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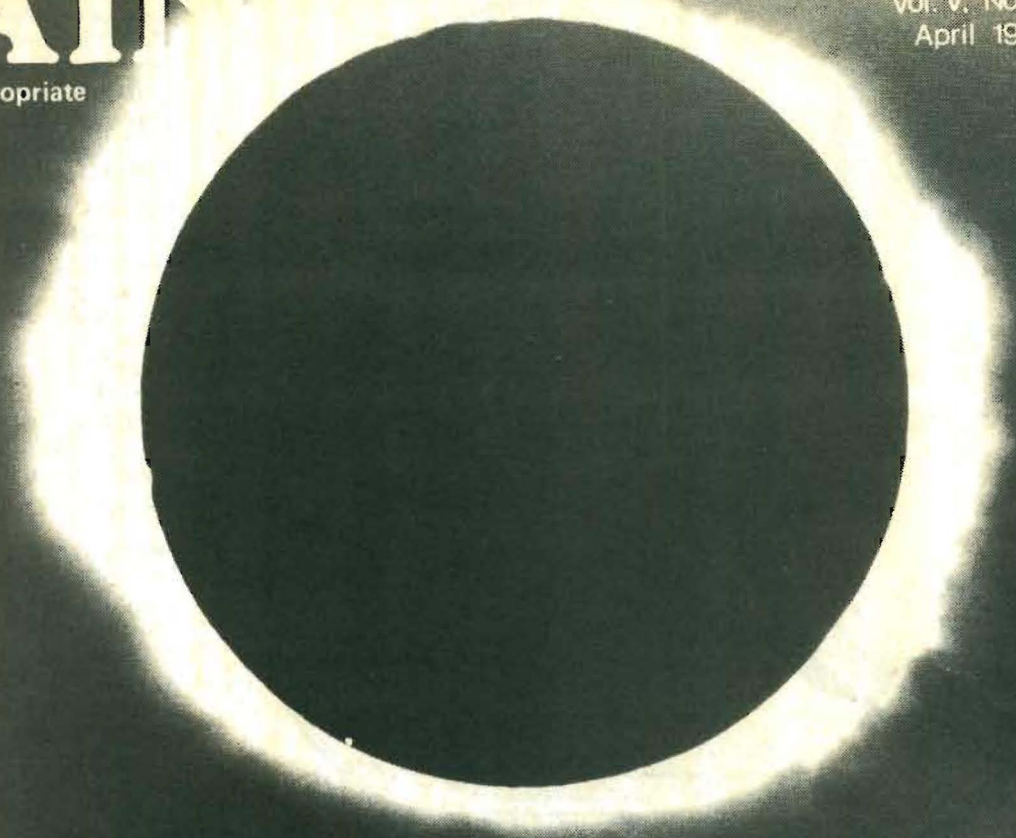
RAIN

Journal of Appropriate
Technology

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Vol. V, No. 6

April 1979





RAINaccess

The Rainbow Book, edited by F. Lanier Graham, revised January 1979, 208 pp., \$6.95 from:

Vintage Books
201 E. 50th St.
New York, NY 10022

In 1975 living in the S.F. Bay Area was colored by a prismatic wave of interest and celebration of the RAINBOW. The Rainbow Show was a year-long celebration culminating with a show and publication of *The Rainbow Book*. Children's rainbow art colored the walls of many museums and parks in San Francisco along with the textile, fine and graphic arts in exploration of the sensitive and elusive qualities of light and color that embody rainbows. The original book published with the show was printed in six colors of paper in rainbow sequence and is out of print. This revised edition, although lacking the magenta that I loved, is much easier to read on white paper. Music and color relationships, myths, poems, and rainbow folklore, visual perception and the physics of the spectrum, metaphysics of the spectrum—auras, the rainbows around our bodies—are explored. Fascinating and visually delightful! —LS

How the year has flown! It's time again for the *Annual Equinox Gathering*, a coming together of friends in the Northwest to share ideas, touch bases, renew spirits and spring off for more regional work in the coming year. Spring is a time of beginnings, and last year's gathering saw the beginnings of some wonderful things. Hope to see and meet lots of you Northwest RAIN-friends at this one, held at Vashon Island, Washington, near Seattle. Networking workshops Friday; educational and organizational workshops Saturday; Sunday is focused on localities, communities. Pre-registration by April 5 is \$25 for 3 days, \$19 for 2 days. Registration at the site is \$30, and \$23, respectively. Contact CAREL, Box 1492, Eugene, Oregon, 97440, 503/485-0366. —LS

Goods and Merchandise, 1978, 128 pp., \$7.95, and *Compendium*, 1976, 397 pp., \$14.95 from:

Hart Picture Archives
Hart Publishing Company
12 E. 12th Street
New York, NY 10003

Friends working on publications always seem to call *Rain*, asking about our wonderful sources for graphics. Here are two great new acquisitions to our graphics library that have made me unusually anxious to lay out this issue. Priced slightly higher and on slicker paper than our old standby *Dover Pictorial Archives* (see *Rain*, December 1976), these two volumes will add new flavor to *Rain*. Hope you enjoy this issue and this new find! —LS

Smoke Detector Update

More than four million ionization smoke detectors have already been purchased and nine million are flooding the market annually. In response to the environmental and health dangers they present, a citizens' organization in Barrington, Illinois, has submitted a resolution to its town board requesting a ban on the sale and use of radioactive ionization smoke detectors. The photoelectric detector is being recommended as a safe alternative (see *Rain*, Dec. '78, p. 21 for a list of manufacturers selling the photoelectric model). The group, Pollution and Environmental Problems, Inc., has also distributed press releases warning of the potential short and long term health hazards. Americium 241, the radioactive element, is an internal radiation emitter and affects human health when it is inhaled or ingested. It is capable of vaporizing in fire or dissolving into water where it enters the food chain as drinking water, plants, fish, etc. Cancer of the liver and bone have been connected to the ingestion of Americium. Activity to ban the ionization detectors is also occurring on the state and national levels. Several state representatives in Oregon are now attempting to amend a bill requiring mandatory installation of smoke detectors, to include a ban on the radioactive units. For information on the town resolution, contact Catherine Quigg, Pollution & Environmental Problems, Inc., Box 309, Palatine, ID 60067, 312/381-6695. For copies of the press releases

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

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and references, send \$1 to Nuclear Information and Resource Service, 1536 Sixteenth Street, N.W., Washington, DC 20036.

APPROPRIATE TECHNOLOGY

Brickmaking Plant: Industry Profile, UNIDO Development and Transfer of Technology Series No. 10, \$4.00 in Europe, North America and Japan, from:

Sales Section
United Nations
New York, NY 10017

or

Sales Section
United Nations Office
CH-1211 Geneva 10, Switzerland
free elsewhere from:

Editor, UNIDO Newsletter
P.O. Box 707
A-1011 Vienna Austria

A well-detailed profile of conventional mechanized brickmaking techniques—the best of several such profiles we've seen. Coverage of problems with clay processing, drying, effect of brick size upon competitive cost with other materials, etc. To be followed by another publication dealing with labor-intensive semi-mechanized or manual technologies suitable for rural areas.

Technologies from Developing Countries, No. 7 in the series (free everywhere), contains brief descriptions of 138 new and innovative technologies from developing countries, along with sources for more detailed information. Plant and animal products, textile, construction, energy, chemical, plastics and machinery plus other areas are covered. —TB

Women and Technology: Deciding What's Appropriate, conference in Missoula Montana, April 27-29, sponsored by AERO, Women's Resource Center and NW Subregion Women's Studies Association, \$5, to pre-register write:

Women's Resource Center
U. of Montana
Missoula, MT 59812

Ecotope's insightful and exciting conference on women in appropriate technology in December must have been catalytic in getting us to take some steps and fill the need from which that conference arose. Here's another, similar conference. Hands-on workshops on alternative energy, bike repair, self health, along with philosophical discussions. Five dollars will get you in with childcare and housing available. See you there! —LS

ACT '79—Mid-Atlantic Appropriate Community Technology Fair/Conference

Here's an update on ACT '79, which was mentioned in the November issue of *Rain* as a model for appropriate technology fairs. It sounds even more wonderful and for the first time ever, I'm seriously considering going to Washington, D.C.! ACT '79 is developing on the Washington Mall a complete community—with streets, shops, houses, farms, schools and health care facilities. Featuring composting, fish ponds, farmers' markets, beekeeping to urban walkways, light rail transit and jitneys—the list is endless! All I can say is, if you live in the Mid-Atlantic region—GET THERE April 27 to May 1! —LS

Linda:

As for how things are going here, perhaps hyper is the best one-word description. No doubt about it, ACT '79's gonna be fun—and more important, we're gonna achieve our prime objective, which was to bring together a.t. innovators from the Mid-Atlantic region (which is in real terms both the least developed in overall a.t. efforts *and* the most urbanized) and expose government policymakers to the wide range of community-based technologies.

We go on site 12 weeks from tomorrow (Jan. 22). And we're more or less on schedule (although I don't know whether I would want to take this ride again). And what's most amazing is the diversity of areas from which we're getting help: architects from the American Institute of Architects; government technicians setting up ad hoc working groups within their agencies (without explicit top-down approval) to devise exhibits and programs; designers; artists; musicians; students giving up a semester to work full-time for us; lawyers; writers; health practitioners; I could go on and on—and they're all doing it just because they feel ACT's gonna be a fantastic thing. For sure, this show of support mitigates all those cynics who see Washington as impersonal, power-made, etc. Cause if you take away the federal government's contributions to ACT, then we wouldn't have very much at all. Not one business, foundation, labor union, fat cat, whatever has made a substantive contribution so far. And, surprise, surprise, the feds ain't dictating anything; they're giving us the skeleton, and we have the onus on us to flesh it out.

Anyway, we're still looking for possible participants and for local planning types. Will probably be right up until the end of March—although we need planning coordinators as soon as possible. Whatever *Rain* can do to assist will be of great help. And, of course, if it's

at all possible, we'd like to see all of you here to join with us in this celebration of community efforts.

Peace,
Michael Duberstein
Appropriate Community Technology Fair/Conference
1413 K St., N.W., 8th Floor
Washington, DC 20005
202/393-AT79

Selected Federal Programs in Appropriate Technology, 1978, limited copies available free from:

Office of Technology Assessment
United States Congress
Washington, DC 20510

A description of 52 federal programs which fund research and demonstrations, provide technical and financial assistance, or which set standards for small scale technologies. Of interest to people or projects considering seeking federal funding, interested in what Uncle Sam's involvement in this area is or is supposed to be, or wanting to know what kinds of local groups or agencies can obtain federal assistance in this area. —TB

POLITICS

The Shorter Science and Civilization in China: Colin Ronan and Joseph Needham, 1978, \$19.95 from:
Cambridge University Press
32 E. 57th Street
New York, NY 10022

When Chinese leaders can gain U.S. acquiescence in a military invasion of Vietnam by "coincidentally" dangling "possible" purchases of U.S. equipment in front of American business leaders, it's time to wake up to how naive the U.S. is in international games and how experienced other countries are. China has been around for a long while, and a healthy respect for its tenacity, inventiveness and character are essential to understanding and dealing well with it.

Joseph Needham's epic *Science and Civilization in China* is a cornerstone to any such understanding—tracing in fascinating detail the accomplishments and ingenuity of the largest civilization on earth over the last 4000 years. This abridged version can hardly convey the often remarkably different basis from which Chinese developments arise, but for those without the monetary resources and library space of a university research library, it is a welcome and valuable resource. This first volume covers Volumes One and Two of the original text—an introduction to Chinese history, the history of Chinese scientific thought and the travelling of science between Europe and China. —TB

Passing On

Packages have been arriving in our mail box lately, continuing an age-old custom. They've contained a hodge-podge of new and used baby clothes—some well used and handed on from birth to birth, others special keepsakes handed down for several generations and stored away till needed. Some things have been new-bought, crisp and bright, some hand-made by friends and grandmothers who knew of special needs and loves.

We know of people who buy such things all new. At one time we would have been more inclined that way ourselves. But the patient love that some forgotten grandmother several generations ago put into a tiny lace collar wouldn't be there. And the special pleasures of thinking of the friend who made a quilt or crocheted a crazy hat, or of having baby clothes made from remnants left over from your own favorite high school shirt can't be bought in any store at any price.

This simple and ancient custom of passing on is much more than a wise and welcome frugality. It's a part of our economics where people *do* matter—one of the parts that never make the slightest blip in our GNP but which make much welcomed gifts to our hearts and lives.

Our money economy is well and intentionally designed so that people *don't* matter. Jobs are designed so that people are easily replaceable and therefore less valuable and lower paid. Goods are designed to be disposable, and along with them we dispose of some of the self-respect of the people who worked to make them. Products are designed and packaged to prevent a buyer from finding out the durability or details of construction or operation. Products are merchandised at fixed prices so salespeople and buyers cannot exercise and develop judgement of what is an appropriate price for a given situation. Yet the merchandiser is free to scoot the prices up or down to lure or soak the buyer.

Little is said about other parts of our economy where people *do* matter—there's no profit to be made in promoting someone else's self-reliance. But passing things on, auctions, barter, helping out friends, self-reliance, and household economics all have an increasingly important role to play in our future. For that future has to both maintain itself within shrinking resource limits and at the same time to restore the sense of human and natural dignity, of belonging, and of psychological and spiritual reward of life that has been destroyed by our industrial economic culture.

Haggling

The necessity of people-economics may lie in the future, but its benefits are available now and being sought by more and more people as the novelty of our supermarket culture dissolves into a bitter aftertaste of exploitation. Just one step away from the new car showroom is the used car lot, beyond the edge of the safe and standardized world and into a fluid

and ever-changing world whose rewards require an expenditure of your personal energy. You're on your own! Buying and selling used things—cars, clothes, houses or whatever—requires more knowledge and gambling to participate in, but also offers greater returns for that risk and effort.

Five years ago, when we moved to Oregon, we bought a used stove for \$50. We were novices to the world of used goods, and didn't know if we were being taken, but it was worth the risk for the time we needed it. After our fire we went back to the same place, because by then we knew they'd been fair and honest. They didn't have any stoves of the kind we wanted, but told us we really couldn't go too wrong with any used stove we could find—they work or they don't, and they're easy to fix. When we finally found one, the guy wanted \$40 for it but didn't have any place to plug it in to see if it worked. We knew by then that the price was great if it worked, and probably fair if it needed fixing. When we got it home and plugged it in, sparks flew everywhere, but the problem boiled down to one broken wire and less than an hour to fix. Cheap new stoves cost nearly \$200, so we ended up with a better product, saved about 75 percent of the cost, and learned how to repair a stove—a good return for asking a few questions and taking a small gamble.

Second hand stores, auctions, used car lots, classified ads, friends, and haggling prices are all a different kind of economics than Sneers or Pay-More. Price depends on what you know and don't know, how you and the other person feel towards each other, how much others are willing to pay, what you really want it for, and how much wool can be pulled over the other person's eyes. Do a little homework—check prices in the classifieds, look up new prices in the Sears Catalog. Talk to a repair person. Get a feel for the market. It takes a little more time and asking the right questions. It develops a good eye for people.

One of my first lessons in barter when you can't even speak or read the language came from a fellow-traveler in Istanbul when we were buying food from the market vendors. Stand back and watch the coins. See what the locals are paying for what, even if you don't know the language. The second lesson—don't insult the seller or the merchandise if you don't know what you're talking about. The bluff is obvious, insulting and infuriating. Just say you aren't willing to spend that much money for that merchandise, and make a counter-



from Compendium

Economics Where People DO Matter

Tom Bender

offer. Compare prices and condition, and play from there.

Yes, haggling takes a little time, but it's a cheap and worthwhile education. It leads to respect for the other person, how much they know, and how well they can size you up. It is probably the only practical way to deal with the trading of unique or used goods, and a source of fun and satisfaction that cannot be gotten from buying fixed-price new merchandise. When fewer and fewer of us can afford "new," it's a rewarding, cash- and resource-effective way to trade, and truly part of an economics where people do matter.

