

It's sort of embarrassing to admit it, but I'd never seen this fine consumer magazine before last week. It's been around quite a while. All kinds of issues are covered by columnists such as Herb Dennenburg (former insurance commissioner in Pennsylvania and now TV consumer reporter), Ralph Nader, Nicholas von Hoffman and Michael Jacobson. Good reading. Buyer beware.

Mother Jones, \$12/year from:

1255 Portland Place
Boulder, CO 80302

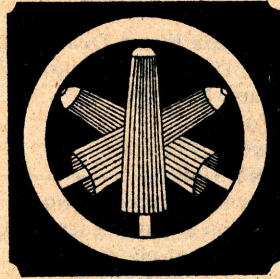
I really like this magazine. At first I didn't because it seemed like another "with it" new age bandwagon slickie. But now I look forward to it each month. It's fairly politically oriented—I wept this month on the story of the assassination of Chilean Orlando Letelier and Ronni Moffit of the Institute for Policy Studies. It also has movie reviews, RAIN-type blurbs, exposés on economics, nuclear power and insurance, and interviews with the likes of Robert Pirsig, Robert Altman and Barry Commoner. Denise Levertov is their poetry editor. They seem to be tapped into some networks I haven't seen much on before now. Single issues are \$1.

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

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Lee Johnson Anne McLaughlin
Tom Bender Steve Johnson

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Printing: Times Litho



RAIN DROPS

If you do notify us yourself of an address change, please include your old zip code too. It helps us find your mailing card quickly.

About renewing your subscription: If you wait till after it's expired, you'll need to order separately any issues you've missed, at \$1 each. Up to now we've been automatically sending them as part of the renewed subscription, but it slows down the process of getting you back on the mailing list. Also, we do run out of back issues and offer them only as we have them available.

Before you order any back issues or other publications, make sure your order blank is a recently published one. Otherwise write for a current one.

We're happy to have low income subscribers take advantage of our special "Living Lightly" rate, but we do ask that you mention that you're using that rate. Because our regular rate was \$5/year till last May, lots of people don't know that the price is regularly \$10 now. We decided to deal with this by giving half-year (five issue) subscriptions to anyone who sends \$5 without saying they're taking the "Living Lightly" option. We also write to them and tell them they'll get only five issues unless they write back to specify "Living Lightly."

If you've gotten a renewal letter that seems to be five issues too early, it's probably because you sent only \$5 and never responded to our follow-up notice.

Another part of our price increase last year was that we dropped the "institutional" subscription, which provided three copies of each issue for \$10/year. An institution now receiving three copies per month will get only one per month if it pays \$10 for its next renewal. Write if you are interested in five or more copies per month to the same address. Otherwise regular sub rates apply.

Anyone who ordered a Solar Workshop Manual from us and has received no reply, please write us about it; we may have lost some names. Mention the date you originally wrote for it.

If you're interested in spreading RAIN's information and have a few extra \$\$, you might subscribe for your local library, if they aren't already getting RAIN.

That's all for now. Next week I leave for two months in Guatemala. I hope it rains here while I'm gone (the wet kind—I'm not worried about the monthly RAIN on paper). (AM)

RAIN's financial picture continues to brighten. A year ago we had about 860 paid subscribers; as of last week (Feb. 11) we have 1823. During 1976 we added about 66 subscribers per month; the net gain for the past three months has averaged 158 each month. Better all the time.

We've still not been bringing in enough income to be self-sufficient. We've been able to pay our printing and office costs, but up to now only \$400 per month total salaries (Lane's been getting \$100, I've been getting \$300). However, beginning this month, we'll be paying each of us \$400 per month (or a pro-rated amount for anyone working less than full time). This means that we're predicting that our income in the coming months will support this expense. The past three months have been good enough that we're making the prediction. Many thanks to all of you who've helped this happen by subscribing, renewing and buying individual publications. We also expect that the publication of the RAINBOOK this spring will bring an increase in subscriptions, maybe a large one.

