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RAIN

APRIL 1978

VOLUME IV, NO. 6

ONE DOLLAR



SUBURBAN RENEWAL p. 6
DOE: DEPARTMENT OF SOLAR EVASION p. 12
SOLAR JOBS, NO JOBS p. 8, 20

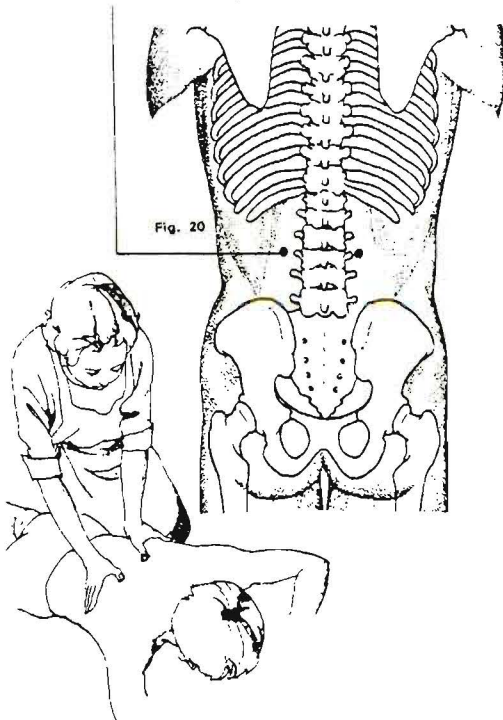
HEALTH

Tsubo: Vital Points for Oriental Therapy, Katsusuke Serizawa, 1976, from: Japan Publications Trading Co. 200 Clearbrook Road Elmsford, NY 10523

This book is the most usable English-language presentation of Oriental therapy I've seen, and an excellent tool for self-reliant, wholistic health care. Dr. Serizawa's text includes a basic discussion of body energy systems, the location of tsubo (acupoints) along energy meridians, and manual treatment techniques to use on tsubo, focusing on shiatsu (acupressure massage). The balance of the book is an extensive catalogue of fairly common sicknesses and body/mind ailments, along with exacting instructions for their home treatment with tsubo therapy. The entire book is exceptionally clear and extensively illustrated with both male and female anatomies. *Tsubo* includes a small section on children's ailments as well as a separate chart for each of the 14 energy meridians. Augmented by a preventative health regimen, this book can be an invaluable aid in transcending the pills and bills endemic to current American health care. (Thanks to Mikihasa Shima) —SA

Fig. 20 BL-23 (★ ★ Shen-vu)

This is one of several acupoints used to treat common earache.



RAIN

AGRICULTURE

Maine Farm Management and Technology Idea Papers, contact:

Donald Vail
Dept. of Economics
Bowdoin College
Brunswick, ME 04011

The small farm folks in Maine have a nice thing going between the academics and people doing it that could well be used elsewhere. This is a series of "idea papers" on the development of farmers' markets, negotiations between the food cooperatives and small farmers on direct marketing, and problems and prospects of small farmers from a friendly observer at the edge of the fray. He puts down observations and suggestions saying, "Well, we've tried this for a while; let's really see if it is working." —TB

insoluble dilemmas facing industrial culture, and the hopeful signs of the emerging alternative. Hazel's expansive vista is her own best example of a changing worldview, cutting across the old academic divisions and circumventing linear thinking. Nowhere is this as well-honed as in her persistent forays into the bankruptcy of conventional economics and the intellectual tunnel-vision that produces it. And what will replace this reigning sophistry? Hopefully an information system wherein every bit contains the program of the whole—where people incorporate into their individual consciousnesses an understanding of the whole system and the extended chains of causality flowing from their actions. Says Hazel: the hologram is the key metaphor of our time. —SA

Canada as a Conserver Society, 1977, \$2.70 from:

Science Council of Canada
150 Kent Street, 7th Floor
Ottawa, Ont. K1P 5P4 CANADA

The Science Council of Canada seems to be taking the Conserver Society more and more seriously. This report lays out the principle policy implications of a Conserver Society, immediate and longer range actions to take and specific applications to energy areas. Focus mostly is on continuing to do what we are doing, but more energy and material efficiently. Many provocative suggestions. —TB

APPROPRIATE TECHNOLOGY

Creating Alternative Futures: The End of Economics, by Hazel Henderson, 1978, \$4.95 from:

Berkley Windhover Books
Berkley Publishing Company
200 Madison Ave.
New York, NY 10016

Hazel Henderson has been an active voice on the cutting edge of the environmental movement for some time now, working to bring new social concerns to bear on the political process, pioneering specialized public interest organizations where none existed before, and expanding the horizons of high-level bureaucrats and decision-makers. *Creating Alternative Futures* is a collection of articles, speeches and letters documenting her insights into the unfolding changes in our values and political consciousness. From her vantage point we can envision both the

Small Scale Industries, Rural Development Network Bulletin No. 7, Sept. 1977, free while copies available from:

Overseas Liaison Committee
American Council on Education
11 Dupont Circle
Washington, DC 20036

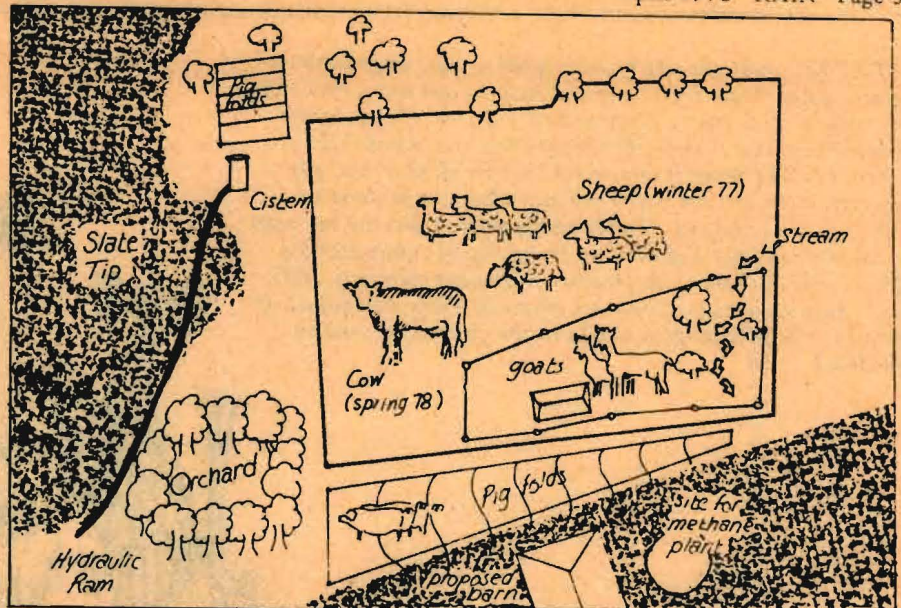
A good listing of international a.t. centers and bibliography focussed on third world applications of a.t. There is so much AID and CIA dollars and games in international "development" that we generally steer clear of it, but if you're interested in developments outside the U.S., this is a good listing. —TB

Quarry Association Newsletter, \$1/yr. from:

Centre for Alternative Technology
Machynlleth, Powys, Wales,
Great Britain

Autumn 1977 Newsletter contains updates on activities at the busy center in Wales. More than 55,000 visitors to this fairly remote center to date. Whew! Bob Todd and others have prepared an "Alternate Energy Strategy for the United Kingdom, based on zero energy growth, for the Windscale Enquiry. Energy Education Packets are available for 4.50 pounds. From their report, they seem to have one of the most active and varied demonstration centers yet. -TB

SOLAR



from Quarry Association Newsletter

Solar '78 Northwest, the 2nd annual Pacific Northwest solar energy conference, July 14-16, 1978, Portland Sheraton, \$30 per person for 3 days, to receive a conference mailer, write:

Mary Lawrence, coordinator
SOLAR '78 NORTHWEST
Conference
620 S.W. 5th, Rm. 610
Portland, OR 97204

Supported by grants from DOE, Oregon DOE and other state energy offices, in cooperation with the city of Portland and the Portland chapter, American Institute of Architects, this year's event again has a 1200-person attendance limit, so pre-register early if you are interested in regional solar-wind-biomass affairs. Invited technical paper abstracts are due by April 1, 1978, and completed papers are due July 1, 1978, for pre-conference printing of proceedings. It'll be even better than last year's! See you there. -LJ

Pacific Northwest Solar Energy Association (PNWSEA) balloting for seven board members went as follows:

John Reynolds (54 votes—elected to 2-year term ending July 1979), Doug Boleyn (47, 2 yr.), Lee Johnson (47, 2 yr.), Ken Smith (46, 2 yr.), Jill Goodnight (44, 1 yr. ending

July '78), Kirk Drumheller (38, 1 yr.) and Anton Eder (34, 1 yr.). Others receiving votes but not elected were: Leland Corey (26), Joe Garlitz (25), Skip Stoppiello (18), Greg Higgins (11), Howard Reichmuth (3), and 1 each for Steve Baker, Jeff Barnes, David Baylon, Bob Murray, Laird Perry, and Davis Straub. The first official PNWSEA board meeting is April 1, 1:30 p.m., at Doug Boleyn's solar. Agenda includes selection of officers, by-laws for recognition by ISES-AS and sub-chapter by-laws. *RAIN* and John Reynolds will continue to keep you informed about PNWSEA activities. -LJ

Solar Energy for Pacific Northwest Residential Heating, by DOE and EPA, Region X, free from:
Public Affairs Office
U.S. Department of Energy
915 Second Avenue,
Seattle, WA 98174

The study provides a more comprehensive engineering and economic analysis for a greater variety of sites in the Northwest than has been available up to now. Findings of the study can serve as a valuable tool for those who may wish to install solar equipment now, and for decision-makers who will be developing and implementing solar energy policy. It is also useful as a resource document on the technical, legal, environ-

mental and economic issues related to the development of solar energy for residential heating and cooling in Washington, Oregon and Idaho. -LJ

The 1978 SUN Catalog, \$2 from:
Solar Usage Now
Box 306
Bascom, OH 44809

An excellent at-glance view of the progress solar energy has made over the last few years—200 pages of available-by-mail solar hardware. Everything from waste-oil heaters to electric bicycles to eight kinds of d-i-y storm windows, complete solar water heater systems, kits, parts and even solar curriculum materials for schools. -TB

No Heat, No Rent: An Urban Solar and Energy Conservation Manual, free from:
Energy Task Force
156 Fifth Ave.
New York, NY 10010

A.T. and political consciousness came together at 519 E. 11th Street's "sweat equity" project on Manhattan's lower east side, where a cooperative, self-help endeavor rehabilitated an abandoned tenement building with the use of energy conservation techniques and solar hot water heating. *No Heat, No Rent* is a simplified technical manual generated by that project that is intended to help similar urban efforts make preliminary assessments as to the design and construction of such systems. With its clear, well-diagrammed discussions, *No Heat, No Rent* is a good primer in some of the basic techniques of urban energy self-reliance. The report's conclusions as to the cost-effectiveness of the solar unit were tentative pending more information, but later analyses have it that fuel costs at 519 have been cut dramatically. -SA

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

RAIN STAFF:	Tom Bender Lane deMoll	Joan Meitl Lee Johnson	Linda Sawaya Steven Ames
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Typesetting: Irish Setter Printing: Times Litho

NCAT has problems. We've been quiet as long as possible, to give it space to get on its feet and time to sort out its problems internally. That hasn't happened to date, and the problems caused to grantees and other organizations and individuals outside NCAT make it important that we all share our perspectives on what has happened and what can be done to improve the situation. The following perspectives are my own—based on my participation on the planning committee for NCAT and continuing discussion with board members, staff and other a.t. groups. There are certainly other viewpoints. If you have helpful insights to add to the discussion, send us feedback. —TB

NCAT where are you at?



It's been almost three years now since the planning committee for the National Center for Appropriate Technology first met—flown in at a cost of \$20,000 to a \$35/day hot springs resort in Montana, complete with astro-turf surrounding the artificially cooled, chlorinated hot springs swimming pool and golf course surrounded with condominium lots (care to take a tour?). No meals for less than \$6. We were brought there to talk about simple living. And to explore the inherent contradictions of the world's largest government proposing to develop technology for locally self-reliant living. A Center for Decentralized Technology. Small renewable energy systems for poor people encouraged through a Montana Energy and Magnetohydrodynamics Research and Development Institute (MERDI), whose board members represented such compatible bedfellows as Edward Teller, Anaconda Copper, Montana Power Company, banks and technical universities.

Those were bad omens and difficult conditions through which to try to assist local technologies, but a lot of good energy by a lot of good people has also gone into getting NCAT going. It seems time now to try to evaluate what has happened with NCAT in these three years, particularly as all reports indicate that things aren't going too well there now.

People and groups awarded grants have been experiencing interminable delays in getting their money. As of February, many of the regional newsletter grantees still hadn't seen contracts or money more than six months after they had been notified and had started work. One group given a grant to develop a solar-powered irrigation pump refused the grant

when it eventually arrived—they had gone ahead without the long-promised money and the project was already finished. The Trust for Public Land in San Francisco had to pay for a project with their own money when NCAT funds never came. *People and Energy* experienced similar problems with two NCAT grants.

Paperwork and accounting demands seem excessive—whether caused by CSA, NCAT or a single accounting clerk. Ecotope Group, with a \$300,000 grant from the Department of Energy and an \$8,000 grant from NCAT found the paperwork required by NCAT to be several times greater than their larger grant. The NCAT staff itself is snowed under evaluating grant proposals and doing paperwork on approved grants—yet other similar government grant programs have avoided such problems.

We have personally had extremely hard times getting information from NCAT—repeated requests failed to obtain even a list of NCAT extension workers and regional newsletters. The list we printed in *RAIN* we had to get from Craig Decker, a Washington, D.C. a.t. person who came by the Rainhouse after sitting in on an NCAT board meeting. There is always start-up confusion in any organization, and it's excusable if our name won't stick onto their computer mailing list. But everyone we talk to seems to have similar problems. People continually write to us expressing frustration at not getting any response to letters, phone calls, grant proposals, etc.

There doesn't seem to be any single cause for all the problems. The Community Services Administration (formerly the

Office of Equal Opportunity) is responsible for channeling NCAT's \$3 million to Butte, and they make things difficult by stringing the funding along month by month without approving the current year's budget. Ironically, the concurrent development of the successful DOE Small Grants Program, which does do part of what NCAT was set up to do, shows that a workable simple operation is possible.

A board of directors that won't give the staff space or authority to do its work is a major problem. The most trivial day-to-day decisions apparently require board approval, and board o.k. on all but the smallest grants is necessary. A great deal of the staff's time is taken up preparing reports for the board rather than doing what they're supposed to do. A similar power/control problem seems to continue on up into CSA. The newsletter grants apparently vanished for several months on the desk of Dick Saul, the CSA staff person in charge of the NCAT project—lost, sat on or forgotten while awaiting his approval.

The size and rapid growth is probably another cause of difficulties. 50(?) people are now on NCAT's payroll, which ironically seems both too large and too small for its task. It appears too small because its job isn't getting done well, yet it's too large for the collective decision-making that many of the staff people have invested time and energy to set up. It is also too large to be managed with just a good vision of what to do, and finding a director with both the right vision and management skills is a pretty hopeless task. The planning committee recommended a staff of five to seven people. Six people run DOE's comparably scaled small grants pilot program, and fourteen people are planned for DOE's whole Office of Small Scale Technology, which will remarkably parallel NCAT's activities. We would guess that fifteen people could operate NCAT's grant-making and information dissemination functions—based on staff needs for similar activities elsewhere.

Staff competency appears to be another difficulty. Entangling bureaucratic regulations, Butte's remoteness, and hassles by the board exist, but don't account for people on the staff who are too frequently unaware of the work that has been done in their field or unable to check any of the basic references in the field that would bring them at least halfway up to date. NCAT contracted with a person to explore the potential of homemade windmills with apparently no realization of earlier efforts by Windworks, Helion, New Alchemy and many others and why they had been abandoned. The two technical publications we've seen prepared by NCAT (on heating with wood and furnace efficiency) are generally worthless for this very reason.

Both NCAT staff members and board members point the finger at inadequate management by the director as a major problem. We know too little of the day-to-day operations of the organization to evaluate that situation, but we do know that it is easy to make a scapegoat of someone caught in the middle of an impossible situation. There is probably a mismatch between the director's skills and the kind of organization that has emerged after these three years, but that can't be the whole problem.