Helping Out

As much as haggling is the most common people-process for determining price for goods in a particular situation, helping out is one of the most time honored ways of dealing with services in economies that are localized enough that people know each other and are around long enough to reciprocate. It recognizes the truth of the word "obligation"—that you really owe something back to someone who has helped you that isn't erased by a mumbled "much obliged" and a round of drinks.

Looking back, I'm amazed at how much of our lives, even in middle America, never went through the money-changers but was part of a great process of helping back and forth. Many of our vacations while growing up were to visit our relatives living in various places. One uncle was conveniently in the Army, which moved him and his family to new and exotic places like Kansas and Georgia and Virginia every two years so we had new places to visit! While another of my aunts was sick, my cousin came and lived with us for several months.

Around home, of course, money rarely changed hands for work done, so probably two-thirds of the work done by our family as a whole—like almost every family—never saw a dollar accounting. With the neighbors, lawnmowers were borrowed, hair was cut, houses and pets taken care of during vacations, rides into town given and taken, and baby-sitting done. Our neglected grape arbor came under the wing of a neighbor lady who took the grapes every year and gave us grape juice and grape jam in return.

Over the last few years our lives have even more interwoven with others in an interlocking web of obligations and giving, sharing, borrowing and being given, and our lives have become much richer in the process. Lane's younger brother and sisters have all come and spent time living with us—helping put out the magazine, building and rebuilding a house, sharing each other's lives and getting to know each other again as "big people." We've gained a lot, and hope they have too. We've passed on to others our newly acquired skills of pouring concrete, doing electrical wiring and building windows, and we've received—not necessarily from the same people—baths and dinners and used water heaters and sinks and tools and help felling storm-damaged trees.

All that saves money, yes—quite a lot of it once you figure in the taxes you have to pay on the money you would have had to earn to pay someone to do those things, the middle-man profits you've eliminated, and the better results you've gotten doing things exactly for your needs. But does all this playing around add up to any significant impact on our economy? How does it deal with gasoline, rent, buying a new car, or taxes?

Often it can't—which merely says that part of your life is still in the dollar economy, and you may wish to leave it there. Gasoline? Probably little help unless you know a friendly farmer. But maybe you can carpool or share rides with

someone. Rent? Sometimes you can trade fix-up or maintenance work for a rent reduction, but the big help of helping out is to help you build your way out of the rental market. A new car? Wrong market again. A used car, yes. Repair and maintenance, surely. Taxes? The more you move out of the dollar economy, the less you have to earn and to pay taxes on! In our own case, I would estimate that we've reduced our cash needs by more than half over the last few years, and should cut them in half again in the next couple of years.

But dollar savings aren't the most important reward. It's often a lot easier to do things with four hands instead of two. It's usually more *fun* helping someone do something, where you don't have the responsibility and can just do the doing and not the worrying and figuring. It's *fun* to be in on felling trees, building walls, making things happen. It's *fun* growing new skills, learning how things are done, and what things actually are worth in sweat time, money time, and work time. And not having any skills to offer is not a problem for long. Two willing hands and a little sweat helping someone who knows how is the quickest and easiest way to learn skills.

Many current attempts at structured barter arrangements, barter "banks" or trading clubs fail to recognize that one of the real benefits of "helping each other out" is that when it operates among friends or neighbors, it doesn't need any immediate return of a favor or *any* kind of accounting procedure other than that little flag in the back of your head that finally says, "Hey, I've helped him *a lot*, and he hasn't done anything in return. Let him fix his own roof!" If accounting is needed, money works better than most barter banks—that's what it was designed for! Helping out works partly because it's all between friends, or you become friends in the process, but also because each person views the helping out very differently. The helper probably wanted an excuse to get out of the house anyway, probably had fun helping, and probably had forgotten how desperately floundering it felt before when he or she needed that particular help themselves. The "helpees," on the other hand, think they've been given a lot more than they have, because they *needed* the help, probably didn't know how easy it was to learn or perform the assistance they were given, and probably believed the helpers knew what they were doing!

That difference in perceptions is an important social glue. Over a period of time and helping back and forth, it frequently ends up with everyone feeling they've gotten back a whole lot more than they've given themselves. I have that feeling of gratitude and thanks towards many of our neighbors and friends, and have discovered that many feel the same in reverse. The used water heater we were given meant another trip to the dump for our neighbor, but to us it was the equivalent of \$100 and the heart of a future solar water system. And so it goes.

In any case, most helping out is just that. It rarely is tied to getting something back, though eventually things come full circle through the oddest of routes.

One of the great benefits of economics where people do matter is that they force you to get to know people and get to understand people. You have to learn that George won't ever turn down your request for help, though his back is killing him this week and you shouldn't ask him. Or that Alice has a wealth of skills for cutting bureaucratic red tape. And that Sam is always dependable in a pinch. And somewhere along the line you begin to learn the true costs—both economic and social—of an economics where people don't matter.

TOOLS



from Compendium

TOOLS for Homesteaders, Gardeners, and Small-Scale Farmers, Diana Branch, editor, 1978, \$12.95 from:
Rodale Press
Emmaus, PA 18049

The Recycling, Use and Repair of Tools, Alexander Weygers, 1978, 112 pp., \$6.95 from:

Van Nostrand Reinhold Co.
450 W. 33rd St.
New York, NY 10001

What do you do with a discarded hacksaw blade? Well, it's quite obvious to Alexander Weygers—you make a miniature chisel out of it. With some imagination and salvaged metal objects he demonstrates how you can construct a wood turning lathe, reshape a worn file and recycle a metal lathe. As with his other books, *The Making of Tools* and *The Modern Blacksmith* (Rain, Feb./Mar. '76), the step-by-step instructions are well illustrated. It will be necessary to have access to a machine shop and forge to duplicate many of the processes described in the manual. —PC

The Complete Book of Home Workshop Tools, Robert Scharff, 1979, 438 pp., \$15.95 hardcover, from:

McGraw-Hill Book Company
1221 Avenue of the Americas
New York, NY 10020

Learning to work efficiently with tools is not easy. You have to make mistakes, skin your knuckles, and waste some time and material as you increase your skills. You might learn a little more quickly and painlessly by combining "hands-on" experience with frequent reference to an authoritative tool "encyclopedia." This book serves that purpose. It thoroughly describes, in a serious and factual manner, the proper use, maintenance, sharpening and safety of all hand and power tools. Especially helpful are the separate chapters devoted to each type of stationary power tool such as drill presses, jointers, and table saws. —JP

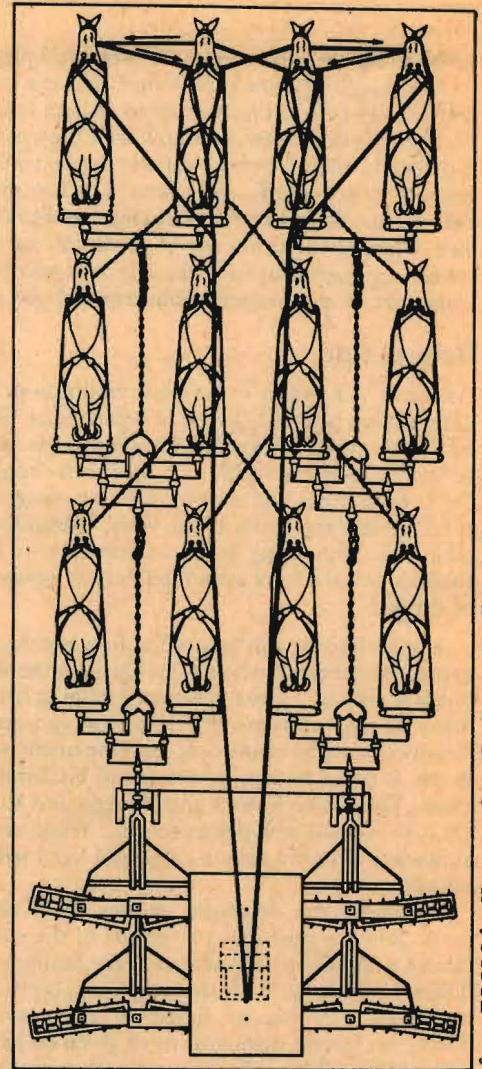
An outstanding access tool for hard-to-find implements and equipment for small-scale agriculture—the result of a collaboration between Rodale Press and ITDG. It grew out of and supersedes ITDG's *Tools for Agriculture*, to which a mass of new information has been added. In addition to U.S. and international product listings covering a wide range of scale of use, it contains a wealth of evaluative information, essays on costs of horse farming, how to buy used equipment at auctions, pros and cons of various vintage tractors, etc. Covers tools for cultivation, draft animals, tractors, equipment for seeding, planting, harvesting, cleaning and processing grains, tools for adding organic matter to soil, woodlot and orchard management, livestock equipment and tools for fish farming. A welcome, educational and valuable tool in itself for anyone concerned with small scale agriculture. —TB

WORK

Community Jobs Clearinghouse, monthly, 12 pp., \$24/yr. institutional, \$12/yr. community organizations, \$9/yr. individuals, from:

The Youth Project
149 Ninth Street
San Francisco, CA 94103

If you're looking for a job or internship in a social change area, this is the best single place to go for a national cross section of social change career opportunities. The Clearinghouse promotes access to community work as a profession at the same time supporting the development of effective community organizations. Very worthwhile, and nicely designed with jobs listed by region. —LS



A hitch for twelve horses on two tandem disc harrows cutting all hoof prints except on turns.

Resources on Employee and Community Ownership: U.S., Canada and Great Britain, 9 pp., revised June 1978, \$.75 for postage and duplication from:
Center for Economic Studies
457 Kingsley Avenue
Palo Alto, CA 94301

A fine sourcelist leading to 60 groups and individuals, 25 publications, and 7 films on various aspects of employee/community ownership. Definitely well worth the minimal price! —LS

Environmentalists for Full Employment (Australia) Newsletter, send donation of \$15 to:

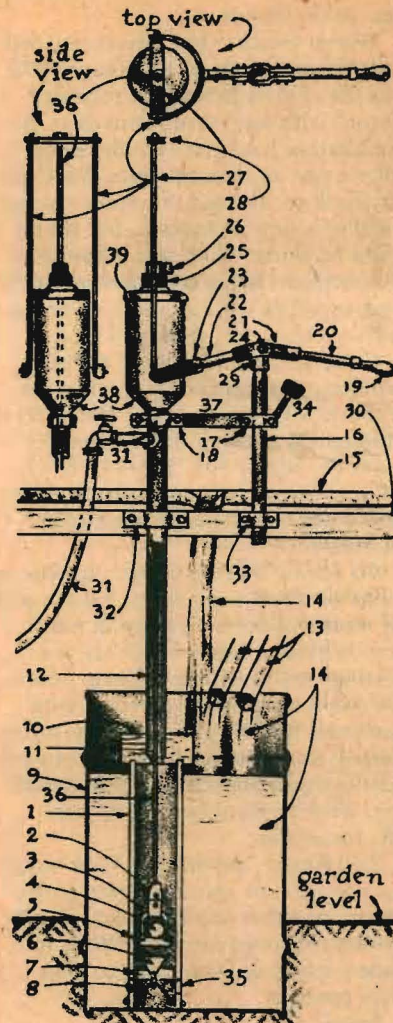
John Andrews
EFFE
672B Glenferrie Rd.
Hawthorn 3122 Australia

EFFE Australia's first newsletter has come out, with a list of a growing network of contacts in Australia. Anyone in that part of the world would do well to make connections with this quickly growing network. (See Rain, Dec. '78). —LS

Worker Participation—Productivity and the Quality of Life, Worldwatch Paper 25, Bruce Stokes, 1978, 48 pp., \$2.00 from:

Worldwatch Institute
1776 Massachusetts Ave., N.W.
Washington, DC 20036

Here's another look at workplace issues, a bit expansive, in the Worldwatch style. What's good, though, is learning to distinguish the various approaches intended to improve the lot of workers—from job enrichment schemes to employee involvement in management decisions to actual worker ownership of capital—and the real political implications of each approach. Throughout these alternatives runs a common theme that top-down innovations are usually destined to fail, while success follows those worker participation options that imply worker control. Needless to say, the range of issues here is vast, and there are worthwhile examples to learn from in all areas: whether the redesign of workplace environments in Scandinavia, the pervasive workers' councils involved with self-management in Yugoslavia, the de-segregation of labor and capital in European board-rooms, or the Pacific Northwest's own worker-owned plywood co-ops. In retooling our over-extended industrial economy, hopefully to something more decentralized and equitable, we need to sort out which of these strategies push us in the right direction—and which push us aside. Food for thought here. —SA



pump is to distribute rain & waste water to garden

from Recycling Use & Repair of Tools

- 1 pump body is made of waste plastic drain pipe material
- 2 copper link—3 copper wire cage—4 rubber ball valve
- 5 copper valve seat—6 rubber valve—7 copper valve seat
- 8 rubber band—9 water drum
- 10 wooden coupling—11 set screw
- 12 electrical conduit pipe
- 13 plastic drain pipe—14 water
- 15 outdoor porch—16, 17, 18 clamps & brace—19 pump handle
- 20 handle bar—21 yoke—22—23 fork arm of handle bar
- 24 yoke hinge pin
- 25 rubber buffer—26 collar—27 two linkage rods—28 yoke
- 29 hinge body—30 porch timber
- 31 garden hose take-off & bib
- 32 installation clamps—33 rain water from porch—34 rubber stop for pump handle
- 35 intake holes—plunger rod
- 37 brace
- 36
- 38 holding tank & lid
- 39

Future of Small Business in America, a report of the Subcommittee on Antitrust, Consumers and Employment, House of Representatives, 95th Congress, Second Session, November 9, 1978, free from:
U.S. Government Printing Office
Washington, DC 20402

SMALL BUSINESS

Neighborhood Economic Enterprises, Neil Kotter, 1978, 44 pp., \$3.50 from:
National Association of Neighborhoods
1612 20th St. N.W.
Washington, DC 20009

The pamphlet presents a simple framework for understanding possible forms of neighborhood-based business enterprises. Don't expect an in-depth analysis of the subject from this booklet. However, it does provide information on where you can find the answers in the form of a bibliography on housing, a.t., neighborhood organizations, etc.; a resource list of individuals, groups and agencies offering technical assistance; and a profile of 67 operating community economic enterprises. —PC

Shopsteading
Department of Housing and
Community Development
222 East Saratoga St.
Baltimore, MD 21202
Contact person: Paul Gilbert,
Commercial Revitalization
Coordinator

When I was living in Baltimore four years ago the city was earning a reputation for its successful "homesteading" project. Similar to the "homesteading" concept, an innovative program called Shopsteading has been developed to revitalize deteriorating neighborhoods. For \$100 and an agreement to renovate and reopen stores and offices, a business person can buy a shop building. The city offers low-interest long term loans to assist rehabilitation efforts. To date \$750,000 worth of new investment has been generated by the first 15 shopsteaders (six blacks, 2 Hispanics and 4 women). (From *The Workbook*, P.O. Box 4524, Albuquerque, NM 87106; students \$7, individuals \$10, institutions \$20) —PC

The *myth* is that large corporations produce most of the jobs. The *reality* is that small businesses have accounted for virtually all new employment created in the private sector in the past eight years. The largest firms as listed in the "Fortune 1000" generated only .8 percent of new jobs. This statistic is included in the above house subcommittee report, *Future of Small Business*. Besides its role as a job creator, the report examines small business's current status and the problems it faces with TV advertising, federal paperwork and a discriminatory tax system. What becomes obvious is that small business's share of the pie is declining due to increased economic concentration and monopolization by large corporations. However, not only small business is hurt by this trend. Consumers paid approximately \$175 billion in overcharges flowing from the monopolized 1/3 of the U.S. economy. Not surprisingly, recommendations to remedy the problem emphasized the need for vigorous enforcement of the antitrust laws. —PC

Letters

Council for Sustainable Growth and Appropriate Development

Dear Rain Staff,

I am writing to let you know that there has been incorporated here in NM a "Council for Sustainable Growth and Appropriate Development" whose purpose is to push for policies favorable to the development of an ecologically viable economy within our state. The thought is to focus not so much on specific technical solutions (as in the fields of solar or "appropriate technology") as on cultivating within our state an understanding of the nature of an ecologically sound economy and productive system, based on renewable and biotic resources; of the population-distribution, settlement, land use, distribution and transportation pattern, etc., characteristic of such an economy; and of policies which may impede or assist in the evolution of such an economy.