Now for some housekeeping stuff. If you've been reading RAIN for a while, you probably expect me to give a message about telling us ahead of time if you'll be changing your mailing address. Yes, it's much easier on our mailing system if you tell us in advance, and this month we're also changing to a better back-up system for finding out from the Post Office. We used to ask them simply to notify us of any address changes. Whenever they did it cost us 25¢, and the subscriber lost at least one RAIN, but it was the only way I knew to keep our list updated. Then last month Brian Livingston of Eugene told me about a better way. From now on, we'll be requesting that the Postal Service forward to you your copy of RAIN if you've moved, and you'll be asked to pay the forwarding postage (14¢ probably). Only if you refuse to pay this, or the PO can't find you, will your RAIN be returned to us as an address change notification (and we'll have to pay 28¢ to get it). If that happens, we'll take you off the mailing list, though we may also write you to make sure you're really lost or don't want RAIN.



RAIN PUBLICATIONS

- RAINBOOK: Resources for Appropriate Technology**, 256 pp., available 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.
- Ecotopia Poster**, by Diane Schatz, 2'x3', \$3. A reprint of the "Visions of Ecotopia" line drawing that appeared in the April '76 poster issue. Great for coloring.
- A.T. Sourcelists**, August, 1976. 50¢ each, any 6 for \$2.
Two to five pages each, prepared by RAIN for the California Office of Appropriate Technology:
 - Direct Solar Heating/Cooling*
 - Energy Conserving Landscaping*
 - Wind Energy*
 - Solid Waste Utilization*
 - Drying Up the Toilets*
 - Diseconomies of Scale*
 - Bioconversion: Methane Production*
 - Weatherizing: Home Insulation*
 - Costs of Urban Growth*
 - Natural Pest Control*
 - Appropriate Technology*
 - Low-Cost Construction*
- 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.
- Woodstoves**, Rainpaper No. 1, November 1976, \$1. Compiled reprints from articles by Bill Day on selection, maintenance and repair of woodstoves of all kinds. Bill is a third-generation repairer of woodstoves who owns a store in Portland, Oregon.
- 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.
- Environmental Design Primer**, by Tom Bender, 206 pp., 1973, \$5. Meditations on an ecological consciousness. Essays and poetry about moving our heads into the right spaces before our places.
- Living Lightly: Energy Conservation in Housing**, by Tom Bender, 38 pp., 1973, \$2. Early ideas on the need for change in building and lifestyle; compost privies, Ouroboros Project (self-sufficient experimental house in Minnesota) and the "problem of bricks in your toilet."
- Coming Around: An Introductory Sourcelist on Appropriate Technology**, prepared by Lane deMoll, 12 pp., revised edition, September 1976, \$1. A general listing including general theory, economics, and energetics, community, manufacturing, tools and hardware, financial institutions, agriculture, health care, shelter, transportation, self-reliance and energy. Does not include how-to publications but directs you to them.

Back Issues Available, \$1 each. Circle those desired; Vol. I, Nos. 7, 8, 9; Vol. II, Nos. 1, 2, 4, 6, 7/8, 9, 10; Vol. III, Nos. 1, 2, 3. (Vol. II, No. 6 was a poster issue; Vol. II, No. 9 was a special issue on Northwest Habitat)

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Order back issues separately.