Another dimension of NCAT's problems is its relation with CSA and the Community Action network. Although originally proposed as an independent institute, restrictions on its initial funding from CSA forced it to totally serve the CAP network. The board today is dominated by the CSA world. Local CAP agencies get priority on grants, and other groups must get a "sign-off" from the local CAP agency on their proposals—all guaranteed to scare away more viable independent proposals. Those biases in part explain the failure by NCAT to

attract any other funding which could give it independence and help it gain a more equitable representation of the various constituencies involved in a.t. around the nation. What has resulted is what I feared while on the planning committee. It's easy to see NCAT as merely a covert CSA structure set up to channel other government funds into CSA programs. That is a far cry from a real "national center."

This is not necessarily to criticize NCAT for trying to get appropriate technologies into anti-poverty programs. As we see it, the problem is that they are not doing this well because of their tendency to hire/contract with less than the best expertise available and the roadblocks they have set up against attracting that expertise. The criticism also stems from the fact that they bill themselves as providing networking for the a.t. world and local community development—a function that we have not seen well carried out to date.

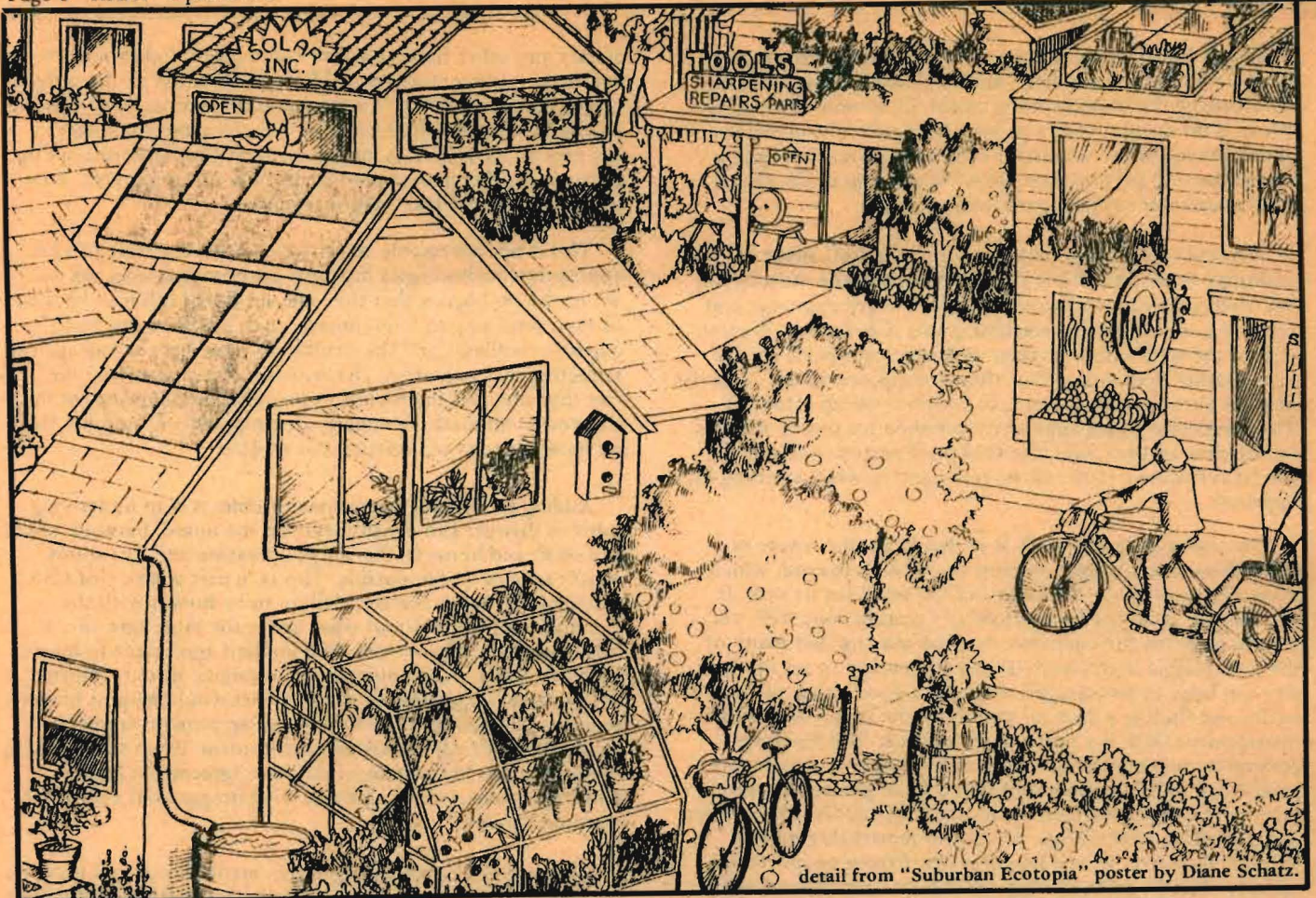
Adding to all these operational problems is an underlying spirit of distrust and divisiveness—on the board, between board and staff, and between the whole operation and its various constituencies on the outside. This is in part a legacy of CSA and MERDI representatives' failure to be honest with the planning committee about what under-the-table agreements they had made. There existed an implicit agreement to locate NCAT in Butte and to pump a lot of money into its mined-out economy regardless of whether that would help or hinder an effective operation. And there was agreement to put NCAT under MERDI's administration and control. When the planning committee was brought together these agreements and assumptions were not revealed and were dragged out only after repeated denials.

The mistake that those organizers made was to pull together a strong and articulate planning committee that was not willing to blithely go along with these "business as usual" policies of filling institutional coffers with our tax money instead of accomplishing the real work needing to be done. Many of the group, originally operating under the assurance that the situation was wide open, fought long and hard to make it a true a.t. center that would begin to deal with the problems of getting new technologies to poor people. MERDI still ended up with a huge hunk of the money for "technical support"—money that was originally to go as small grants to local projects. What public good has resulted from all that money? The distrust and acrimony created by this situation still underlies relationships today.

None of these problems is insoluble. NCAT has to decide what it is and wants to be, to be honest with the rest of the world and communicate with it, and focus on doing *well* whatever it decides to do. It ain't easy, but it is possible.

It seems that the greatest loss overall has been the incredible amount of good energy that people all over the country have put into getting NCAT going and making it a success—and the effort of some of the involved governmental bureaucrats to ignore rather than use that energy, to set up an organization to serve their own ends rather than the clearly expressed needs and opportunities that have been laid out for them. We need to work together, and almost everyone from CAP directors to a.t. inventors to state agencies to Montana dirt farmers have reached out to try. But it won't work when a few people are playing power politics and preventing us all from coming together on an equal and cooperative footing. CSA and the board need to let go of NCAT. It needs to be simplified so that people can make contact and cooperate with it, and it with them without people's worst fears being realized, as they have been to date. Or it won't work.

—Tom Bender



detail from "Suburban Ecotopia" poster by Diane Schatz.

The following is a list of posters depicting alternative visions of man and community. If we missed any good ones, let me know. —JM

Farallones Poster, 75¢ from:
Integral Urban House
1516 Fifth St.
Berkeley, CA 94710

A small poster which graphically illustrates relationships between energy, food, man and waste.

Probe Pin-up Poster, \$2 from:
PROBE
43 Queen's Park, Crescent East
Toronto M5S 2C3 CANADA

A lot of very readable information telling who, why and how-to on everything from recycling to road salt in Canada. Contains only Canadian resources, but it is an excellent model.

Whole Life Systems Household, \$1 cash from:
OAT
State of California
1530 10th St.
Sacramento, CA 95814

Done by Gordon Ashby, California OAT. A lovely line drawing of an integrated system visualizing the effects of sun, wind, water and soil.

The Ark, \$3 from:
The New Alchemy Institute
P.O. Box 432
Woods Hole, MA 02543

This poster is a photograph of the Ark, a food-raising bioshelter fusing solar architecture, windmill technology, fish culture and agricultural systems. More detailed line drawings are shown on back.

Urban Ecotopia, by Diane Schatz, \$3 from:
RAIN
2270 N.W. Irving
Portland, OR 97210

A reprint of the "Visions of Ecotopia" line drawing that appeared in the April '76 poster issue. Great for coloring.

Suburban Ecotopia, by Diane Schatz, \$3 from:
RAIN
2270 N.W. Irving
Portland, OR 97210

Companion to our first ecotopia poster. This was also done by Diane Schatz and depicts a section of suburbia that has been reconverted to an energy-efficient community.

AERO Posters, \$2.50 each from:
AERO
435 Stapleton Bldg.
Billings, MT 59101

Loren Schultz is creating five posters to raise funds for AERO. They are available in four colors: white, cream sandstone and gold. The first is a rural scene complete with windmill, solar greenhouse and helping hands.