Sincerely yours,

Peter van Dresser
634 Garcia Street
Santa Fe, NM 87501
505/982-1375

Dear folks,

In the Feb./Mar. *Rain* you printed a letter from Marcus Oliver asking about trailer weatherization. Several months ago I met a fellow named Wayne Gathers, who works with the Office of Community Energy of the Department of Community Services in Pennsylvania. His organization is presently conducting a fairly detailed study on the effects of different weatherization treatments on mobile homes. As I remember, he has got seven mobile homes with varying amounts and different kinds of retrofitted weatherization and will compare them with the performance of an unweatherized mobile home, as well as with each other. Their agency has put quite a bit of money into instrumenting these homes, and designed their own microprocessor to handle the data, I think. Wayne was very interested in sharing the findings of his study with individuals or groups who could benefit from them. For more information write to:

Wayne Gathers
P.O. Box 156
Harrisburg, PA 17120
717/783-2576

Yours,
Bill Zoellick
Oklahoma Solar Energy Assoc.
Board Vice-Chairman

Dear Rain friends,

Winter weather has almost stopped activities in the Ozarks. January 1979 was the coldest January in recorded history with several sub-zero days. But the weather has been extreme everywhere—just as climatologists predicted. The back-to-the-land movement picked a hell of a time to happen, but things could be worse. With over 70 percent of Americans living on 2 percent of the land, rural life still has some advantages to balance out ice, snow and mud.

Some answers to *Rain* (Feb./Mar.) inquiries. Jim Copia may want to get in touch with Windy (Mark Dankoff) of Windlight Workshop, Rt. 2, Box 271, Santa Fe, NM 87501, 505/471-2573. I'm sure Windy is doing more than any school when it comes to wind/solar electricity.

To answer Marcus Oliver's questions about weatherizing trailers: I work with the weatherization program in northwest Arkansas, and we have started insulating trailers with styrofoam board. Use one or two inch styrofoam with aluminum foil. By gluing the styrofoam directly to the trailer roof, you can cut heat loss/gain both in winter and summer. Write to Insul-bead, Gravette, AR, for details.

And finally, anyone out there using low voltage, low wattage home-grown electricity either wind or solar, please contact me so we can swap ideas. Include a stamp or something to help cover postage.

Peace,
Joel Davidson
Dutton, AR 72726

Rain,

Have heard some concern about results of steel brushes to clean creosote out of prefab chimneys (metalbestos-type). Apparently the inside steel is quite thin. But what are the alternatives? A pine tree or burlap bag doesn't do much of a job on creosote and a metal chain would probably be like a steel brush. Any thoughts or ideas?

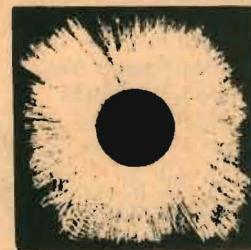
Warmly,
Kal Winer
Box 25
Burkettville, ME 04540

To my knowledge, no damage has ever occurred to prefabricated chimneys through the use of chimney brushes.

Prefabricated chimneys first appeared following World War II, and none of the brands (Pre-Jet, Metalbestos, Vitraliner, Belvent) I'm familiar with have ever failed. It is more likely that the life of the chimney would be reduced by frequent chimney fires.

Bill Day

SOLAR



from Eclipse

Eclipse, Bryan Brewer, 1978, \$5.95 from:

Earth View, Inc.
1629 Madrone Drive
Seattle, WA 98122

We didn't get this in time to review in last month's magazine, so by now the *Eclipse* is history, and this book won't help you see it or save your retina. But if your curiosity got aroused, this is a delightfully informative account of the science of eclipses, and the human havoc the mystery of their appearances has caused, without losing a sense of the beauty and wonder of the event. —TB

A Bibliography for the Solar Home Builder, by Dr. Donald W. Aitken, 1979, 38 pp., free to California residents, \$1.00 to out-of-state residents from:

Office of Appropriate Technology
1530 Tenth Street
Sacramento, CA 95814

A very comprehensive annotated bibliography of books compiled by the director of the Center for Solar Energy Applications at San Jose State U. for OAT. Organized functionally as well as by level of difficulty from newcomers to experienced professionals, this lovely publication is easy to use if you're not addicted to indices, as one does not appear. Aside from the absence of a couple of periodicals, this otherwise thorough bibliography will warm your little taxpayer's heart! —LS

Portland Sun
3334 S.W. 1st
Portland, OR 97201
503/241-0317

Attached solar greenhouse and solar water heating construction workshops are happening on a monthly basis through November in Portland through our good friends, Portland Sun. If you'd like to be involved in a workshop as a participant or sponsor, contact Marnie McPhee. Participants learn about solar energy, greenhouses and basic construction as they build. And sponsors—someone whose house is the site of the workshop—receive a beautiful living space which also heats the home and produces nutritious food. Nice exchange! —LS

Solar Information Service
Citizens for a Better Environment
88 First St., Suite 600
San Francisco, CA 94105
415/777-1987

CBE is cataloguing solar water heating systems in the nine S.F. Bay Area counties, so if you have or know of systems, contact them at the solar hot line phone number above. Also you may call the hot line if you desire information on solar energy. —LS

National Solar Heating and Cooling Information Center
P.O. Box 1607
Rockville, MD 20850
Toll free 800/523-2929

The latest bibliographies and lists we received from this center are amusing and interesting. Here are some highlights of lists that they have available: "Car Washes with Solar Systems," "Solar Fire Stations," "Apartment Buildings with Solar Systems," "Bibliography on Solar Communities," "History of Solar Heating and Cooling," "Solar in Foreign Countries," "Warehouses and Factories with Solar Systems." There are numerous others; write to them for a publications and price list.

Their toll-free hotline for information on solar energy is expanded to include Alaska and Hawaii: 800/223-4700. —LS

NCAT Bibliographies: Wind, Solar, Organizing Community Gardens, Economic Development, Building and Energy, and Alternate Waste Systems, 1978, 6 to 14 pp. ea., free from:

NCAT
P.O. Box 3838
Butte, MT 59701

These annotated bibliographies are "not intended to be exhaustive, but to identify useful, introductory-level publications" and they do a fine job of that. —LS

Solar Project Catalogue

The Center for Renewable Resources has received a federal DOE grant to develop a national catalogue of solar projects. The center will be subcontracting with state grassroots organizations to network and compile the information. To find out your state rep contact:

Center for Renewable Resources
1028 Connecticut Ave., N.W.
Washington, DC 20036

Sources of Funds for Solar Activists, outlining funding strategies and potential foundation and federal money, is also available at the above address. —PC

Creating Solar Jobs: Options for Military Workers and Communities, Mid-Peninsula Conversion Project, 1978, 69 pp., \$3.50 from:

Mid-Peninsula Conversion Project
867 W. Dana, Suite 203
Mountain View, CA 94041

Almost every week I talk to someone who wants to change jobs. Often the dissatisfaction with their employment comes from the feeling that their work not only doesn't contribute to the quality of life but actually impedes any progress in that direction. There exists a real need to help people trying to make the job shift, whether it is away from a nuclear power plant or Nestlé Corporation. Studies such as *Creating Solar Jobs* help the conversion process by identifying the available options. The report examines the skill transferability of defense industry employees to solar development, production and installation. In addition to this section on options for military workers, two other chapters are included. The first examines four solar technologies (active and passive heating, photovoltaics and wind) analyzing their commercialization capability, job creation potential and skills requirements. I recommend reading the section in conjunction with *The Job Creation Potential of Solar and Conservation* (Rain, Feb./Mar. '79, p. 20). The last chapter focuses on community solar development. It stresses the need for coalition building and outlines a variety of programs for developing neighborhood owned energy businesses. Important ideas if a decentralized, publicly accountable renewable energy system is going to be established. —PC

The Citizens' Energy Project will soon be distributing summaries of the 20-plus government studies analyzing the proposed Solar Power Satellite Technology. If you are interested in reviewing these summaries, contact: Ken Bossong, Citizens' Energy Project, 1413 K St., N.W., 8th Floor, Washington, DC 20005.

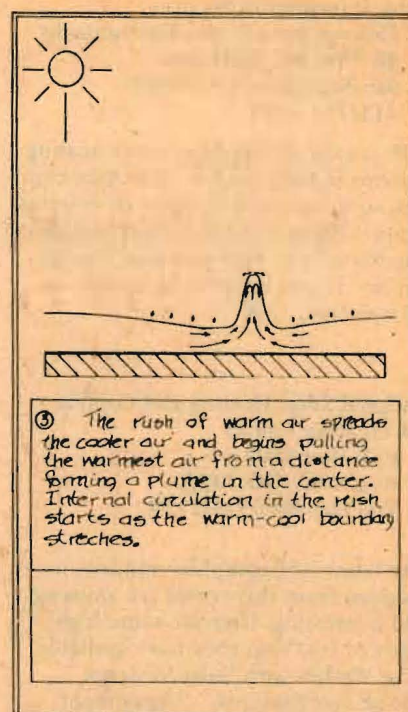
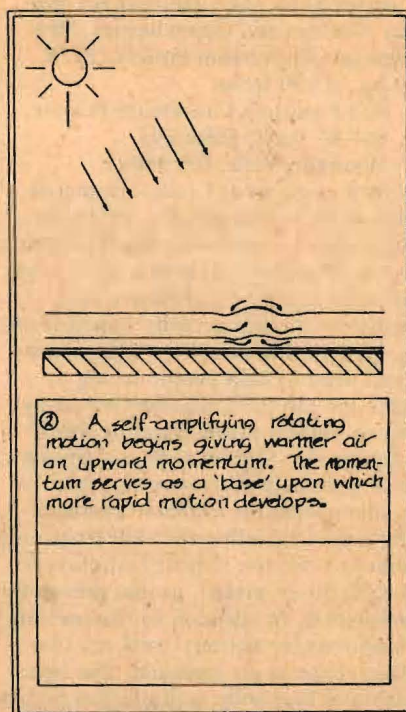
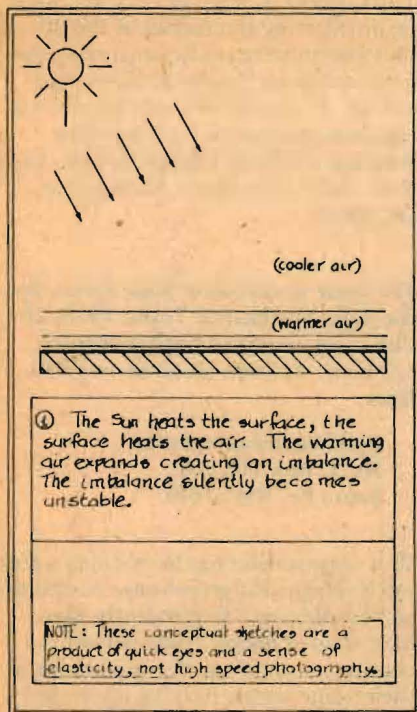
The Solar Greenhouse Slide Series, by the Solar Sustenance Team, 1978, 20 slides and cassette narrative (approx. 1/2 hour) \$15/set, all seven sets \$90 from:

Solar Sustenance Team
Rt. 1, Box 107 AA
Santa Fe, NM 87501

This organization has been doing a great job holding solar greenhouse workshops in New Mexico. More recently they have trained people from around the country to duplicate the workshops in their home states. Relying upon their practical experience and expertise, the Solar Sustenance Team has produced a series of seven slide shows (design, construction, horticulture, insects, solar greenhouses, and community and attached solar greenhouses). The community greenhouse set, which I previewed, was very good—its information clear, concise and educational. A greenhouse as a neighborhood enterprise could generate income for additional community programs by growing cash crops like herbs, teas and spices. The slides are an excellent tool for organizing community support for such a project. —PC



The largest community solar greenhouse (6000 sq. ft.) in the country is located in Cheyenne, Wyoming. Using 312 55-gallon drums for thermal storage, temperatures have not dipped below 40°F in this totally passive solar heated structure. The greenhouse contains an office, storage, bathroom and methane digester which produces heat and sludge. Community citizens actively participated in the design, construction and operation.



The Air Currents of Two Classic Passive Solar Homes

Natural climatic behavior, while increasingly recognized as both highly ordered processes and a powerful tool for building climate conditioning, is so complex, silent, invisible and foreign to our traditional awareness that quality understanding might seem beyond reach. In my view, high quality understanding of the intricate cyclic interactions of conduction, radiation, convection and material properties, in response to the daily sun cycle, is available through direct observation of these natural cycles. The highly energetic yet well protected indoor climates of passive solar homes create air currents which tend to be highly distinct and individualistic. In this, passive solar homes seem to be a new feature on earth and provide a first opportunity to observe protected yet uninhibited natural climate behavior.

Two solar homes I've observed, Karen Terry's house and First Village Unit No. 1, display individual current patterns of such beauty, clarity and consistent order as to suggest some straight-forward means by which the repetitive patterns of discrete currents can be engineered. They also can serve as a measurable expression of the thermal harmonies between the building and the environment. The drawings which follow show reasonable first order approximations of air currents and current patterns. The true behaviors in these homes, though sometimes several orders more complex, are generally as distinct and individual.

In Karen Terry's house I not only found beautiful patterns, I also found a natural pumping process which pulls cold air uphill and warm air down. In First Village Unit No. 1 I found a much more complex order which, among other things, neatly drew the hottest individual currents away from the coldest surface (contrary to the normal direction of hottest to coldest) by involving them in a figure eight convection loop.

A Discrete Air Current

One critical aspect seems to be how currents invent themselves without any obvious suggestion, i.e. turn themselves on at a time when they don't exist. This concept has a variety of very interesting spin-offs. The following sketches show major stages

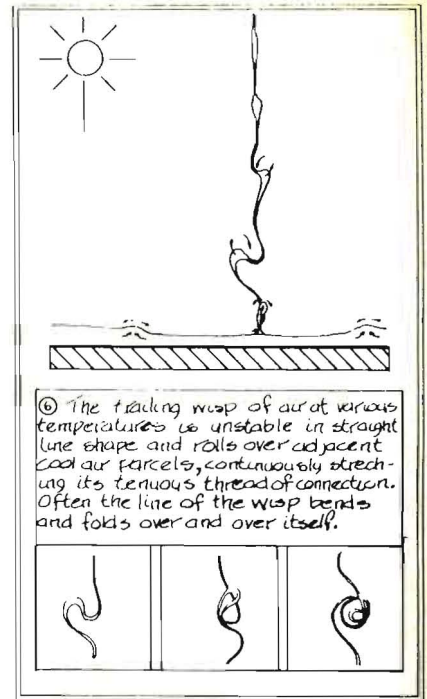
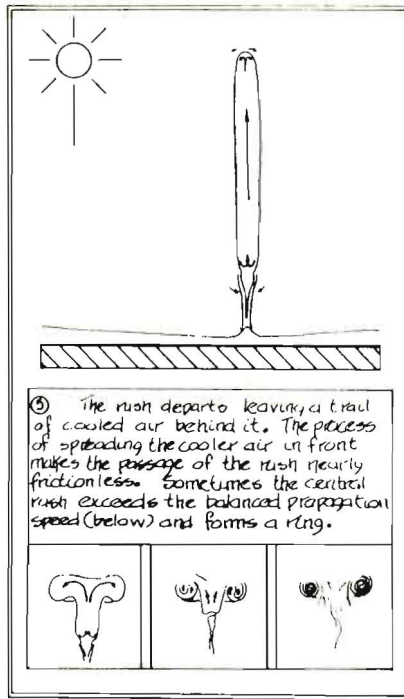
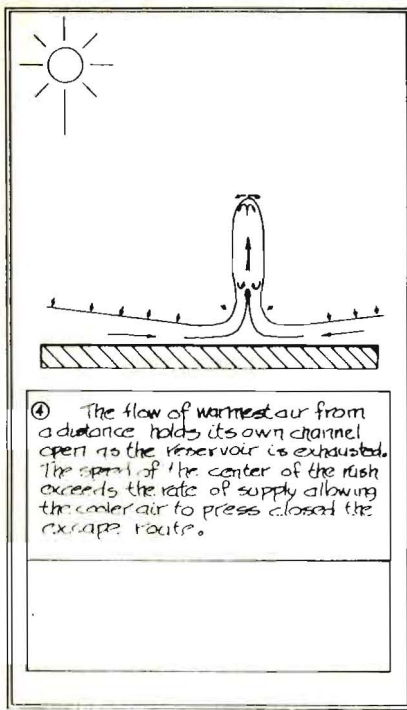
in the self-invention of an air current (1 through 6). A second crucial aspect is the way air currents travel by means of a continuous unfolding of a central core which rushes to the front, splits itself and the air mass and remains relatively stationary on the outside 'surface' as the rest of the current passes by. This and other sorts of similar orderly behaviors are generally characteristic of passive thermal air currents as contrasted with the familiar disorderly behavior of forced non-thermal air currents. The easiest place to observe simplified versions of these orderly flows is in doorways and along floors of any building where there is very commonly found a smooth and well defined river of cool air flowing steadily in one direction or another. Such observation is necessary for those who wish to attempt design with air currents.