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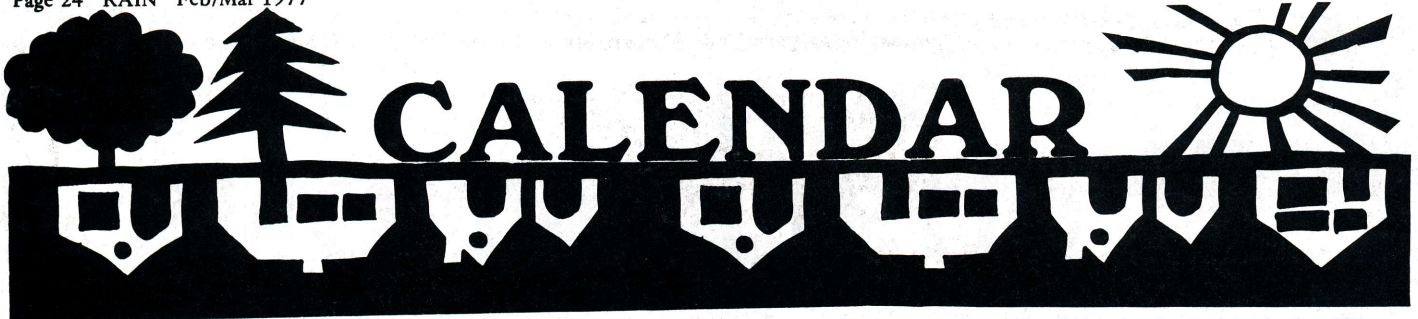
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Underground America Day—Saturday, May 14

Malcolm Wells
P.O. Box 183
Cherry Hill, NJ 08002

The idea of using trees and wildflowers instead of asphalt and concrete to cover parking lots and buildings has finally arrived! The only trouble is nobody knows it.

If you say something, and then I say something, and then someone else says something about underground's advantages very little will happen. We've all got to say it together, that it's not only quiet and warm in winter but cool in summertime and beautiful as well. We've got to break down all the well-justified prejudices and show people that underground buildings are dry and sunny inside. Then the politicians and bankers and newspeople and ordinary citizens will see that there is an alternative to the mess we see outside every window today. I've very carefully chosen a day, May 14th, on which a great number of us, all over America, can publicize and celebrate underground architecture in whatever way seems appropriate. This means planning events, letting as many people as possible know about them, and then staging them in such a way that people not ordinarily aware of such things can begin to picture the living green cities, the silence and the wild animals we can have at our doorsteps in this way.

What you do, and how you do it, of course, are strictly up to you. You know far better than I what will be most effective where you live. The events—or exhibits—or shows—or publications you arrange can be very modest and inexpensive and still be effective. All I ask is that they all be done on a particular day. Dig a hole, spread mulch on a roof, plant a tree, visit a cave . . . who knows?

If you'll let me know what you plan and, later, how it worked, I'll assemble all the reports and send you a national summary. Good luck!

Summer Seminars 1977

Small Farm Research Association
Greenwood Farm
Harborside, ME 04642

June 12-25, July 10-25, August 7-20. Intensive courses in the

theory and practice of biological agriculture, taught by Eliot Coleman. 20 people per session. College credit available for 30 hour session. Mon-Fri, 9-12 noon, afternoons for field and garden work. \$125/session.

Aspen Energy Forum 1977
Roaring Fork Resource Center
P.O. Box 9950
Aspen, CO 81611
303/925-5125

May 27-29. Passive solar architecture, active solar systems, energy conservative design, climatology and site analysis, natural energy transfer, governmental implications, performance data, solar economics and lifestyles.

School of Living
P.O. Box 3233
York, PA 17402
(717) 755-1561

A series of seminars at their various learning centers in Pennsylvania and Maryland:

- Alternative Energy Conference—March 26-April 2
- Communal Living—March 25-27
- Forest & Wildlife Management—April 1-3
- Nuclear Energy—April 15-17
- Homesteading Seminar—June 3-5
- Communal Living Experience—June 15-August 1
- Shelter Conference—August 14-21

Other programs for which a date has not been set: Herbs, Prison Reform, Natural Food Cooking, Food Preservation, Massage & Communications. Their annual Land Trust Conference will be held in September.

The Fuller Archives
University City Science Center
3500 Market St.
Philadelphia, PA 19104

8th Annual World Game Workshop.

June 19-25—Stage I: Planetary Planning Symposium. \$200.

June 26-27—Stage II: Design Science Laboratory. \$150

May 30-June 11—The Design Science of Buckminster

Fuller: A Video Seminar. \$100.



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