Compendium Community Action Poster, \$1.50 from:
Compendium Bookshop 240
Camden High Street
London, England NW 1

A community scene which is a good reflection of what is happening in our cities of the world. Also available from Compendium is the Cliff Harper Series of illustrations for the book "Radical Technology" reproduced as a series of posters: autonomous terrace, collectivized gardens, household workshop, community workshop, community media centre, autonomous housing estate, and patriarchal street scene. The series is available for \$2.

VIEWS DOWN THE ROAD

Suburban Renewal

As the fuels that spawned our far-flung, energy profligate suburbia get more expensive, fears of the cost of replacing that multi-billion dollar investment begin to worm their way into our consciousness.

We sat down a couple of years ago to brainstorm what a conversion of suburbs to a saner, more conserving way of life would involve. The news was good. It's easier to get simpler than to get wasteful! The space-grabbing demands of the automobile required whole new urban and regional infrastructures. Adapting to its demise requires only ingenuity and self-interest, which we've never been short on. We got our friend Diane Schatz to draw up some of the possibilities:

- * We wring our hands too much over prime agricultural land lost to suburbia. Fritz Schumacher reminded us some time ago that intensive gardening and Tender Loving Care (TLC) in suburban gardens has been shown in England actually to increase food output per acre. The Farallones Integral Urban House in Berkeley and other projects across the country have also shown a very substantial part of a household's food needs can be met with very little space or labor. Our main concern should be to avoid poisoning the ground so heavily with "lawn care" products as to make future food production impossible. Fruit and nut-bearing trees can provide both food and natural air-conditioning in the summer.
- * Water, power, streets, sewers, phone and other utilities are already in place in suburbia. Reduction of use through conservation measures means that many more families can be served by the same utility network. Some possibilities:
 - Conversion of large suburban homes to duplexes or apartments. Many have multiple baths, would convert easily and would provide a better retirement investment than pensions.
 - Street houses and backyard apartments. Closure of unnecessary streets can provide opportunity to build additional housing or neighborhood gardens in their place.
- * This doubling of the use of existing housing, utility networks and roads makes possible increasing the density of desired areas to levels where public transit becomes more economical. It also makes neighborhood shopping more feasible by increasing the number of people within walking or bicycling distance of a shop.
- * Home businesses are already becoming more common, in spite of prohibitive zoning regulations. Conversion of garages to businesses, home workshops to furniture making and repair, and spare bedrooms to home offices is likely to occur more and more frequently as people discover working patterns that eliminate commuting, that can be started themselves with minimum capital, and that provide rewarding and secure work. Renting guest rooms provides a low-cost alternative to freeway motels.
- * Neighborhood or community-sized renewable energy systems can augment individual conservation and solar systems at less cost than conventional power plants. Solar collectors on the roof of shared parking, laundry, or shop space, connected to large heat storage tanks serving a whole block, are already coming off the drawing boards, and community wind-electric systems are now operational.

It looks like what already exists in suburbia can be used much more intensely, creatively and effectively. What needs to change is our habits and our patterns—the physical environment can be adapted quite readily.

—Tom Bender

New Directions in State and Local Tax Reform, 1977, price not listed, available from:

Conference on State and Local Public Policy
1901 Q Street, N.W.
Washington, DC 20009

Tax reform always seems to be replacing one set of loopholes with another and more taxes for fewer. So it was a pleasant relief to see this survey of the vast number of good things happening. Some samples:

- * California's 1976 Forest Taxation Reform Act that put forestry land in a permanent zone and converted timber from a property tax to a yield tax, removing the incentive for premature harvest of trees.
- * Systems Development Charges assessed by some Oregon cities on development of new properties to pay for not only the streets, sewers and water lines directly serving the properties, but the cost of increased capacity in the rest of the systems to provide water, treat sewage and handle increased traffic. Good move for further internalizing of high development costs that existing taxpayers are usually stuck with.
- * Since 1955, the New York Telephone Co. has mailed refund checks for wrong numbers reached on pay phones instead of returning the money to the caller in the phone booth. Few of the 10¢ checks are ever cashed. The Phone Company knows it, and pockets the money. N.Y. Attorney General Lewis Lefkowitz has forced the company to turn over to the state \$246,000, representing uncashed refund checks, and to pay \$373,000 more by 1980 if the problem persists.
- * Banks in many states have quietly pocketed millions of dollars abandoned by depositors who have died or moved leaving checking accounts or safe deposit boxes in the banks. 25 states now require such money to revert to public revenue if no heir can be found. Peanuts? \$7 million per year in New York alone, \$900,000 per year in Maryland and probably \$1 million in D.C.
- * Mississippi and Colorado collect tax or license fees on chain stores based on number of stores owned in the entire chain. Mississippi charges up to \$300 in extra taxes *per store* in Mississippi for large chains. There are ways to recoup some of the money extracted from a state by the chain stores!
- * The rationale and effects of including intangible personal property (stocks, bonds and savings) in general property taxes are laid out. Such changes would lower property taxes an average of 13 percent and would lessen tax avoidance by the wealthy.

Almost 400 pages of encouraging developments from almost every nook and cranny of the country. —TB



CAN THE SUN BE ALL THINGS TO ALL CALIFORNIANS?

Jobs from the Sun: Employment Development in the California Solar Industry, 120 pp., Feb. 1978, \$5.00 from:

California Public Policy Center
(Attn: Solar Jobs)
304 S. Broadway, #224
Los Angeles, CA 90013

SolarCal: A Proposal for a Public Solar Energy Authority, 5 pp. reprint, Congressional Record, Nov. 15, 1977, free from:

California Public Policy Center
(address same as above)

Can the sun be all things to all people, providing renewable energy, jobs and economic development in a decentralized, socially equitable and environmentally benign fashion? In California, this hefty question is quickly losing its rhetorical quality and becoming a matter of real political significance, as the state edges closer to the actual possibility of "solarizing" itself by 1990. At stake is the opportunity to begin easing the California economy away from the use of inflationary, job-eliminating, non-renewable energy sources for space and water heating, inducing the first step towards a new era of more appropriate development.

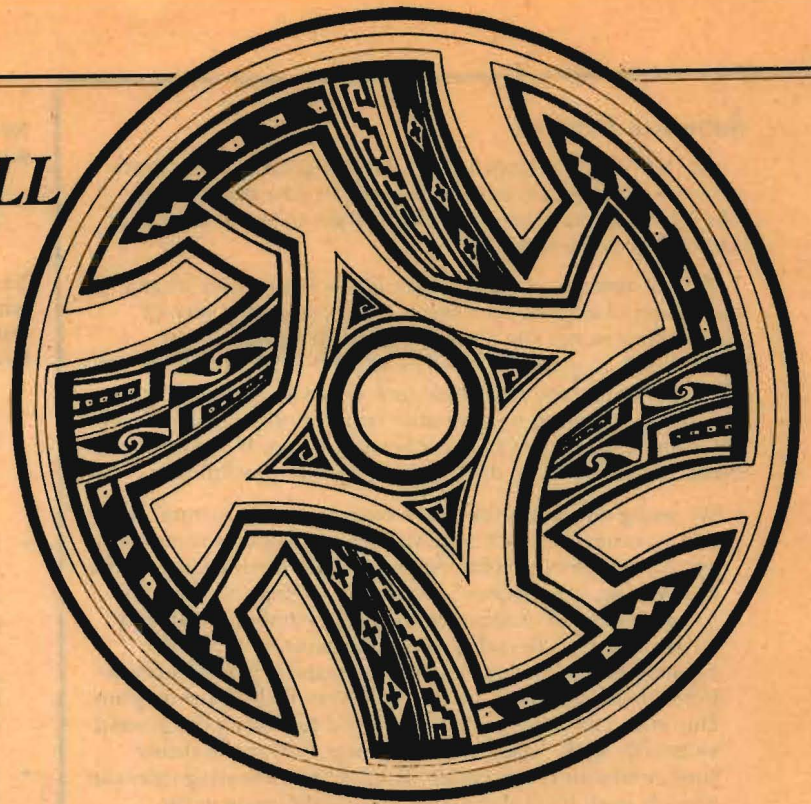
This issue has been brought to a head by the SolarCal proposal, initiated by the Campaign for Economic Democracy and developed in the past year by the California Public Policy Center. SolarCal, if passed by the state's legislature, would establish a public corporation with \$500 million in funds to provide the economic framework for the development of a statewide solar industry, lending front monies to legitimate solar entrepreneurs, and to householders wishing to convert to solar heating.¹

If SolarCal were to pass with all its provisions intact, it could forge a bond between the public and private sectors in which large capital pools aggregated at the state level flow out to the localities for solar conversion, with the potential for a broad-based, decentralized economic impact providing jobs and renewable energy.