Karen Terry's House

(Santa Fe, NM, designed by David Wright, Fig. 7)

Karen Terry's house is a direct gain solar house. It is composed of two parallel north-south insulated adobe walls which step up a south facing slope, spanned on top by alternating flat roof and tilted glazing and joined below by three floor levels. The floors and the banks between floor levels are high thermal mass elements. The house works quite well, being comfortable throughout at most times and requiring use of the heating stove on only ten to fifteen days a year. No operable insulation is used.

The first hint that something unusual is happening in the climate of the house is that the top to bottom temperature stratification is much lower than might be expected in a twenty-five foot high room with lots of windows, even considering the thermal mass. The second hint comes from noticing that in winter, both day and night, the cool air streams along the floor are gentle and tend to go northward, effectively up-hill. The keys to discovering the overall pattern of flows lies in the interaction of cool rushes which descend from the overhead glazing with the warm rushes which rise from warm mass below, the effect of the strong warm sheet of air which rushes up the broad smooth back wall of the house and then in that these current patterns operate continuously, both day and night, so long as the mass surfaces are warmer than the air and the air is warmer than the windows.



Philip Henshaw

Things always seem to move forward in bumps and lurches. A new insight, then lots of fiddling, refining, fussing and side-sliding until someone gets another good idea. Here's a big jump for passive solar design—a beginning of understanding the principles of natural air movement in buildings in ways that it can be designed to do magic—pumping cold air uphill or shuffling precious warm air off to a secure hiding place until it is needed. Figured out by a handful of incense sticks and a heart full of curiosity—no ERDA grant involved. When you add up how little is gotten from pouring all our energy research money into corporate and academic ratholes to re-discover the solar wheel, it seems we might be much wiser to give rewards to the people who have achieved the most rather than grants to those who propose the most. Phil Henshaw's my nominee for this year's reward. —TB

SNEAKY INVISIBLE THINGS

Philip E. Henshaw

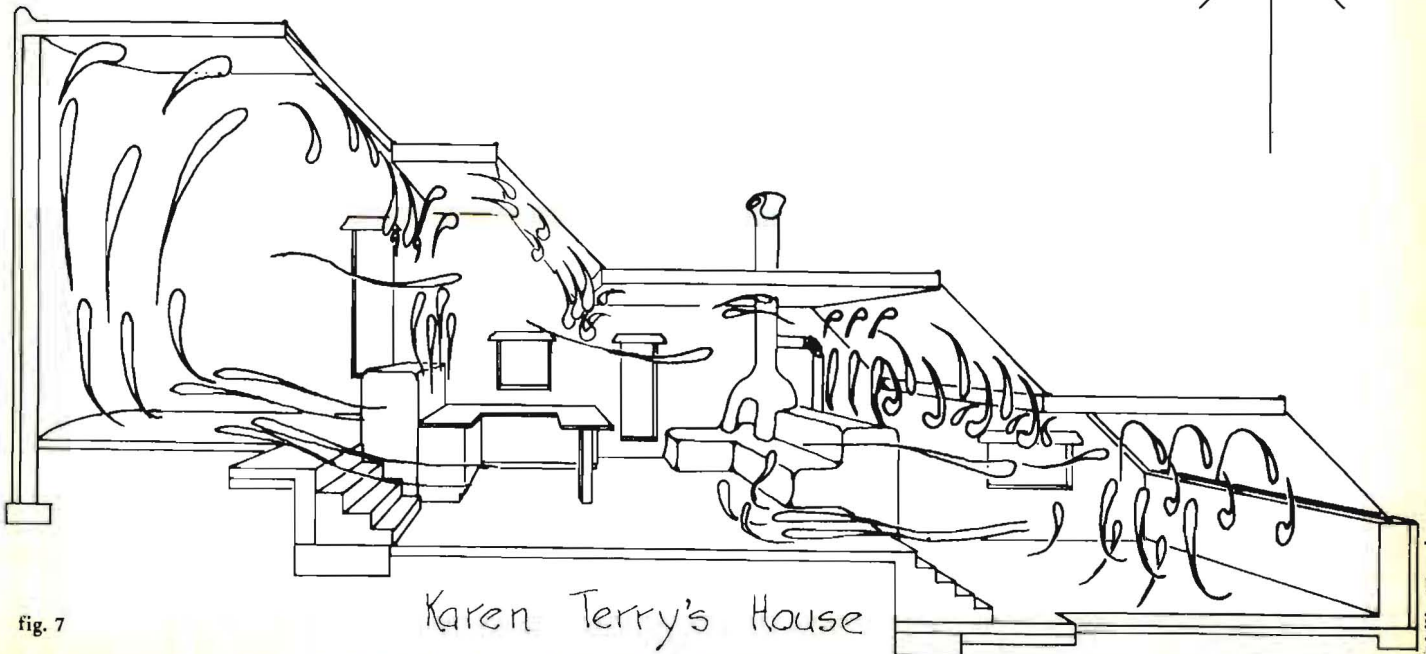
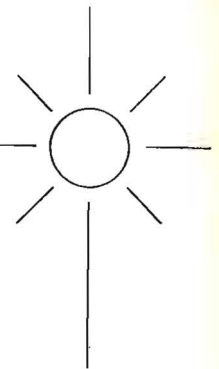


fig. 7

Karen Terry's House

Philip Henshaw

The warm air which rises in central areas from heated mass would normally rise to the ceiling and then along the ceiling to stratify at the top of the building. The down-draft from the windows falls across the full width of the building, forming a momentum curtain which effectively blocks the normal passage of warm air from under the lower adjacent roof level. This blocking is made more effective by the next lower window section, which draws from the blocked warm air flow both to supply the down-draft and by pulling along some of the turbulent drag of the down-draft. Thus, each window section supports the draft action of each successive window section. The conflict of warm and cool drafts not only tends to distribute cooling action equally throughout and effectively resists the net upward flow of warm air but also diffuses the cold draft so that when standing directly under the windows no cold wind on the shoulders is felt.

The back wall of the house is generally the warmest surface in the house and because of its uninterrupted expanse forms a strong pull on the air mass, drawing large amounts of lower air upward vigorously supplying the down-draft on the first set of windows. It seems, for a variety of not altogether too conclusive reasons, that this is the action which tips the balance and causes a gentle net uphill flow of cooler air. The total net effect, though much heat is lost by supplying the coldest surfaces with the warmest air, is a gentle feeling living space free of strong drafts and a top level to bottom level nighttime temperature stratification of around five degrees, where I would have guessed there would be a fifteen- to twenty-degree difference.

At night there is a pulsating aspect to this flow as described in figures 8, 9 and 10. I know of no particular advantage this behavior results in except in helping make sense of other observations and to give me the opportunity to describe clearly one of the more extraordinary of the common behaviors I have observed.

All sorts of air current patterns involve oscillating interactions composed of many transient flows. In general terms I find it intriguing to look for the rotating circle implied by any steady self-regulating cyclic action and for the energy which steadily supports its turning. In this case the circle lies on a piece of

graph paper relating the pressure in the warm pool with the pressure in the cool current. Projecting either of these pressures onto a pressure-time graph gives the sine wave (rising, falling, rising, falling, etc.). In three dimensions, pressure, pressure and time, the curve is a helix powered by the steady convective cooling of the house. The cooling by convection is steady; the falling of cold and the rising of warm are forced to alternate by the geometry. (Note: The reference here is not necessarily to perfect circles, sine waves nor steady cooling.)

First Village Unit No. 1

(Santa Fe, NM, designed by Bill Lumpkins, fig. 12)

Unit No. 1 is a greenhouse—mass wall and fan-supplied rock storage type solar house. The two-story, south facing greenhouse is triangular, set between diagonally oriented two-story living spaces. It also serves as circulation space to all rooms. The living space exterior walls are very well insulated (7-1/2") and cement plastered both inside and out. There are many nice things one can say about this extraordinary building; there's the playfulness with which it was made and its playfulness with the sun. The thing I find most significant, however, is not its essentially 100 percent passive heating and cooling behavior, but the way in which architect Lumpkins re-interprets the normally drab meaning of hallway to become the central inviting gesture to both people and the climate. For me this focuses directly on one of the great architectural opportunities brought by the advent of passive solar design.

The climate dynamics of the house are highly ordered but also highly complex. There are several discrete individual behaviors nested within each other, each taking up where some other has left off. My description is limited to one series of such events having to do with the way this house handles energy after primary gain, its odd habit of sending the warmest air currents into the safest places. This, combined with the factors which produce remarkably uniform nighttime temperatures seems to be the essential bonus factors which make this house so climatically successful; only two rooms received backup heating last winter.

Air Current Pulses - Karen Terry's House - Night-time, Winter Cooling Conditions
 Rise Periods ~ 10 to 15 min.; fairly regular, Effectuated temps. show sin wave like variations

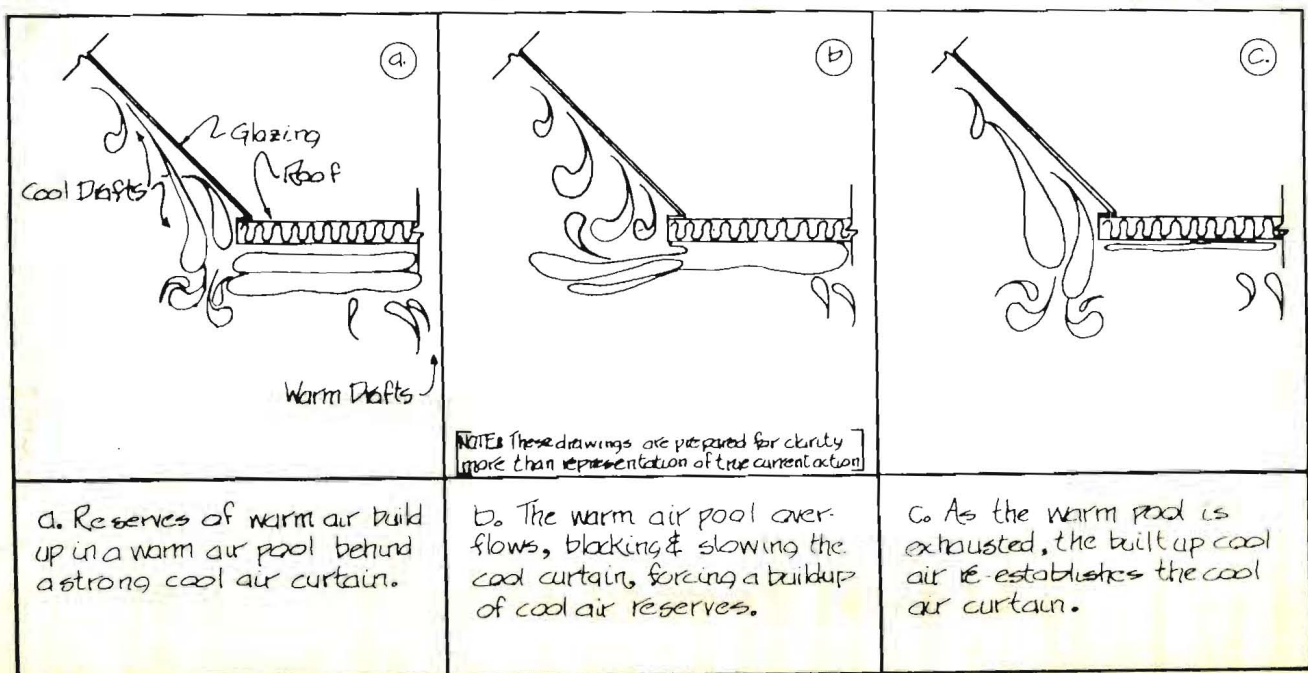


fig. 8, 9, 10

Gentleness

There are a wide variety of reasons why an impression of gentleness seems to be a measure of quality in passive solar design. It's something which is found in the experience of good passive solar homes and nowhere else. It usually means that there are sequences of direct exchanges which keep the faster currents near surfaces and often that there are few direct exchanges between very warm and very cool surfaces. It means that convective skin cooling is minimized and makes the positive health and odor effects of lower air temperatures more comfortable. At night it often means that heat is being transferred largely by radiant means rather than by normally dominant convective flow. In contrast to the dead quiet sensory deprivation of some homes designed on the basis of efficiency alone, gentleness in a passive solar home seems to be an aspect of sure-footed responsiveness to nature and a measure of its sensual life-giving environment.

Conclusion

The patterns I've been able to observe reinforce, for me, the notion that there is a better way to approach the understanding of climate dynamics than the prevalent basket of numbers approach. This especially for the vast majority of designers, builders and building occupants who really need to understand their own impact on their environment without spending endless hours laboriously stirring a cauldron of fantastic formulas delicately spiced with finagle factors. That method may, with sufficient expertise, tell what you've done, but it doesn't tell you what to do. All you need is to become a good listener.

From my listening I've learned that passive solar design is still very far from being sophisticated. Not only do most designs fail to work as well as expected, but the ones that work better than expected remain a mystery. When you look into it, you find that many of the formulas we use are genuinely foolish. One case in point is the controversy around Lee Butler's EKOSE'A houses. I can't tell you how many people have "proved" that people in his houses aren't comfortable when they say they are. I haven't had a chance to personally observe the dynamics of one of his houses, however when someone tells me they're sweating and my equation tells me they are in the later stages of frostbite, there's little question of which to believe.

There's a lot of learning to do. That the very small handful of people who have developed real skill in creating naturally luxurious building climates also are the same very small handful of people who have been devoted observers of nature is no coincidence.

Philip Henshaw can be contacted at Box 18123, Denver, CO 80218.