In addition, it is the specifics of the proposal that would make this new state authority an integrative, reform-oriented public body. These include:

- the representation of diverse interest groups on its board, excluding the employees of energy monopolies and utilities.
- the direction of its home loans to low and middle class consumers
- a preference for California-based solar firms meeting strict criteria concerning size, unionization, affirmative action, hiring the unemployed and independence from large corporations.

While it is certain that California's large utilities and suppliers of natural gas and their corporate allies are not pleased with this prospect, a balance of the state's diverse groups and interests could find the logic behind SolarCal compelling enough to abandon more shady utility energy bargains and



make haste for the sunny side of the street.

More substantive evidence in favor of the SolarCal proposal was recently provided by the California Public Policy Center with the release of its new study *Jobs from the Sun*, a detailed analysis attempting to assess the real potential for the development of solar energy in the state between now and 1990, and specifically to calculate the number of jobs that would be generated in meeting this potential, as well as the overall impact on the California economy.

Already, *JFTS* reports, the conventional cost-effectiveness of solar space and water heating is competitive with electric resistance heating, as well as with new supplies of natural gas. With escalating costs locked into such non-renewable sources, and the declining costs of solar likely to continue, this advantage will become pronounced in the next decade. But beyond conventional comparisons, there are the additional socio-economic advantages of the solar option, as measurable in its non-inflationary economic stimulation, environmental enhancement and the creation of new jobs.

JFTS found that a solar industry meeting feasible California space and water heating needs² between 1981 and 1990 could generate over 376,000 jobs per year for the length of the decade, with 36 percent directly related to solar employment and 64 percent to indirect/induced employment. Of the direct solar jobs, 21 percent would be in manufacturing and 57 percent in installation, which are two areas of greatest structural weakness in the state's economy.³ Compared to highly explosive liquified natural gas (LNG), one of the few real, albeit dangerous, options for space and water heating in California, a new solar industry is expected to produce 62 times as many jobs for the equivalent amount of heat energy due to its labor-intensity.⁴ In addition, these jobs would require lower skills levels and would be dispersed across the state. The solar option would also displace between 26 and 35 percent of the natural gas currently used in the state. In toto, such a development would boost California's personal income by \$4.2 billion and its Gross State Product by \$5.1 billion per annum, while saving \$1.9 billion in taxes and avoiding \$1.02 billion in exported capital per annum.

Jobs from the Sun is a well-executed piece of advocacy research treating an unquestionably desirable alternative as end-goal, and then subjecting it to a rigorous statistical

analysis in order to flush out the numbers needed to convince skeptical labor groups, penny-wise consumers and politicians. The methodologies it employs are deliberately conservative. The results give new credence to the answers that have long made intuitive good sense.

Clearly, job-creation is only one kind of measure of sensible productivity, others being net energy gain, perceived ecological integrity, the communal self-sufficiency of small units, and so on. (See page 20) But at this point, the issue of jobs is *the* argument in the politics of energy, and since the interests of more jobs and safe, renewable energy are so eminently compatible, *Jobs from the Sun* serves us well, indeed.

On the other hand, there is implicit in *JFTS* a contradiction between the prospect of a new, high-growth industry for California (mentioned several times) and the socially optimum goal of a steady-state economy (never mentioned). How an economic boom based on the massive expansion of appropriate technologies and a conserver society ultimately jive with each other is left unexplored. Instead, *JFTS* can't help but observe that a new solar industry would even provide the opportunity for California to export its newly developed technologies elsewhere—in exchange for someone else's capital. This may be a bit of a ploy, but it is distinctly uncomfortable. What we face is not simply the challenge of getting over another economic hump and then going back to business as usual. Our economies are going through a much more complex period of transition in which new energy is only one factor in a mélange of resource scarcities and new social paradigms. Profound changes in our values and politics are in order, and boom-psychology is not among them. It can only let us down.

It should also be noted that *JFTS* does not analyze the job-producing, energy-conserving possibilities of other appropriate energy technologies such as wind generation, photovoltaics, biomass conversion and passive solar design. This is understandable due to its focus on space and water heating and the purpose of the SolarCal proposal itself. But it can also leave the solutions to the coming period of energy transition looking slightly one-dimensional. In reality, a multiplicity of energy demands and resources will require a multiplicity of responses in a multiplicity of situations. This is the ecologic and beauty of the decentralized approach. Pegging too much hope on one potential solution as a cure-all would be a very rigid response to a complicated challenge demanding great flexibility.

As for SolarCal, its establishment of a new state authority is good enough cause for worry, like other governmental and quasi-governmental efforts that try to respond progressively to problems. (See page 4). All of SolarCal's potential constituencies have been burned by big bureaucracies, whether they are middle-class homeowners, the unemployed or small businesses. Beyond this is the genuine and familiar fear that building an institutional framework within which to promote small-scale technologies may preclude the very goals of increasing community self-reliance and the decentralization of political power we hold so dearly. A major economic transition, however, is a tough order to fill, and we need to search out the momentum that gets us going down the right path.

The *Jobs from the Sun*/SolarCal endeavor is a well-coordinated effort that has honed in on an impressive first-plank strategy for encouraging the broader social and economic

change that we know must come. It is also a highly integrative effort in that it openly seeks to span some very substantial ideological gaps, such as:

- small-scale production v. unionized labor
- urban unemployed left v. small-town/individualist right
- a large new state authority with money v. decentralized economic development

The issue of jobs is already cutting through some of these old divisions; others are still relatively new territory which are just being explored. Yet, however difficult, it is high time that such differences are squarely addressed, because it is apparent that for too long a host of self-defeating attitudes, as well as the divide and conquer tactics pandered by corporate monopolies, have kept all Americans from seeing how much they really have in common with each other. Nothing has displayed our mutual best interests so clearly as the whole issue of energy development in the '70s and '80s. There is greater potential now for linking up together over matters of common concern than in a long, long time.

—Steven Ames



SOLARCAL UPDATE

As *RAIN* goes to press, we have learned of new changes in the status of the SolarCal proposal, now before the California legislature. Because of opposition in the legislature to the prospect of forming a new state agency and coming up with additional funding, SolarCal has been divided into 12 separate bills stressing most of the important concepts, including loans to consumers and small businesses and solar planning. This certainly raises the possibility that the integrative nature of the original proposal is endangered, especially if important components of the legislative package are shafted.

The Campaign for Economic Democracy (CED), main political promoter of SolarCal, will continue to work for the passage of the bills, as well as engaging in two other important strategies: 1) pushing the state's Public Utilities Commission (PUC) to keep the utilities out of the new solar industry; and 2) taking the impressive new statistics on solar jobs to the public-at-large.

Interestingly, because taxes and bonds are not now a feasible source of capital for seeding the solar option, the alternative appears to be working through the PUC to authorize long-term loans provided by the utilities themselves for a statewide conversion. There are precedents for such a development. In sum, as CED sees it, the real choice in energy development is between big and small, and if the only way small solar businesses can survive is in a new partnership with government, through which they tap into private capital pools, then so be it. —SA

1 California has already taken the national lead in the number of solar energy firms, and in December 1977 initiated the nation's first tax credit for purchasers of solar systems.

2 Calculated at the number of solar jobs that would be generated by a solar program aimed at retrofitting 75 percent of California's residential and 50 percent of its commercial sectors, supplying process heat for industrial uses that require temperatures up to 212°, as well as providing all new construction between 1981 and 1970 with solar. These can be divided into "immediate" and "near

term" priority groups.

3 These new jobs would not be substituted for jobs that would otherwise exist.

4 Natural gas provided 90 percent of space and water heating in the residential sector in California in 1975, and 77 percent in the commercial sector. This reliance, if continued, must be increasingly supplied from non-California, capital-exporting sources. LNG is the only source even providing enough new jobs upon which to base this comparison.