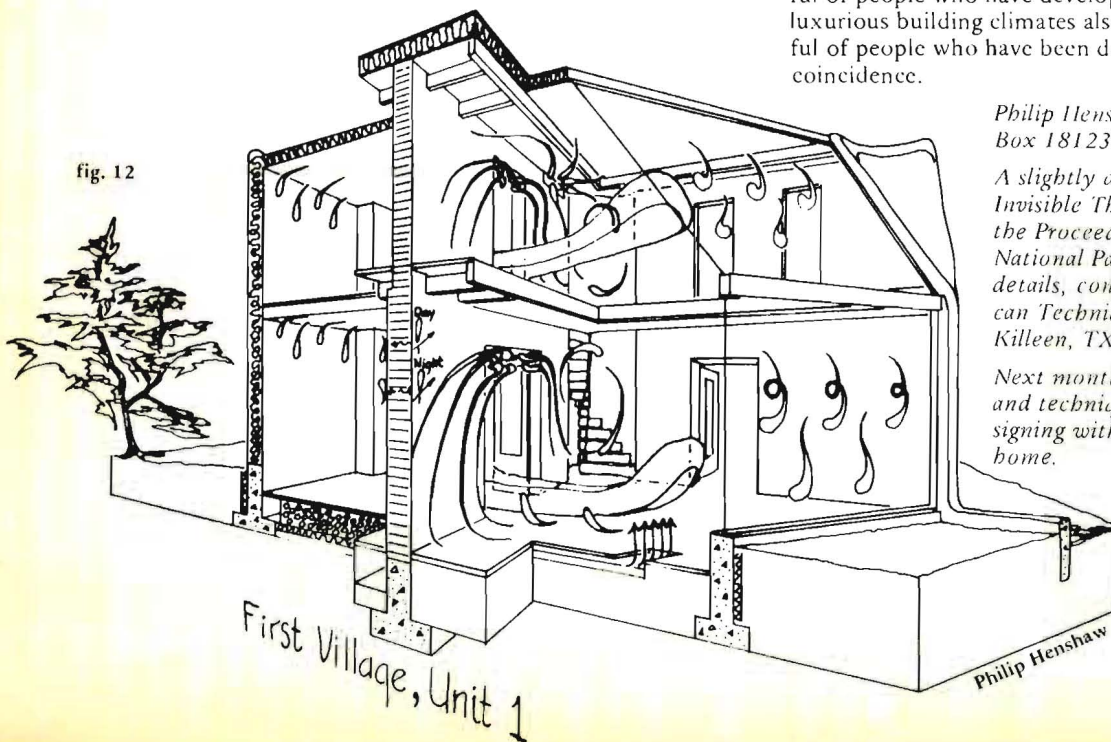
A slightly different version of "Sneaky Invisible Things" is being published in the Proceedings of the 1979 AS of ISES National Passive Solar Convention. For details, contact AS of ISES, c/o American Technical University, P.O. Box 1416, Killeen, TX 76541.

Next month Phil will outline principles and techniques for observing and designing with air currents in your own home.

When sunlight enters the house it falls on a wide variety of surfaces. There are many high and low mass areas which receive direct gain for either long or short periods, heating themselves and the air adjacent to them. The heated air adjacent to the vertical mass wall rises in smooth uniform sheets I call slip streams. Before these streams slip off the wall and become turbulent, they are drawn off sideways to the top of open doorways. This smooth lateral motion seems to be allowed, in part, by a nearly motionless air mass trapped by the deck or roof structure above the section of wall which blocks the path to the glass and by the fact that the down-draft for the windows is very amply supplied from cooler central greenhouse air. This aspect of alternate supply is among the most crucial factors in attempting to design for air currents. The opportunity is for choosing the coolest of warm air to send to the coldest surface. This allows the cold surface (the glazing) to get colder both by slowing the rate of convection motion and lowering the supply temperature.

After the sheet of warm air from the walls has entered a room by the top of a doorway, it is drawn off to replace cooler air anywhere in the room. The cooler air forms a pool, usually one to three feet deep, inside the room, which drains through the doorway into the center of the greenhouse. This cooler air is still warmer than the glazing and often serves as the supply for the cold window draft. The cold draft from the windows either turbulently mixes with warmer greenhouse air or falls to the floor of the greenhouse, supplying the up-drafts of sunlit objects or the slip streams rising on the lower walls. The energetic slip stream on the walls not only serves to transfer heat preferentially to the rooms but also serves to more rapidly cool the mass wall so that less heat is re-radiated to the glass and less convection travels from the wall to the glass when the doors are closed in the evening. The total net effect of this figure eight cycle is that the rooms are heated more quickly, the glass heated more slowly, and the rapid actions are concentrated near the edges of things giving the house a feeling of gentleness despite the massive energy flows which are taking place.

fig. 12



Ross Chapin and Remy Aquí brought Contact Improvisation to Rain last autumn. Learning about this new form of body movement in which people communicate through the natural laws governing motion—gravity, momentum, inertia—was like discovering for the first time something you've known all along. Contact feels right. Ross, an architect by training, synthesizes for us here some thoughts on the Contact experience, and how it can be used as a learning model to facilitate greater clarity and connectedness in our many separate roles and responsibilities. —SA

Dancing Our Lives

Contact Improvisation works on physical, intuitive and mythical levels, restructuring our overly rational/intellectual viewpoint. I sense that it can help many of us understand and transcend the psychological blocks that we've learned unwillingly in our lives.

Contact Improvisation is a movement which arises out of the point of contact between two or more people and their environment. Thus its name. It can include rolling, falling, being upside down, supporting and giving weight to a partner, or merely touching. The improvisors are ordinary people, in practice clothes, and most often work in a room with wood floors that is large enough to run in. They make it known that their form is not to be classified with traditional forms of dance in our culture. It has a "form," yet its emphasis is on the energy flow between people; a focus on the points of communication and sensitivity. The dance grows from the meeting, lives in the moment, and lets go, moving on to the next possibility.

Its overall effect is something like the martial arts, wrestling, rough-housing, tumbling, jitterbugging, or even lovemaking. Profoundly intimate, it is not overtly sexual or romantic. The calf of one's leg nuzzles the neck of another; an elbow contacts a thigh. The participants explore balances, finding new ways to support and give weight to each other. One partner may jump into the air and land on the shoulder or hip of another, while the receiving partner accepts the weight by folding, rolling, or sometimes melting with it. Each is challenged to be open, soft and trusting. With extraordinary attention, Contactors explore human interdependence.

Contact Improvisation is as affirming as any activity can be: anybody that can move can do it. Eleanor Luger (*Christopher Street, 5/78*) commented after taking a workshop:

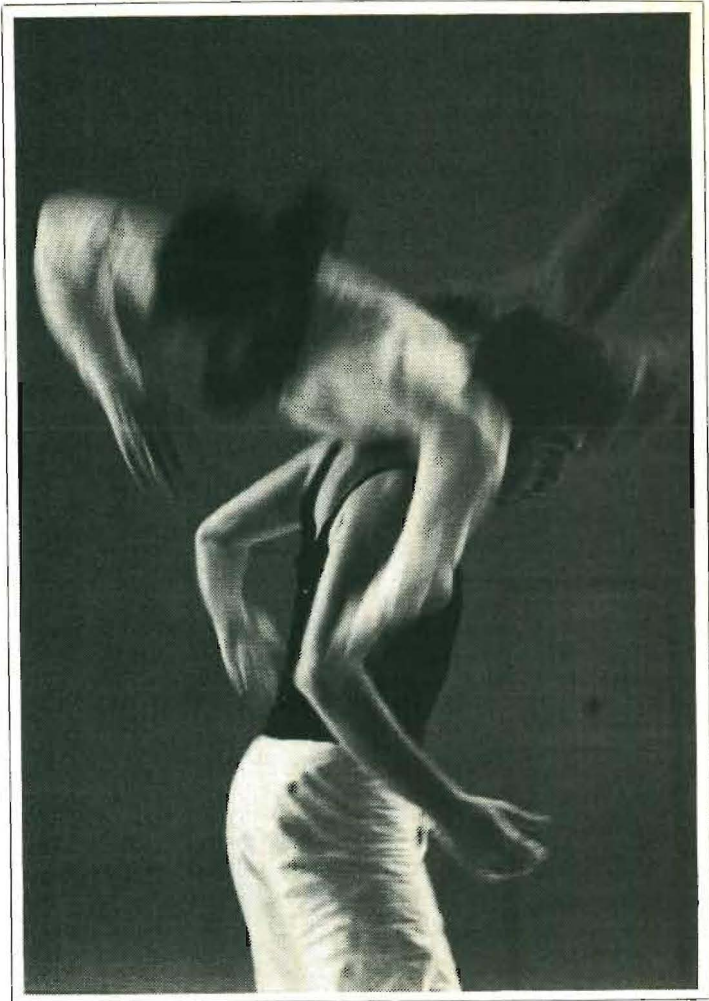


Photo by Chris Randle/Contact Quarterly

Contact & Cooperation

by Ross Chapin

ENERGY

Citizens Energy Packet, Mark Levy, 1978, 32 pp., from:

CENYC
51 Chambers Street, Rm. 228
New York, NY 10007

For people in New York city who want to start taking action directly in their homes and communities to conserve energy, this packet is a very good starting place. Where to go for weatherization, recycling, technical solar and wind information, and more—done on a community level. Write for publications list. —LS

Oregon's Energy Future, Third Annual Report, Oregon Department of Energy, 1979, 122 pp., plus appendix, free from:

Oregon Department of Energy
Room 111, Labor and Industries
Bldg.
Salem, OR 97310
Attn: publications request

The trim size, easy readability and reliable data of Oregon DOE's Third Annual Report make it a welcome relief in the vast sea of bureaucratic epics that are afloat. What makes it exceptional is its serious recognition of renewable energy sources—wind, biomass, geothermal, direct solar and conservation—in augmenting the state's energy needs and bypassing the fossil fuel deadlock. By independently fore-

casting lower demand it also counters the expanded projections being used by private electric utilities to rationalize rapid energy growth and the building of new thermal power plants. Other not so obvious issues are considered herein, such as *fuel switching*, or the use of one fuel where previously another fuel had been used. For instance, if people switch from oil to electricity for home heating and that electricity is generated by thermal plants, then even though final energy demand remains constant, the primary demand for energy increases, seriously affecting the state's conservation efforts. Despite some obvious limitations, this report is a solid example for other state energy offices and a useful workbook for people involved in creating Oregon's energy future. —Andy Konigsberg/SA

"... Once hesitant and awkward movers now willingly lifted and carried other dancers. They yielded to the flow of motion, eager to make contact. Trusting their own movement wisdom and that of their partner, they fearlessly allowed each other to climb on, balance on, roll over surfaces of the body that had never taken weight before. The dancers were charged with their own dynamics, and they charged and recharged one another."

Since Contact is based on interaction, similar dynamics occur in other activities. Recently, at a community food co-op meeting, I watched the group as they discussed a rather controversial issue. I noticed that three or four people were taking the weight of the discussion. Others, wanting to put in their thoughts, tried desperately to find a space to enter. They were not as powerful nor outspoken as those who already had the floor, and became frustrated and angry. Finally breaking out with a burst of energy, one of them spoke, but naturally met with equally stiff competition. Needless to say, the original thought did not get across. It's ironic that it was a "cooperative." Each person seemed so involved in his own position that they failed to realize the context in which the issue was taking place.

These dynamics can be explored in Contact Improvisation. Outgoing movers are challenged to become more sensitive and provide for those who are less expressive. Those who are timid are challenged to become assertive. As a level of trust is established, each person begins to realize that his own unique expression contributes to the group dynamic. The dancers achieve a state of mind permitting mutual reliance, with mutual freedom.

They realize that the "group" lives through an alignment of "whole" individuals, spontaneously cooperating within a common purpose; rather than through isolated individuals acting from separate positions. When each individual is acknowledged fully, his expression evolves freely as an integral wholeness shaping a dynamic community. Each expression is charged with meaning, and is unique and important. One sees with child's eyes a world filled with specialness and newness. In a context of openness and trust, diversity within the group is celebrated.

In a bit of satire, a group I'm with in Minneapolis is working on a performance piece using football and contact improvisation. It involves the changing roles of men, and expands the opportunities for touch: from rough and playful to tender and lyrical.

It seems that ours is a malnourished society of isolated individuals whose only opportunities for contact are sports and sex. Football has been an excellent example of a contact sport that satisfies some of the needs of those involved. It has become a part of the American Sunday ritual. Millions of spectators watch a few players every week intimately collaborate in moving a ball across the field. They watch them in the huddle, slapping each other at the end of the break, the quarterback hiking the ball from the center's hind end, players moving, shoving, blocking each other in brutal contact to achieve their tasks, and then hugging each other after the touchdown. Meanwhile, Joe Spectator is glued to his TV set, isolated from the action, feeding himself with junk food in place of his own needs for exercise and direct human contact. With so many unmet needs it's no wonder people project so much else into these games. There must be a sport for the everyman that takes into account his varying body types, abilities and needs.

There are many activities which help us understand and experience our lives more clearly. Yet, we all perceive the world through our bodies. We learn most easily and quickly by DOING, and when the doing is our own movement, we are able to experience very personally the fundamental concepts of human dynamics.

Contact Improvisation creates a context for the new age: openness, trust, cooperation, interdependence, mutual benefit and wholistic thinking. In a safe environment for growth, each individual is challenged to become sensitive to old patterns and to be open to new possibilities. Through a mutually spontaneous dance, participants develop and refine sensitivity, responsibility and assertiveness. They begin to realize their own BEingness, and share joyfully their expression with others. Contact can provide rich metaphors for our lives, encouraging us to transcend the language of our separate activities, and to perceive from their petty rules common Truths.□

In just six years a whole network of people in North America has grown up around Contact Improvisation. Contactors stay in touch with each other and recharge their energy in the expansive pages of Contact Quarterly (Box 297, Stinson Beach, CA 92790). Subscriptions are \$10. (And you thought there was only one CQ!) Further inquiries about Contact can be addressed to the Bay Area Contact Coalition, c/o Diane Sacks, 571 Guerero St., San Francisco, CA 94110.

Nuclear Power in the Pacific Northwest: Essays on Prominent Issues, by students of the Applied Research Group Contract, June 1978, \$8.50 plus \$.66 postage, from:

Charles T. Nisbet
Evergreen State College
Olympia, WA 98505

I am impressed. This ambitious academic research effort mounted by a group of students and a faculty member of Evergreen State College is page-for-page one of the best overviews of nuclear issues in the Northwest I've yet to see. Painstakingly objective in its analyses of electricity load forecasting, plant licensing and siting procedures, nuclear fuel cycles and health hazards, this report draws together in one place a vast amount of basic information, history and sources—particularly concerning the state of Washington. That's why

its probes into the nuclear power imbroglio are so well taken: the hand-in-glove nuclear evolution of the Washington Public Power Supply System, the frustrations of public intervention in the siting process of the Satsop nuclear plant, the controversial removal of Dr. Thomas Mancuso, researcher into the effects of low-level radiation on workers at the Hanford Nuclear Reservation. Hats off to these students who know how to do their homework—and why it needs to be done. —SA (Thanks to Alan Locklear)

Report of the National No Nukes Strategy Conference, Movement Edition, August 1978, 47 pp., \$1.25 plus \$.75 postage and handling, inquire about bulk rates, from:

National No Nukes Report
628 Rubel Avenue
Louisville, KY 40204

No energy networker should be without this tabloid. Despite its simple format, it is the best, most up-to-date handbook of organizing ideas to come out of the national anti-nuclear movement. Extensively detailed summaries of the 15 workshop areas covered during the Louisville conference last summer are highlighted here, laying out change strategies targeted to specific nuclear issues. These reports are accompanied by regional summaries that focus on local organizations and issues, as well as a nationwide contact list of workshop participants and resource people. Still timely enough to serve as an effective fundraiser by energy activist organizations, the *No Nukes* report is an impressive reminder of how broadly based public concern over safe energy has become. It is a movement. —SA (Thanks to Alan Locklear)

Turning a "waste" into a resource is the same kind of attitudinal change that allows us to turn a tragic experience into a positive learning and sharing experience. It's looking at something old in a very different way than we're accustomed to.

Sewage sludge, commonly considered "waste" and resultant dumped into the ocean, is currently being looked at by many U.S. cities as a valuable resource. Composting of wastewater treatment sludge rather than incinerating, landfilling, trenching, or ocean dumping (the latter which must cease by 1981 per the U.S. EPA) creates a cost-effective alternative to sludge disposal that produces a marketable end product, and completes a circular flow of organic matter, replenishing depleted soils. Composting sludge with locally available bulking materials, including paper waste products, wood chips, cotton gin trash, peanut hulls, leaves, sugarcane bagasse, straw, corn cobs, etc., is currently in operation in at least seven U.S. municipalities and cities from Los Angeles, California to Bangor, Maine. The use of the end product as a low analysis fertilizer and soil conditioner has applications from re-vitalizing stripmined land to urban landscaping and from use on agricultural crops to ornamental plants. It is more cost effective than landfilling, trenching and incineration, and more readily usable by the soil in a composted form. It is economically viable only on a regional basis because composting involves bulk volumes that can be transported only limited distances; so community composting presents a de-centralized alternative that completes a cycle within a region. This appropriate technology that is more labor and land intensive than capital intensive is now being seriously undertaken by many cities. Increasing region-

al self-reliance and recycling volumes of organic "wastes" which are highly concentrated in urban areas is a sensible way of utilizing resources that have too long been disregarded and substituted for by economically and energy expensive petrochemicals.

The process now in use most commonly and successfully (the Beltsville Pile method) works simply as follows:

Raw or digested sludge from a wastewater treatment plant, which is preferably adjacent to the composting facility, is mixed with wood chips as a bulking (aerating) material in a stationary pile that has perforated pipe and air blown through it (see illustration). The process is land-intensive, so as well as an extended pile variation which halves the space needed, innovative and inventive uses of land, such as composting on an unused airport runway as in Bangor, Maine, are possible.

This process creates temperature high enough to effectively destroy human pathogens, creates a stable end product, and eliminates malodors associated with other sludge treatment methods. The rich composted soil that is created on the same principle as a backyard composting pile takes from 3 to 6 weeks to metamorphose from sludge into compost.

The problem of the residue of heavy metals from urban wastewater in sludge, which could be transmitted to humans via plant absorption, has been studied since at least 1971. This problem can occur only in particular urban areas where industrial wastes that are not pretreated are discharged into the wastewater. The heavy metal content varies with the method

Cities, Sludge, Soil, and Sense

by Linda Sawaya

Compost Science/Land Utilization, Journal of Waste Recycling, bi-monthly, edited by Jerry Goldstein, \$15/year, 6 issues, from:

The JG Press
Box 351
Emmaus, PA 18049
215/967-4010

This fine periodical is the best place to go for the state of the art in composting. The Jan./Feb. 1979 issue has an overview of composting in various municipalities across the country. An in-depth discussion of the principles for evaluating and selecting compost systems from reliability and economics, energy and labor to the state of the art in closed and window systems appeared in the May/June 1978 issue. These provide an excellent resource for the community wishing to explore this option.

"Directory of Composting Systems," a list of American and European firms which manufacture composting and/or shredding equipment, appears in *Compost Science/Land Utilization*, Jan./Feb. 1979 issue also. Here's where to start in checking out equipment. Single issues are available for \$2.50 each.

1979 Composting and Waste Recycling Conference, May 2-4, 1979, in Philadelphia, PA. \$95.00 includes field trips to operating sites and land applications, luncheons and proceedings. Contact:

Mildred Lalik
Compost Science

at the above address

No doubt this is an excellent opportunity to obtain the most current information about municipal composting from those who have direct experience with this process.

Sewage Sludge Composting in Small Towns, by G. M. Leighton, R. D. Harter and G. R. Crombie, 1978, 18 pp., from:

NH Ag. Experimental Station
U. of New Hampshire
Durham, NH 03824

or George Crombie (above address) Since 1975 the City of Durham has been using a sewage sludge composting system. This report describes that system, the costs of operation, levels of heavy metal concentration. Another good look at the work and learnings of an operative system.

Composting Sludge for Land Application, by J. F. Parr, E. Epstein and G. B. Willson, 15 pp., 1978, from:

U. S. Ag Research Center,
Beltsville
address above

A concise overview of the Beltsville Method, including history, chemical composition of sludge before and after composting.

Costs of Sludge Composting, ARS-NE-79, Feb. 1977, 18 pp., from:
U.S.D.A. Agricultural Research Service

Comparative costs of composting with other sludge disposal processes. Gives a little history as well as operative information.

Composting Sewage Sludge by High-Rate Suction Aeration Techniques, Dale Mosher and R. Kent Anderson, 1977, 50 pp., from:

U.S. EPA (address above)

This interim report describes work performed in the Bangor, Maine, composting system in two parts: the operation at Bangor and Pointers for Other Municipalities. An important perspective—learning from the experience of others.

of wastewater treatment, the type and amount of industrial waste effluents that are discharged into the system. Abatement of these chemicals prior to their introduction to the composting process by limiting industrial wastes and by pretreatment are two obvious solutions to the problem. A January 1979 study examines the use of peat moss columns to remove cadmium from wastewaters. Cadmium is one of the most potentially harmful metals that is readily absorbed by plants. Other studies have shown that soil pH and zinc-cadmium ratio are critical to its absorption. There is a wealth of detailed technical and chemical information on the subject available and these are referenced below.

Community-scale composting seems to be a very appropriate treatment of urban "wastes" in many locales. The following cities are currently composting:

Los Angeles, California
Bangor, Maine
Durham, New Hampshire
Stratford, Connecticut
Beltsville, Maryland (sludge from Washington, D.C.)

Rochester, New York
National Park Service near Harper's Ferry, W. Virginia
Camden, New Jersey
Windsor, Ontario, Canada

*Philadelphia and Chicago have trial composting sites in operation. San Francisco and San Jose are having hearings on composting.

The following resources should help your community explore this option and the above cities provide operative models to visit and learn from. (Thanks to Sarah Fast, James Parr, John Walker, and George Crombie).

The following people are currently composting or researching composting:

Dr. James Parr
U.S.D.A. Biological Waste Management & Organic Resources Lab
Agricultural Research Center
Beltsville, MD 20705
301/344-3163

The Beltsville Research Center is putting together a list of publications, reprints and articles that they have available on composting. Some of their reprints are listed below. Write to them for a complete list; they are also happy to answer questions of municipalities on composting.

John Walker
Municipal Technology Branch (WH-547)
U.S. Environmental Protection Agency
Washington, DC 20460

George Crombie
Public Works Director
Town of Durham
Durham, NH 03824
603/868-5571

Jerry Goldstein
Compost Science/Land Utilization
P.O. Box 351
Emmaus, PA 18049
215/967-4010

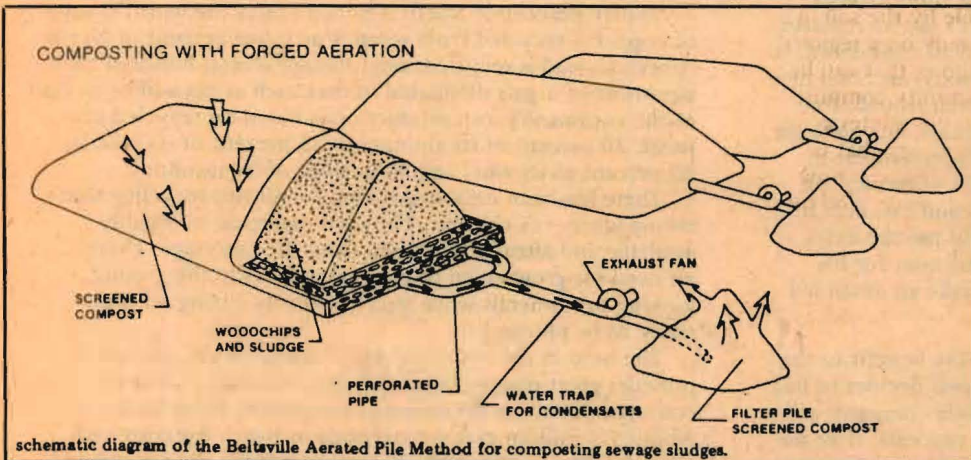
City of Camden, New Jersey
Professor Mark Singley or Michael Bolan
Camden City Composting Project
P.O. Box 231
Cook College
New Brunswick, NJ 08903
Camden is composting, Rutgers at New Brunswick is doing the research.

Composting by Clarence Golucke and *Sensible Sludge* by Jerome Goldstein are both essential reading and not be neglected. Both published by Rodale Press, 33 E. Minor St., Emmaus, PA 18049.

Compost Toilet/Greywater/Demand Water Heater User Feedback

We're planning to do an update on compost toilets, greywater systems, and demand water heaters in an upcoming issue of *Rain*. We'd like to include feedback from other people who actually have a unit in operation, or sources for good units we haven't mentioned in *Rain*. We'll be including feedback from Oregon's experimental compost toilet and greywater testing program, our friends' and our own experience with various demand water heaters, and *your* experiences. Let us know what kind of unit you have, cost, how many people are using it, problems you've encountered, how you've resolved them, and whatever else other people ought to know. Deadline May 5, 1979.

-TB



schematic diagram of the Beltsville Aerated Pile Method for composting sewage sludges.

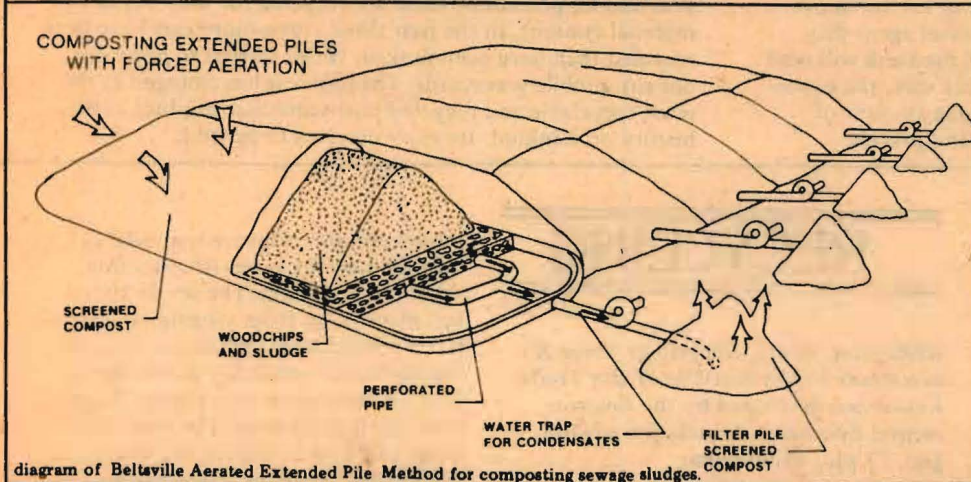


diagram of Beltsville Aerated Extended Pile Method for composting sewage sludges.

Other Composting Information Sources:

Small Farm Energy Project Newsletter, P.O. Box 736, Hartington, NE 68739.
Blobsaum, Roger, et al. 1978. Urban Waste Project: Systems Analysis of Waste Recycling for Omaha-Council Bluffs Region, Roger Blobsaum, 1340 42nd St., Suite A, West Des Moines, IA 50265.
Epstein, E., G. B. Willson, W. D. Burge, D. C. Mullen and N. K. Enkiri. 1975. A forced aeration system for composting

wastewater, sludge. *J. Water Pollution Control Fed.*, 48(4): 688-694.
Tietjen, C. and S. A. Hart. 1969. Compost for agricultural land? *J. Sanitary Engineering Div., Proc. Amer. Soc. Civil Engineers*, pp. 269-287.
Walker, J. M. 1973. Composting sewage sludge: why? *Compost Sci.* 14(4): 10-12.
Willson, G. B., E. Epstein, and J. R. Parr. 1977. Recent advances in compost technology. In *Proceedings of the Third National Conference on Sludge Management, Disposal and Utilization*, p. 167-172.

The Conserver Solution, Lawrence Solomon, 1978, \$12.50 (hardback) from:

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

An excellent first attempt to lay out the basis for conversion of Canada from a consumer society to a conserver society. Good detailed examples of specific Canadian problems and how to deal with them—from dependence on materials export to foreign (that's us) ownership of most of its industry, to the necessity to achieve fundamental changes in advertising law. Many good ideas are simply and clearly presented. Some need further development, but all are sure to form the basis for a new and livelier discussion of Canada's future and our own. Recommended. —TB

"Assume we didn't have planned obsolescence and everything lasted twice as long, that our goods didn't go out of fashion every year and they didn't wear out as often. Since we'd have to replace everything half as often, we'd be twice as well off.

"Consider the individual who purchases a car. If his tolerance is similar to others, the car starts to be more trouble than it's worth after about three years. Let's say he replaces it every three years, and that (trade-ins and all considered) it costs him \$5,000 each time. To run it for six years costs him \$10,000. Now what if that car could give him trouble-free service for six years? After the first three years, he could use that \$5,000 he would have spent for a replacement car to buy an additional car. For the same amount of money, he could own two cars. If he didn't need a second car, or if he didn't want a more modern model, he could use the extra \$5,000 to finish his basement or buy a mink coat for his mother-in-law or pad his bank account or take an extended vacation.

"The benefit to the individual is clear. The benefit to the overall economy is also clear. If the individual decides to buy a second car with the \$5,000, the automobile company will break even. It will have sold him the same two cars. If he decides to spend the money on his basement or his mother-in-law or a trip, a furrier or a carpenter or a travel agent may benefit instead. If he puts it into the bank, the bank will lend it to someone who'll spend it for him. Either way, the economy as a whole will not be suffering. The same amount of money will be circulating, generating jobs and profits. . . ."

"Increasingly, our ability to recycle the materials in goods is improving. Soon, virtually all materials will be efficiently recycled by being converted into energy—they won't be wasted at all.

"What will be wasted is the labour—someone else's time—that went into creating the original goods. When the labour in those goods is destroyed before its usefulness is gone, the value of that labour has been reduced. It has been devalued, denigrated, degraded.

"Whether a professional or a blue-collar worker, no one likes to see his work degraded. A lawyer who draws up an elaborate contract only to have it ripped up when his client changes his mind gets a sinking feeling in his stomach, no matter how generously he's been paid for his work. The factory worker who sees the products he helps put together end up in his neighbour's trash cans feels cheapened by it, despite the theory he may have heard that throwing away goods creates employment."

"Forty percent of North America's (and the world's) supply of copper is recycled from scrap. Forty-five percent of North America's lead is recycled, even though several hundred thousand tons of it gets dissipated in uses such as gas additives. Half of the continent's iron production is based on recycled material, 20 percent of its aluminum, 25 percent of its rubber, 40 percent of its zinc, and 50 percent of its antimony.

There has been only one reason for all this recycling that's taking place—it's cheaper. The used materials are readily available and already processed from the raw stage. There's no need for grown men to go digging holes in the ground looking for minerals when they're already sitting on top, ready to be plucked.

The hero in the recycling saga is the junk car. Because it provides great quantities of different materials, it has encouraged people to develop ways of getting them back. About 7.5 million cars are scrapped in North America each year and 80 percent of these are recycled for their metal and material content. In the past three years, more cars have been recycled than have been junked. We've started to mine our old automobile graveyards. The junk car has emerged as the most recyclable and recycled post-consumer product in the history of mankind. Its story deserves to be told. . . ."