GOOD THINGS

House of Musical Traditions—Catalog
305 S. Washington Street
Berkeley Springs, W. VA 25411

Are you into nose flutes or Bolivian Cherangos? Mandolins or Chinese Temple Gongs? These folks have available by mail an amazing range of ethnic and esoteric instruments and books on different musical traditions. Eclecticism is a good antidote to cultural imperialism and predecessor to new traditions. —TB

Welcome to the Magic Theater, Dick McLeester, 1976, 124 pp., \$3 from:
Food for Thought Publications
P.O. Box 331
Amherst, MA 01002

"A Handbook for Exploring Dreams." Here's a wonderful example of someone who had an interest, explored the resources, learned a lot, and had the good will and forethought to bring the information together in beautiful access format. There are books listed here for psychological interpretations of dreams, Native American and other cultures' use of dreaming, dream myths and fairy tales, and dreams as part of consciousness-raising and political action. It is very thorough and comfortably personal. Sweet dreams. —LdeM



A catalog is being pulled together of manufacturers and individuals active in cut-cost construction in the Pacific Northwest—particularly those projects whose products reflect resource conservation and appropriate technology. The survey and eventual listing is being funded by a CETA grant lasting through September 1978. Anyone interested in being included or wanting further information should contact Mary Smith, Portland Community College/Rock Creek campus, 17705 N.W. Springville Rd., Portland, OR 97229, phone 645-4461 (ext. 235).



PLATE 1B - MIDDLE EASTERN DUMBOK

Eureka Express
P.O. Box 145
Ft. Wayne, IN 46801

Our good friend Robin Leenhouts, from the New Western Energy Show, wrote to say that she had forgotten to mention Greg Jacobs and the Eureka Express as being very important contributors to the design of the NWES set-up and the building of their trailer. (See the Feb/March RAIN.) It also turns out that Greg's project is worthy of mention on its own account. He's putting together six railroad cars as a "traveling learning resource center offering to children, teachers and the general public opportunities to explore and learn about craft, design and problem-solving." What a wonderful idea. They're having some trouble with their funding but hopefully they'll have their workshop on the rails before too long. Check them out. —LdeM

BUSINESS

Consultancy for Small Businesses, Malcolm Harper, 1976, published by Intermediate Technology Development Publications (England) and available in the U.S. and Canada for \$15 from:
International Scholarly Book Service
P.O. Box 555
Forest Grove, OR 97116

Often the hardest things to see clearly are those we're most closely associated with, and the advice of a trusted friend is an invaluable gift to a small business that can't afford the luxury of high

paid consultants to review its performance. The Briarpatch Network in the San Francisco Bay Area has shown us the value of having people visit the small businesses in its network, giving feedback and advice. This manual was put together by ITGD to summarize some five years of experiments in Kenya, Brazil, Sri Lanka and Indonesia to develop useful economic on-the-spot consulting to small businesses in developing countries. It covers the concepts of small business operation and analysis and trouble shooting of problems, as well as providing a detailed training course for consultants to assist small business. Valuable both for self-analysis and setting up advisory services. —TB

Cost Accounting Concepts for Nonfinancial Executives, Joseph Simini, 1976, \$12.95 from:
AMACOM
135 W. 50th Street
New York, NY 10020

A good primer for understanding business accounting. If you're not into business, it lets you know how business people think. If you're thinking about or are starting a business, lets you know what to worry about or not worry about. If you're into corporate accountability, gives you a beginning sense of the shell games that go on with different depreciation schedules, writeoffs, and ways of calculating profit and loss. —TB

POLITICS

Strengthening Citizen Access, 1977, \$325 for private firms, \$10 for non-profit educational institutions, \$5 for public interest groups from:
Exploratory Project for Economic Alternatives
2000 P Street N.W.
Washington, DC 20036

A fine overview of the need for and present status of citizen participation in government. It discusses kinds of agencies such as Ombudspersons, Consumer Agencies, Attorneys General and Public Interest Law firms that are institutional attempts to "represent" public interest in government decisions. It also surveys the means for shifting the cost of citizen access, procedural reforms to encourage access such as class action

suits, determining a person's standing to sue, erosion of state and federal immunity to being sued, freedom of information acts, etc. A good background to figure out how to get your voice heard. —TB

For the People, Joanne Manning Anderson, 1977, \$5.95 from:
Addison-Wesley
Reading, MA 01867

I don't really like the idea of consumerism. It seems that in this resource-scarce world people should learn to consume less, not push Detroit (or whoever) to make the damn things better. But of course, we must learn to *use* things well. This book is a consumer action handbook done by Ralph Nader's Public Citizen. It's a good primer to get into organizing health care products (drugs, doctors and nursing homes), utilities, the food system and the media. Another step in teaching each other to take action against the negative forces that can control our lives. —LdeM

Military Maneuvers (\$5)
Military Maneuvers/Update (\$1)
Weapons for the World/Update 1977 (\$3)
The Economic Impact of Military Spending (price not listed)
from:
Council on Economic Priorities
84 Fifth Avenue
New York, NY 10011

U.S. Government military expenditures now make up about 5-1/2 percent of our total GNP. Sales of our most sophisticated military hardware to other countries by our defense contractors (often with little congressional knowledge or control) now run \$10-12 billion per year. We're told that the foreign arms sales are necessary to pay for our imported petroleum, and that reduction in DOD expenditures would adversely affect employment and income as well as national security. This series of studies by CEP suggests another interpretation: *Military Maneuvers* analyzes interchange of personnel between the DOD and its contractors; *MM/Update* reviews congressional response to that "potential" conflict of interest; *Weapons for the World/Update* gives a company-by-company overview of foreign military sales; and *The Economic Impact of Military Spending* adds another voice to the list of studies showing that almost any alternative use of our money would provide more jobs and income. War production may be "good business"—but not good policy for our economy, lives, national security or peace of mind. —TB

DOWN THE TUBE

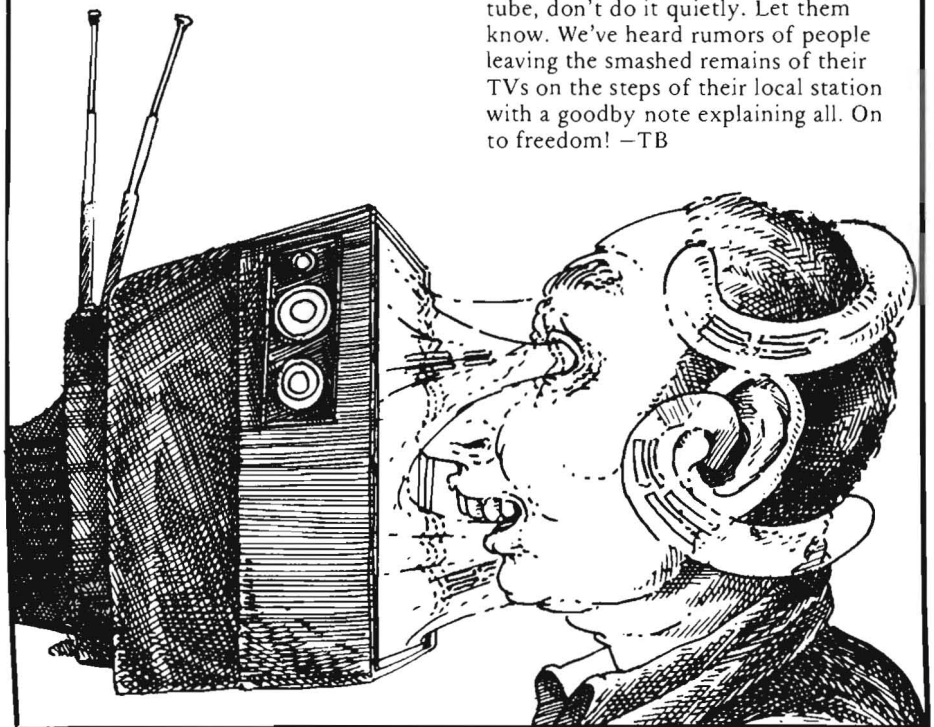
Four Arguments for the Elimination of Television, Jerry Mander, 1978, \$4.95 from:
William Morrow and Company
105 Madison Ave.
New York, NY 10016