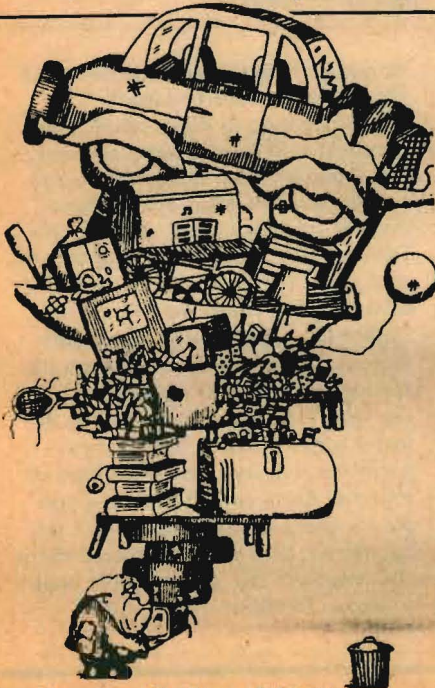
RECYCLING

Reduction, Reuse, Recycling: Three R's as a Guide to the Best Use of Our Finite Resources, developed by the Environmental Education Association of Oregon, 73 pp., \$3.00 from:

Environmental Education Project
Portland State University
P.O. Box 751
Portland, OR 97207

The hope of the earth may lie in our children. It is our responsibility to raise their consciousness of the finite resources so they will not be depleted and unavailable for future generations. The Three R's is an educational concept geared to elementary through high

school children who are basically uninformed on the issues of reduction, reuse and recycling. The set of 20 lesson plans range from traditional classroom methods to exploratory discovery methods and simulation games. Problems are presented which range from how much paper is used in your classroom and how to reduce this usage, to what effect recycling waste has on energy conservation, resources and economics. It then states the attitudes to be developed in the student, the process, time frame involved, materials needed, follow-up questions and resources and references available. Reduction is the underlying principle which reuse and recycling systems are based on. Three R's offers a valuable tool for teachers to integrate Reduce Reuse Recycling education into their curriculum. —Nandie Szabo



Recycling: The State of the Art, an educational handbook based on the proceedings of the California Resource Recovery Association's Second California Recycling Conference held in November 1976, compiled and edited by Christine Olsen, published by the Community Environmental Council, 1978, 130 pp., \$10.00 from:

Community Environmental Council
P.O. Box 448
Santa Barbara, CA 93102

To those who have been into recycling for years this handbook may not offer anything new. The state of recycling is fluctuating and changing so rapidly that it is difficult for any publication to keep up with it. If you are interested in getting a handle on where recycling has been and some of the problems it is facing today, *The State of the Art* may prove very informative. Though California-oriented, these conference proceedings deal with issues all recyclers face, such as public policy decisions affecting statewide recycling (to wit the Resource Conservation and Recovery Act) and low technology solid waste treatment systems versus high technology resource systems (focusing on issues of type of operation, energy pollution impact, availability of markets, employment potential, social impact, impact on the solid waste stream, funding and economics). Successful models for recycling centers are exchanged as well as environmental education concepts. Materials from the conference have been condensed and organized into a well laid out bundle of collectively assessed recycling goals . . . goals well worth reviewing or learning anew. Nandie Szabo

MEDIA

On Format: Paper/Space

In looking at *Rain's* Wind Energy Bibliography compared with NCAT's Wind Bibliography, I discovered that *Rain's* annotated list of 20 or so sources was printed on one sheet, two sides, and NCAT's 17 entries were on four sheets, two sides, with a heavy cover sheet. Doing layout and design at *Rain* has made me constantly aware of how we publish information and the format we choose to use. Not surprisingly, I found that three of our own publications are done with the same problem in format approach that I saw in NCAT's bibliographies, two of which we only printed on one side! The problem is that we typed our copy on a pica typewriter (elite is somewhat better but still does

not compare to typeset font sizes) rather than having our super-speedy, small business typesetter, Irish Setter, set the type. On the wind bibliography we spent a little more money on typesetting, but I'm willing to bet that we still saved a bundle on paper. So we're looking at that, and when it's time to reprint those publications, we'll undoubtedly go the route that uses less paper, supports our local typesetter, and probably ultimately costs us less and looks nicer too. —LS

GOOD THINGS

OCC Self Help Manual Survival Guide to the Triple Cities 1978-1980, Off Campus College Staff, \$1.00 from:

Off Campus College
State University of New York
Binghamton, NY 13901

The people at the Off Campus College at SUNY/Binghamton have come up with a "self help manual" to their area which will surely prove to be a useful model to other groups who wish to compile similar guides for their areas. The guide not only includes information on housing, restaurants, banks, co-ops, etc., but it also provides information on how to fix your bicycle, how to protect yourself from rape, how to deal with utilities, and other information which should be included in a "self help manual." —YL

The Compleat Freighthopper's Manual for North America, Daniel Leen, 1978, \$4.95 postpaid from:

Daniel Leen, 6601 116th Ave., N.E.
Kirkland, WA 98033

For those daring souls who've always fantasized about "riding the rails" but never knew how to do it, this is your book. Daniel Leen, a rider of the rails since 1963, has written everything you need to know about this "great North American folk tradition"—how to get on and off without breaking a leg, how to avoid the "heat" (freighthopping is against federal laws and most state and local laws as well—hopper beware!), how to get information about your train and where to go, what equipment to bring and why, and much more, all written in a fun, yet informative style. After reading this enjoyable book, not only did I gain a sense of the rich and rewarding lifestyle of the hobo, but I was ready to join them. Are you? —YL

AGRICULTURE

Camp Joy

131 Camp Joy Road
Boulder Creek, CA 95006

Alan Chadwick inspired this enchanted small French intensive farm nestled in a sunny opening in the Redwoods of the Santa Cruz mountains. His garden project at UCSC was the pebble in the pond whose ripples are still effusing a region eight years later. My first experience with French intensive biodynamic gardening was a magical one at Camp Joy in 1974, filling me with new perceptions in gardening and living. Camp Joy is now offering a four-month apprenticeship in horticulture and market gardening from May to September for 8 to 12 people. Those participating in this in-depth training session will receive detailed demonstration, instruction and practical experience in intensive vegetable, flower, fruit and herb production, and marketing. Animal husbandry and beekeeping also will be offered to specifically interested people. Every aspect of horticulture from plant propagation, soil and bed preparation to floriculture as a cottage industry will be covered. My experiences with this labor intensive method produced incredible results, as the title of John Jeavons' book, which was used while I was there implies: *How to Grow More Vegetables Than You Thought Possible on Less Space Than You Can Imagine*. Here's an opportunity to live and work and learn in an intensive training session with people who have eight years of productive experience with their joyous land. Written applications should be sent to them —LS



from *The Compleat Freighthopper's Manual*

A new coalition of national and local citizen groups has recently been formed to encourage the public, government and business to concentrate on life's four necessities in anti-inflation policy. COIN (Consumers Opposed to Inflation in the Necessities, 2000 P St. N.W., Suite 413, Washington, DC 20036) is launching an educational campaign that will focus on food, housing, energy and health care under the premise "Inflation isn't a natural disaster; it's caused by people who profit from it." The initiating group of COIN includes the Consumer Federation of America, Exploratory Project for Economic Alternatives, Community Nutrition Institute, Environmental Action, International Association of Machinists and the National Urban League.

We hear everything but profit being blamed for inflation—seniors who supported national health insurance, factory workers trying to maintain their purchasing power, consumers "living beyond their means" to pay for Christmas presents,

police and firemen trying to maintain services, garbage collectors and hospital orderlies and case workers—the list never ends, except when we arrive at the doors of the big corporations.

We agree that wasteful government spending is one reason we have inflation. The government is bloated by bureaucracy. Civil service has to be reformed. Tough choices have to be made. We find it hard to understand why, for example, the Pentagon's budget is rising in peacetime while the president bluntly tells the cities to give up any hope for federal relief.

Even more important, simply cutting taxes or reducing government does not confront the primary sources of inflation. Even if Americans receive *more* dollars from lowered taxes, the dollar will continue to buy less and less while being devoured by inflation.

The fact is that inflation assaults Americans when they try to afford the basics of life—food, shelter, energy and medi-

INFLATION IS CAUSED BY

Prices Go Up Because Someone Raises Them

1. Food

Between 1970 and 1977, food prices rose over 50 percent faster than the prices of non-necessities. The average food price hike was about 8 percent a year. Spinach went up 9 percent a year, margarine 10 percent, fish 11 percent, and beans 12 percent.

1978 was even worse. The annual food inflation rate for the first half of the year was 18 percent.

Who's to blame?

Not most farmers. They get only 3 cents of every dollar you spend on bread.

Not workers in the food industry. Between 1970 and 1977, their hourly wages didn't even keep up with the increase in the food marketing bill.

One of the big reasons for rising food prices is the monopoly power of food processors, grain dealers and other corporate middlemen. While food prices went up 67 percent between 1970 and 1977, after-tax profits in food marketing rose over twice as fast: 150 percent!

Profits like that are not surprising when you realize how few corporations dominate the food industry. Four firms make 75 percent of the bread and flour. Three firms control 82 percent of the breakfast cereals. One firm produces 90 percent of all soup.

While much of farm production is still done by independent, family farmers, big business is moving in. Already 97 percent of chicken farming, 85 percent of citrus production, and over 90 percent of sugar production is controlled by vertically integrated corporations.

Unlike most countries, the United States has no program to prevent sudden price rises (due to shortages or weather) from jolting the consumer and staying up. For instance, in the period 1973-74, basic food prices went up 32 percent. Even though the shortages are now over, consumer prices remain high.

Our overall farm programs don't adequately protect either the farmer or the consumer.

2. Medical

Last year, hospital charges jumped 10.4 percent. Doctors' fees went up 9.2 percent. And drug company profits were over 25 percent higher than average corporate profits. Between 1970 and 1977, medical costs rose more than 50 percent faster than the prices of non-necessities. Ten years ago, a day in the hospital cost \$48; today it costs \$183.

Where does the health care dollar go? Well, the average doctor made \$63,000 in 1976. While doctors' fees have risen much faster than the cost of living, pay for nurses and other hospital workers has barely kept pace. In fact, from 1955 to 1975, the share of the consumers' daily hospital charge that goes to labor *dropped* 14 percent.

Much of the blame for rising medical costs goes to insurance companies which have been merely collection agencies for the doctors and the hospitals.

Regulated loosely by the states—if at all—these insurance giants have allowed doctors to pass on to patients the cost of every overpriced new medical gadget that attracts their professional fancy. They have looked the other way as unnecessary surgery (costing almost \$4 billion in 1975) and excess hospital beds (150,000 too many in 1974) have driven up insurance rates.

Spending \$5,000 a year on advertising to each doctor (while restricting advertising of prices to consumers), the big drug companies have kept profits high: an 18.2 percent rate of return last year.

This reprint from Campaign for Economic Democracy News outlines a coalition forming to take the profit out of inflation. Provides some food for thought and a starting point of strategies to follow to bring this about. CED News is published monthly, 304 S. Broadway, No. 501, Los Angeles, CA 90013. —LS

It's Time for a Progressive Agenda:

Food:

Develop Consumer Cooperatives and direct farmer-to-consumer marketing.

Protect the family farm to keep the farm economy competitive.

Create grain reserves, export controls, and other programs to keep shortages from driving up food prices and to stabilize farm income.

Increase efficiency by reforming Interstate Commerce Commission surface transportation regulation.

Medical:

Break the control of doctors, hospitals, insurance companies and drug companies over American health policy.

Increase prepaid health plans that take away the economic incentive for unnecessary operations and over-medication. Begin tough controls on hospital charges.

Enact comprehensive national health insurance for all Americans, with strict budget controls. The federal government should actively promote preventive care (which saves lives as well as money) and increase efficiency in the medical industry.

cine. When the consumer pays the bills for these four necessities, the money goes not to big government but to big business. The necessities of life are provided to us by monopolistic forces—banks, food processors, speculators, oil and utility companies, pharmaceutical firms, hospital suppliers.

This fact of monopolies providing necessities is plainly at the root of modern inflation.

There can be no serious anti-inflation program that ignores profiteering off of basic human needs.

COIN has been endorsed by the National Urban League, Consumer Federation of America, Public Citizen, National Council of Senior Citizens and the International Association of Machinists.

This progressive coalition is urgently needed. Otherwise, progressives themselves will be blamed for inflation. Under the guise of "cutting government spending," politicians will impose more costs and more suffering on the victims—con-

sumers, workers, seniors, minorities and the disabled—instead of holding the profiteers accountable.

Democratic Party leaders may think they are co-opting the inflation issue from the Republicans, but in reality the Republicans even in defeat are co-opting the Democrats into the program of Herbert Hoover.

President Carter himself is setting the pace by adopting the classic reactionary formula to cure inflation—start a recession. The president's plan would limit wages, ask for voluntary restraint by business, reduce the amount of money available, increase the cost of money, reduce help to those in need, and increase military spending.

Obviously this is a way to make the poor poorer and still not stop inflation.

What will work if not the Carter plan? Nothing less than an approach which treats the causes as well as the symptoms.

The only solution is to take the profit out of inflation.

PEOPLE WHO PROFIT FROM IT

3. Housing

High interest rates and real estate speculation have driven housing costs through the roof. The cost of a new home has jumped from \$23,400 in 1970 to \$48,800 in 1977. These high prices are made worse by the high interest policies dictated by the Federal Reserve Board, a quasi-government agency closely allied with big banks.

The bankers who dominate thinking at the "Fed" see high interest rates as good economics. And, for bankers who profit from high interest rates, that kind of economics makes sense.

But, for home buyers, the effect has been disastrous. Between 1970 and 1977, home ownership and rent rose more than 25 percent faster than the costs of non-necessities. And, during the first half of 1978, mortgage interest costs jumped nearly 9 percent!

If present trends continue, the price of the average new home in America will be \$90,000 by 1980.

Between 1970 and 1976, the monthly cost for a first time home buyer went up 73 percent. And, to understand the importance of this inflation in home costs, you have to realize that 20 percent of the average family's budget goes into the monthly costs of home ownership or rent.

More and more families who dream of owning their own homes are being priced out of the market. And a growing number of homeowners—especially the elderly on fixed incomes—feel the threat of being squeezed out of their own homes by skyrocketing property taxes, insurance rates and fuel costs.

What has caused the home price inflation? Well, since 1970, the finance and land components of the price of a new house have increased by a third. In 1970, they were 27 percent of the cost. By 1977, they had risen to 36 percent. And mortgage interest rates rose from 8.4 percent to 9 percent. At the same time, the share of the cost of building a new home that goes to labor *dropped* 8 percent!

And, while land costs soar, tax laws—particularly the loophole for capital gains from real estate—actually subsidized land speculation.

4. Energy

It's no secret that energy prices—utility rates, gasoline prices, fuel bills—have gone up faster than just about anything else. From 1970 to 1977, energy prices rose 99 percent—more than *twice* as fast as the price of non-necessities. Last winter 1 of every 5 older Americans had to choose between buying groceries and paying the utility bill. And so far this year, gas and electric rates are going up at an annual rate of 17 percent.

And energy price inflation fuels inflation throughout the economy. Increased energy prices mean increased shipping costs, increased fertilizer prices, increased manufacturing costs. And, because so many products are made of petroleum-based plastics, increased oil prices *directly* push up the cost of items from clothing to phonograph records to automobile dashboards.

The energy industry is highly concentrated. Electric and gas utilities have local monopolies. The eight largest oil companies control 50 percent of domestic oil production, 40 percent of natural gas, and increasing amounts of coal, uranium and alternative fuels.

The energy conglomerates sometimes claim that environmental protection costs have driven up fuel bills. Yet, according to Chase Econometrics, *all* federal anti-pollution requirements will increase the cost-of-living by only half of one percent this year—including regulation that doesn't even affect the energy industry. And it doesn't count the lower medical costs that come from cleaner air and water.

The small price we pay for a cleaner and safer environment doesn't explain why big oil company profits doubled between 1970 and 1977. Or why Congress, which talks about controlling inflation, spent most of 1978 debating how much to *raise* natural gas prices.

The fact is that energy price inflation is enormously profitable for a handful of big oil companies. And as long as national energy policies are set by them—and by their friends in government—we're never going to be able to beat inflation in America.

Housing:

End monopolistic practices among realtors, lawyers, title companies, developers and building supply firms and other segments of the housing industry.

Enact tax reform to stop encouraging land speculation that drives up home prices.

Provide lower interest rates and credit allocation to reduce home mortgage costs, increase construction and reduce costly cycles in home building. Increase housing rehabilitation programs.

Support rent stabilization legislation in areas with low vacancy rates. Build tenant organizations.

Energy:

Prioritize development of low-cost renewable energy sources, such as solar power.

Regulatory agencies must get tough on oil companies and utilities that are inflating prices.

Promote energy conservation and transportation policies that eliminate waste. Promote insulation.

Strictly regulate natural gas and oil prices, to keep them from rising to OPEC monopoly price levels.

End oil company ownership of coal, uranium and other competing energy sources.

wood news

by Bill Day

The expanded use of wood energy has become so obvious that its potential future use is well assured despite the moans and groans from the wood appliance industry over the lack of national tax incentives. Many groups and organizations have advocated accelerated utilization of wood as an immediate remedy for our energy problems. I urge all interested persons to contact Treasury Secretary Blumenthal, who according to *Wall Street Journal* (Feb. 28, 1979) has the authority to make wood burning stove and furnaces eligible for the new energy tax credit *now!*

Seminars and workshops related to safe installation, operation and maintenance of wood burning appliances are now becoming quite popular. Most seminars are free or low cost. In addition to many local fire departments and state home extension services, a great many responsible wood stove dealers have been providing this consumer service for some time. For more information or possible sources of speakers, write:

Wood Energy Group	Kristia Associates
c/o Georgia Tech	P.O. Box 1118
EES-TDL	Portland, ME 04104
C&S Building	
Atlanta, GA 30332	

By the time you read this, we will have finished putting on over 30,000 (!) labels on our new publications list and soon the subscriptions/orders will be rolling in. To all those people who responded to our plea for HELP (*Rain* Vol. IV, No. 10) and sent in some names of people—many thanks! Because of your tremendous response, we got most of our names donated, and the only list we bought was a listing of college libraries. If you can think of any other names of people who would be interested in *Rain*, send them along. We

will include them in our second mailing in the near future. We have made two other trades of mailing lists since our last issue. They are: High Country News (Wyoming) and Environmental Action (Washington, D.C.). If you receive more than one copy of our flyer, please pass them on to a friend.