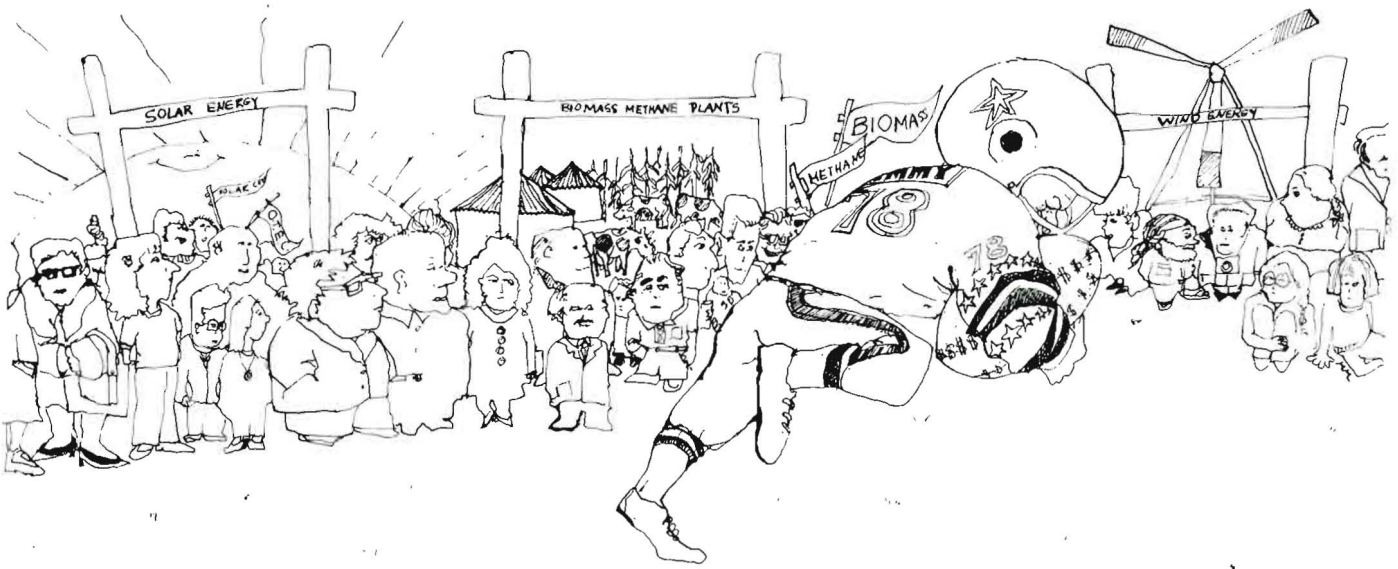
News from Nowhere, Edward Jay Epstein, 1973, \$2.95 from:
Random House
201 E. 50th St.
New York, NY 10022

When people ask me now about what they can do to solve the ills of the world I tell them: "Get rid of your television set." They are usually a bit shook up at the thought of actually doing something, but if you're serious about any changes, this is a good place to start. It will give you five new hours a day to figure out and do all sorts of other things. It will make you healthier and less anxious. It will give you the time and attention to focus on yourself and the people and things around you with enough intensity to learn the next steps to take. It will free you from a barrage of advertisement and by cutting the size of the audience that networks sell to advertisers, it will reduce the funding of TV. And it will cut out a lot of confusion.

The good things on television aren't worth it. If they are well-done, it means they're neither controversial or significant enough to be important, as the Fairness Doctrine requires presentation of all sides of controversial issues—guaranteed to result in a muddled program. Advertising pressures also prevent coverage of significant issues, as does pressure from local stations that might cancel network shows and lower the audience that can be sold to advertisers. Even 24 hours a day of "good things" means more diversion from the really important things TV can't or won't cover.

Both these books give you plenty of justification for giving your tube the axe. Mander's book, although somewhat melodramatically written, lays out the essential effects of TV on human health, its tendency to warp our sense of reality, and its furthering of centralization and control. *News from Nowhere* lays out more clearly and in more detail the whys and wherefores by which TV news is forced into a bizarre caricature of reality. When you get rid of your tube, don't do it quietly. Let them know. We've heard rumors of people leaving the smashed remains of their TVs on the steps of their local station with a goodbye note explaining all. On to freedom! —TB





SIDE-STEPPING

It's bad enough to be duped. It's worse to be *constantly* considered stupid enough not to notice when you've been had!

You see, a number of us a.t. folks from the provinces were brought into D.C. in late January to hear about DOE's "role in support of a.t.," as I mentioned in the Feb/Mar '78 RAIN. There was a rapid question-and-answer session in which Jerry Plunkett of MERDI and Harriet Barlow of ILSR were able to illuminate for the 300-person audience that Maxine Savitz (DOE-Conservation) didn't understand the relation between a.t. and lifestyle change to "simple living." But even more vital to the transition toward a solar America was the revelation, via an internal DOE memorandum, that the energy agency was actually planning to cut the nation's solar energy budget in fiscal year 1979!

Score: Nuclear 1,750; Solar 40

As you can see on the charts we've reprinted from that document, budget authority for solar energy for FY '79 is projected to be \$373 million; the budget authority for FY '78 is \$390 million. Simultaneously, the nuclear research budget will remain approximately 4-1/2 times as high and the fossil research budget will increase from \$846 million to \$924 million.

The document also reveals that DOE has over 1,700 employees involved in nuclear development work (1,300 field personnel and 450 at D.C. headquarters) while less than 40 are working in wind, solar thermal and photovoltaic research. Ironically, the report reveals that while solar technologies have less than 1/40 the staffing found in the nuclear division, DOE nonetheless projects solar's contribution to the nation's energy supply to be 10,000 times greater than it presently is while the nuclear contribution will only increase by a factor of six.

FY '79	Budget (\$ in millions)	DOE Em- ployees	BTUs in 1979	BTUs in 2000
NUCLEAR AND FOSSIL FUELS				
Nuclear	1,120.3	450 HQ 1,300 Field	4.1 quads	25.0 quads
Coal	?	?	.15	1.35
Coal Gasification	?	?	none	4.2
Oil	?	?	.2	5.5
Oil Shale	?	?	none	3.2
Natural Gas	?	?	.2	6.0
SOLAR AND GEOTHERMAL				
Solar Thermal	82.0	11 HQ 6 Field	200 kWe	20 Gwe
Wind	40.7	4 HQ	300 kWe	20 Gwe
OTEC	33.2	6 HQ	0	10 Gwe
Biomass	26.9	3 HQ	3 quads	3 quads
Photovoltaic	76.1	8 HQ	200 kWe	30 Gwe
Geothermal	126.7	55 HQ 15 Field	.05 quads	4-9 quads



Marie McAuliffe

THE SUN

Thus, DOE documents suggest that a far greater return on investments of money and staffing will be realized for solar technologies than for nuclear technologies; but, rather than put funds where they would appear to be most effective, DOE has instead chosen to reduce its support for solar energy technologies.

For a supposedly populist presidency, the White House is grossly out of touch with the national will, which is clamoring for solar. Only the Congress, which through the "Solar Coalition" of aides and staffers keeps trying to up the solar-wind-biomass budgets, seems to understand the serious, popular desire for renewable energy sources all across America.

You Can't Throw Dollars at Us!

That's the constant, pathetic cry in the halls at DOE-Solar. "We don't have the staff to monitor all the money Congress shovels at us," they say, as if they couldn't staff-up if they really wanted to. Yet this slowpoke, one-step-at-a-time, linear thinking seems dangerously out of place given the president's call for us to view the energy crisis as a "moral equivalent of war." And certainly the nuclear fission and fusion areas have had billions thrown at them for the last 30 years without such a lack of enthusiasm, lack of staff, or any tendency to return the money! It's high time we got in some new, more enthusiastic (as well as simply technically competent) solar division branch managers to replace the "don't rock the boat by throwing me money" bureaucrats.

Funding by Psychological Type: Wind vs. Photovoltaics

A specific example of what I, and others watching the energy policy field, am noticing is that, despite the already lower costs of wind energy systems mentioned by Rick Katz-

enberg of the American Wind Energy Association in a the Feb. '78 *Solar Age*, the solar photovoltaic branch is getting almost *double* the funding. A number of experts in both technologies feel this is partly because Paul Maycock, solar cell branch manager, is not only academically competent, but because he also comes to DOE with electronics industry technical and manufacturing know-how and then adds to this solid background a used car salesman's eagerness to sell his wares! Lou Divone, wind energy branch chief, on the other hand, is characterized by many of his own grantees as "a conservative MIT scientist who can think only of going from A to B, and B to C, slowly and without innovation." Because of this attitude of scientific detachment, one finds the nation's wind energy program lacking the following "real-world" activities:

- * parallel programs emphasizing local, small industry construction of large wind energy conversion systems (LWECS) rather than the expensive, aerospace corporation approach.
- * strong financial and technical advisory support for states and cities needing to develop wind tax credits, wind zoning and wind rights, local siting manuals, consumers' guides, wind energy extension services for site surveys, and public education programs.
- * a Rocky Flats-type testing program for non-DOE contractor-built large WECS (WTG Energy Systems, Schachle & Sons) to verify manufacturers' claims . . . thereby increasing utility company confidence in commercially available domestic wind-turbines, and the likelihood of sales.
- * strong financial and technical support for regional and state wind energy implementation studies focusing on rapid integration of LWECS into electric grids . . .