We have recently acquired the help of several high school students from the local alternative school. Shawn, Jillian, Jennifer and Karl have been a really big help, and their energy is refreshing. —YL

Raindrops

Totality

What wonder! Several of us from the *Rain* extended family migrated to the east side of the Cascades to witness the passing of Moon over Sun. After beaching my old Comet along a back road in the rolling hills near Dufur, Oregon, we hiked through old wheat stubble high onto a prominence with a commanding view. It was a cold, mostly clear day. To the west were the foothills of the mountains, capped in cloud cover; to the north, perhaps 25 miles away, Washington, rising up from the Columbia River; and to the east—the Sun, emerging from behind a low bank of clouds, just in time to stir our anticipation. As we settled into various waiting postures—on blankets, on foot, masking our eyes with our hands—the brilliant star began its demise. Like the first hint of an exponential curve, the daylight degraded slowly, almost imperceptibly. We peered into

the west, waiting to see the famous Moon shadow that rushes across the land prior to totality. The wheat stubble around us became softer and silvery. One of us announced the shortening minutes—it seemed impossible that anything could really happen. I huddled in my down coat against the cold wind. Then the stray clouds overhead began to take on a deep purple/black color. The silverness dimmed. Our hearts started pumping. Several stars began to emerge. Suddenly ribbons of undulating light passed under our feet and to the west of us. Then . . . totality . . . deep twilight enveloped us. In the darkness we turned eastward to capture our prize. There, a ring of leaping flames silhouetted a giant black orb—larger than any Sun I'd ever seen. Though safe to look, it was difficult to stare. Red flares streaked out from the bottom of the

silhouette. Stars were out and the clouds were black. A night chill stirred. To the far south and north the horizons glowed with daylight visible beyond the Moon shadow's reach, like sunrise and sunset in contradiction. It was less than day—more than night. "God." We milled around, laughing. "GOD!" A few incredible minutes passed. . . . Then a great crack of light seared from behind the passing moon and flooded the twilight. I dared a look at the unbelievably brilliant crescent of Sun. As the twilight reversed itself, a small cloud moved in front of the eclipse, giving us safe cover to observe the re-emerging Sun. The sky brightened and the land silvered again. Suddenly, we were on the other side of the Magic, and we fumbled to share with each other the totality of our collective experience. . . . —SA

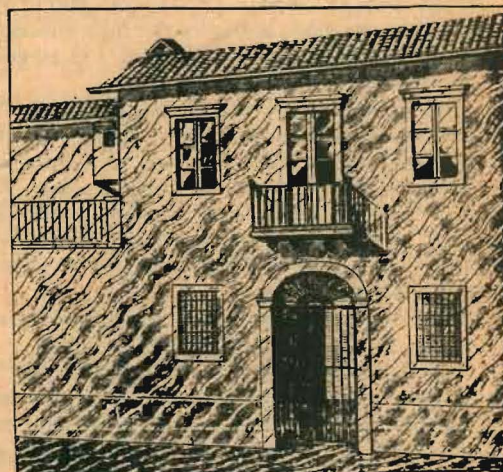
I recommend the "Spring '79" issue of *Home Energy Digest—Wood Burning Quarterly* to alternative energy enthusiasts. The articles I found of specific interest are: "European Tile Stoves," by Jason Schneider; "Woodburners: An Uninsurable Risk," by Jay Hensley; and "Multiple Use of a Single Flue," by Dr. Jay Shelton.

Other articles about home design and retrofitting, composting toilets, and woodlot management are all interesting. This publication has become more mature, seeming to gradually include more and more useful, well illustrated, easy-to-read contributions.

Measured Performance of Fireplaces and Fireplace Accessories, Dr. Jay Shelton, 1978, \$2 from

Dr. Jay Shelton
136 Hawthorne Road
Williamstown, MA 01267

Although it has long been commonly accepted that most fireplaces are relatively inefficient and may often be a heat loss factor over a 24-hour period, few statistics have existed to guide the homeowner. Glass doors, tubular grates, convective fireplaces, and their approximate relative efficiencies are discussed by Dr. Shelton. When considering the retrofit investment possibility, this is a useful, informative paper. No testing or discussion of durability or safety is attempted.



While a small crescent of the Sun remains in the sky, a curious eclipse phenomenon is often observed. Thin wavy lines of alternating light and dark can be seen moving and undulating in parallel on plain light-colored surfaces. These so-called shadow bands are the result of sunlight being distorted by irregularities in the Earth's atmosphere. An open floor or wall is a good place to look for them. A similar effect is seen when the Sun shines through ripples on the surface of the water in a swimming pool; the wavy lines moving on the bottom of the pool resemble the shadow bands of an eclipse.

from Eclipse



STEPPING STONES:

APPROPRIATE TECHNOLOGY AND BEYOND

Edited by Lane deMoll and Gigi Coe

208 pp., 1978, \$7.95

The philosophical strands of thought from which a new social vision is being woven . . . *Stepping Stones* brings together in one place many of the classic essays that have given rise to the appropriate technology movement. From E.F. Schumacher, Wendell Berry and Margaret Mead, to John Todd, David Morris and Amory Lovins, to RAIN's own Tom Bender and Lee Johnson, *Stepping Stones* will move you beyond the era of limitations into the era of changing possibilities. Five new pieces help bridge the gap between new technologies and new values, bringing greater clarity to our vision of a humanly scaled society. This companion to *Rainbook* is the perfect reader to bring you full circle to where we stand today: holding in our hands the makings of a new world.

STEPPING STONES POSTER

Diane Schatz

21"x24", 1978, \$3.00

Spinning images that excite the imagination, Diane Schatz's latest artwork for RAIN is truly new alchemy. Her elaborate bio-regional landscape which graces the cover of the New *Stepping Stones* reader is now available as a large poster for those of you to whom a picture is worth a thousand words—or more! This urban/rural scenario vividly details local economies and energies at work and play. Renewable and renewing! If you are trying to envision just how all our new ideas and new tools come together, this little bit of wizardry will help you get there.



ENVIRONMENTAL DESIGN PRIMER

Tom Bender

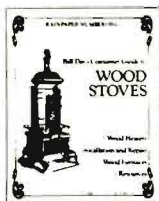
207 pp., 1973, \$5.95

If, in designing and building our surroundings, we want to restore our fundamental unity with our environment and the cosmos, we must push beyond just "functional" considerations. We need to re-establish a deeper sense of purpose. These meditations on ecological consciousness are offered to help us set our hearts and minds straight, before we put our hands to work. A penetrating collection of short thought-pieces, quotations, symbols and dreams.

RAINPAPER No. 1, CONSUMER GUIDE TO WOODSTOVES

Bill Day

16 pp., Revised Jan 1979, \$2.00



No matter how you split it, wood is re-emerging as an important factor in home heating. To help insure the wood energy transition is one committed to safety and efficiency, wood stove consumerist Bill Day has closely monitored the availability and reliability of these products. His newly-revised and expanded *Consumer Guide* is a compilation of his articles in RAIN, covering the selection, installation and repair of woodstoves, wood cookstoves and wood furnaces. Included are helpful notes on fireplace retrofits and chimney maintenance. Essential reading for those of you interested in this revitalized energy alternative.



RAININDEX

Lane deMoll and Linda Sawaya

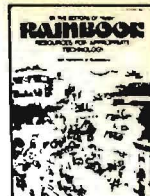
48 pp., 1979, \$4.00

A complete index to the first four volumes of RAIN (October 1974 through September 1978) and *Rainbook*, including a four-page, issue-by-issue listing of articles. Indispensable for information networkers, libraries and new friends of RAIN, the *Rainindex* is the perfect way to discover our back pages and the magic that lies therein. Yearly supplements will be available for each subsequent volume every October.

RAINBOOK: RESOURCES FOR APPROPRIATE TECHNOLOGY

Editors of RAIN

256 pp., 1977, \$7.95



This is the book that has turned so many heads around. Drawing together such diverse concerns as economics, energy, health, agriculture and communications into a larger picture, *Rainbook* opens up new doors for those of us seeking the ways and means to change our communities and our lives. Essentially the Best of RAIN Magazine through early 1977, *Rainbook* is as comprehensive a primer/resource book as you will ever find, with thousands of listings on groups, contacts, literature and further sources of information. If you have a question about appropriate technology, *Rainbook* probably has the answer—or it can tell you where to get it. Fully indexed and profusely illustrated. (Updated via monthly issues of RAIN.)



URBAN ECOTOPIA POSTER

Diane Schatz

22"x33", 1976, \$3.00

SUBURBAN ECOTOPIA POSTER

Diane Schatz

22"x30", 1976, \$3.00

The first exciting glimpses of an Ecotopian vision. . . . Chances are you've already seen Diane Schatz's *Urban Ecotopia Poster*—on the cover of *Rainbook*, reprinted in countless numbers of books and publications, or on a friend's wall. Its city street scene gives literal expression to the idea of urban self-reliance—where cottage industries, cooperative institutions and appropriate technologies combine to make the city a habitable and happy place to be. . . . If your concern is reinhabiting the suburbs, you should visit Diane's *Suburban Ecotopia*, where the same potential can be seen in gardens, solar greenhouses and windmills. Both of these line-drawn posters are rich in detail and perfect for coloring.

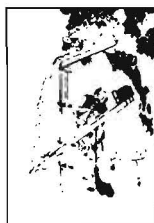
SHARING SMALLER PIES

Tom Bender

38 pp., 1975, \$2.00



A small classic that discusses how changing resource/energy realities are giving rise to new directions and changing possibilities—in human values and individual actions, in our institutions and politics. This is the kind of formative thinking that has helped to set the stage for the advent of appropriate technology.



LIVING LIGHTLY

ENERGY CONSERVATION IN HOUSING

Tom Bender

38 pp., 1973, \$2.00

Here is an early overview of designing and building energy efficiency and resource conservation into our shelters—from water and waste to heating, cooling and lighting. A good overview on why we should be living lightly—and just what that might mean.

EMERGING ENERGY POLICY PRINCIPLES

Tom Bender

9 pp., 1974, \$1.00

COSMIC ECONOMICS

Joel Schatz and Tom Bender

8 pp., 1974, \$1.00

Two significant papers to come out of Oregon's early energy research and planning efforts; here are sound principles for wending our way through the coming economic/energy transition. Simple outlines of effective economic mechanisms to guide that transition.

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Back issues of RAIN currently available: Vol. I, No. 7, 8, 9; Vol. II, all 9 issues; Vol. III, all 10 issues; Vol. IV, all 10 issues, \$1.00 each; Vol. V and on, \$1.50 each. For a list of what's inside each back issue of RAIN through Vol. IV, send us a SASE or see the center section of *Rainindex*.

RUSH

The Farallones Rural Center is offering a complete packet of information on everything going on at the center, their programs, the community, etc. To receive the packet, send a SASE with 53¢ postage to the Rural Center, 15290 Coleman Valley Rd., Occidental, CA 95465.

On April 8-11 there will be a conference at the Radisson Cadillac Hotel in Detroit, MI, entitled City Care Conference. This conference, being sponsored by the National Urban League and the Sierra Club, will have workshops emphasizing action on a neighborhood and community level. Contact: Vivien Li, City Care Conference, 500 E. 62nd St., New York, NY 10021. 212/644-6539.

A Northwest Regional Anti-Nuke Conference sponsored by Seattle Crabshell will be held on Saturday, April 28, at the University of Washington, Seattle. People from across the region are being urged to attend—donations will be used to cover costs. For further information contact: Greg Preston, 325 Harvard E., No. 100, Seattle, WA 98102, or phone 206/325-5287.

Utility Action Center
310 S.W. 4th, Room 900
Portland, OR 97204
503/222-9311

"Utility Rate Relief: Options for Low Income People"—a conference, is being scheduled and organized for April 21 in Portland by Oregon Legal Services and Multnomah County Legal Aid. Contact Beverly Stein with suggestions or contributions of time, money, or for more information. A good place for local coalitioning on this crucial issue!

The 4th annual Hands On Alternative Energy Conference of Heathcote Center and the School of Living will take place from April 27 to May 5 at Heathcote Center in Freeland, MD. This event will focus on passive solar design, theory and application, wood energy and conservation. Contact: Heathcote Center, 21300 Heathcote Rd., Freeland, MD 21053. 301/329-6041.

On April 28, the Northern Virginia Community College, Annandale Campus, will be sponsoring a Future Fair whose theme is "Future Options: Exploring Ways of Creating Your Future." The fair will take place from 9 a.m. to 6 p.m. and will feature exhibits on the future of Virginia, an electric car race, and many others. Contact: Dean A. Halajian, Northern Virginia Community College, Annandale Campus, 8333 Little River Turnpike, Annandale, VA 22003. 703/323-3239.

On April 6-8, women from around the country will be coming together to discuss the condition of rural life today and its impact on women's lives. The conference is being held at Chatfield College, St. Martin, OH (50 miles east of Cincinnati). Registration is \$20 and an additional \$30 is required for meals and lodging. Contact: "Women and the Land" Rural Resources, RR1, Box 11, Loveland, OH 45140. 513/683-9483.

There will be a series of two-day workshops on the design, sizing, calculation, construction and marketing of passive solar buildings. These conferences will be held in Chicago, IL, April 23-24, Philadelphia, PA, April 26-27, Atlanta, GA, May 24-25, and Kansas City, MO, Oct. 23-24. Contact: Passive Solar Associates, P.O. Box 6023, Santa Fe, NM 87501. 505/983-1506.

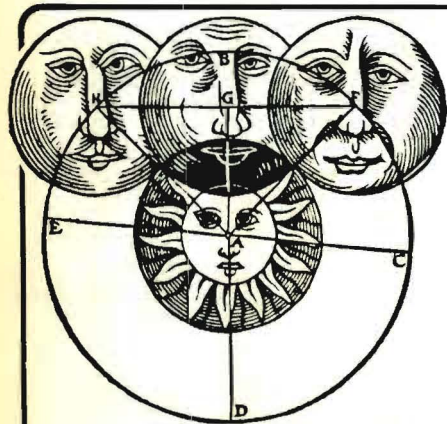
WIN Magazine is looking for two experienced people committed to social change to do bookkeeping, promotion, writing, etc. Low pay, long hours, and a chance to work with a collective. Interested? Send a letter (ASAP) about yourself to WIN Staff Search, 503 Atlantic Ave., Brooklyn, NY 11217.

Oregon Fair Share, a direct action, mass based organization helping people to gain control of their own lives, is looking for people interested in working full time as organizer interns. Training provided. Starting salary: \$500/month plus benefits. Contact: Lupe Guajardo, Oregon Fair Share, 519 S.W. 3rd, Suite 409, Portland, OR 97204, 503/223-2981.

The Center for Rural Affairs, a private non-profit research group which supports progressive change in the Midwest, is looking for a person to become managing editor of its investigative journal, the *New Land Review*. Responsibilities include copy editing, promotion, writing and general management of the publication. Send resume to Center for Rural Affairs, Box 405, Walthill, NE 68067, 402/846-5428.

The Montana Land Reliance, a land conservation organization working with farmers and ranchers in Montana to keep agricultural lands in open space and production, is looking for a field coordinator to organize its projects. An agricultural background and experience in land negotiations is desired. Contact: Christine Torgrimson, Montana Land Reliance, P.O. Box 355, Helena, MT 59601, 406/443-7027.

The Environmental Action Foundation, a non-profit environmental organization, is looking for two people—one to be a writer/editor on solid waste issues and the other to fill its director's position. Salary is \$12,000/yr. plus benefits. Send resume and writing samples to Environmental Action Foundation, 724 Dupont Circle Bldg., Washington, DC 20036.



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