Marie McAuliffe

not simply more windspeed data and windpower availability studies.

Howell & Todd of the Bureau of Reclamation in Denver, Colorado, in their Feb. 24, 1978, paper, "What Size of Wind Machine Is Best for a National Electric Power Mission?", support a number of these points:

At the present time, the number of companies actively engaged in development of windpowered generators is very small, and all of those so engaged are industrial giants. An obvious reason is that the very large investment of overhead effort required for responding to the current targets of the U.S. Department of Energy in the range from 1.5 to 3 MW effectively bars smaller companies from participation. One important consequence is that the number of people involved in innovative thinking and experimentation on the subject of windpower is very limited, and access to the field on the part of outside inventors with perhaps radical ideas is very difficult. If the unit size of machines were small enough, and production targets were large enough, the rate of innovation and development in the field of windpower might be correspondingly greater.

and

... We have the example of the first major prototype windpowered generator, the NASA Mod-O Machine installed at Plum Brook, Ohio. First erected in 1973, it encountered and overcame one difficulty after another in sequential order, finally achieving operational capability late in 1977. Each problem was discovered and tackled after the previous one had been solved. The entire national windpower effort was like a train traveling a single-track line from A to B and being forced to stop dead every time a hotbox occurred. In retrospect, it appears that much faster progress would have been made if the national effort had been planned to progress along several parallel tracks simultaneously, with alternate routes to reach important goals. It would be perhaps wise to review windpower strategy at the present time to see whether procurement of larger numbers of smaller machines would not recruit more innovators, more inventors, and more cost-conscious producers into the national program, and thus follow the trail blazed by the automotive and aviation industries toward early commercialization.

In fact, the American Wind Energy Association (AWEA) has developed an entire shopping list of what needs to be done in the federal wind energy program and the budget needed to do it all, with a focus on widespread, publicly visible demonstrations of all sizes and kinds of wind-turbines and on getting them out into the energy marketplace for sale. Copies of *The Federal Wind Program: A Proposal for FY 1979 Budget*, February 18, 1978, prepared for the Dept. of Energy, are available for \$3.00 per copy from the American Wind Energy Association, 54468 CR 31, Bristol, IN 46507. It's the best update available of what's going on now in wind across the country, as well as a clear guide to our most sensible next steps.

A.T. at DOE: the Office of Small-Scale Technology (OSST)

The a.t. energy grants pilot program has so far been very well run in federal region IX, the exemplary effort being that of the California OAT, where three obvious gold stars (like Sunday school, remember?) should go to Barbara Burd, Alison McKenzie and Bob Judd, the new OAT director. However, the most unsung hero of all is Web Otis, in DOE's San Francisco Operations Office, who knew absolutely nothing about a.t. when he was given the job of running this weird new program for California, Nevada, Arizona, Hawaii and the Pacific Trust Territories. But rather than sit at his desk and hire a high-priced consultant to come in to explain it all to him, like most federal bureaucrats do, Web simply said, "Hey, everybody, I'm going to be gone a few days. I'm going to go check this out." And so he visited a.t. people all over, listening a lot and asking each of them who he should talk to next about what a.t. is and how *they'd* run a small grants program. It's called "networking," or maybe just "getting out to meet the folks." And with what he learned, Web put together a fine program which other federal regions have only to fine-tune. Tentative dates planned for the announcement of a.t. grant winners are as follows:

Hawaii	March 31, 1978
Arizona	April 3, 1978
California	April 5, 1978
Nevada	April 7, 1978

Yet, despite all this hard work in the region and the overwhelming number of fine proposals, DOE-OSST in D.C. has continually turned a deaf ear to requests, backed up by ample written justification in a continual stream of data, letters and reports, to release the rest of the money budgeted by the Congress so all the good ideas could be funded . . . all \$8 million. Again, as with the wind energy program, we can follow what happens when a solitary D.C. bureaucrat lacks the experience and enthusiasm to want to run an effective program. It's official obtuseness like this that makes me feel sometimes that Steve Baer is right: And turns me into an anti-government right-winger!

Jerry Duane Has to Go

The present OSST director, Jerry Duane, should be removed, or given a small part of a larger, 15-person OSST to run, as he seems to have reached his level of competence à la "the Peter Principle." For when Congress said "you can spend \$8 million in FY '78 on a.t.," DOE-OSST only asked for \$5 million in its budget request and, when the Office of Management and Budget asks, "Say, how about taking \$3 million?" Duane whimpers and says "OK." That's what must be seen as a lack of managerial enthusiasm for one's *own* program, which comes from either a "who cares" or a spineless, "I hope I can handle it" attitude.

If you think I'm being too tough on the guy, then you should have seen *all* the inexpensive, worthwhile proposals I saw and evaluated in Sacramento that won't get funded because of some inept and unconcerned bozo in Washington, D.C.! On top of that, rather than being able to expand to the other nine federal regions after the *pilot* program so obviously proved it could be done and done well, one finds that because there's only \$3 million for *all* of FY '78, Jerry Duane has decided that the a.t. small grants program obviously can only be run in two other federal regions.

Here's What We Want, Omi

Now it's obvious to me the federal mule again needs a 2x4 slammed against the side of its head to aid it in making a needed mid-course correction, as they say at NASA. We need two things: the right people and the right promises. There are a number of people being talked about as potential director of an OSST enlarged from three to fifteen people. They are Jim Benson, now at the Council on Economic Priorities in NYC; David Goldberg; Malcolm Lillywhite of the Domestic Technology Institute in Colorado; Jim Parker of the Center for Social and Environmental Concerns in Montana; Mary Ann McKenzie of CSA in Washington, D.C.; and Michael Pete of Booz-Allen-Hamilton in D.C. I'd trust any of them in place of Duane, who even lacks enough a.t. savvy to understand why those of us in the Pacific Northwest want *our* a.t. program run out of *our* region, *not* out of San Francisco.

But whatever person runs OSST in the future, we'll have no hold over them, no way to make them keep their all too easily spoken promises unless we get what we want down on paper. The best way toward that modicum of control is to make sure that Ms. Omi Walden, Carter's nominee for Asst. Secretary for Conservation and Solar Applications, and under whose authority OSST resides, is asked a few a.t. questions during her Senate confirmation hearings. Here's some of what we should ask for:

- * *increased funding—we want OSST to fight for funds within DOE and for DOE to support OSST budgets so they survive OMB unscathed.*
- * *local program management—we want OSST to run its programs through state, city and county agencies, on the way to the neighborhood block level. . . federal regional offices should only be used to manage a.t. programs until we learn to do them even more locally.*
- * *a.t. "old-timer" advisory panel—to meet four times the first year, three times the second, then semi-annually, to keep OSST on course and from stepping on toes of existing "grassroots" a.t. organizations; should number twice the number of people on OSST staff; be composed of long-time a.t. advocates known for their vision, grassroots experience, technical competence and political independence.*
- * *a.t. people in OSST—get appropriate technologists in as many positions as possible.*
- * *rotating staff—a.t.ers in the provinces should be brought in to work one to six months at OSST, while an OSST staffer takes their place in a.t. groups out of D.C. Teaches a.t. people about OSST, D.C. politics, etc. and OSST people about local groups, how best to use them, work with them, what federal actions can hurt them.*

* *citizens' evaluation in a.t.—if a.t. is supposed to be a citizens' or people's technology, understandable and buildable by laypeople, then try to increase the participation of the "man-on-the-street" in OSST programs, such as in evaluating a.t. grant proposals.*

That's all I can think of right now. If you've got other items to get into the transcript, let me know if you can, but whatever you do, be sure to send your "questions for Omi" to your senator or congressperson, with a request that they be asked. Her confirmation hearings occur after the Easter recess.

Friends of Appropriate Technology (FAT)

Within the last year, over 150 people in Washington, D.C., have joined a local informal network that meets over potlucks and brownbag lunches to push a.t. in the federal agency bureaucracy. A three-page history called "The Forming of FAT" is available from Mary Anne McKenzie, Office of Community Action, CSA, 1200 19th Ave., N.W., Room 30, Washington, DC 20506, and a fourteen-page FAT name, address and phone list is available from Michael Pete, Booz, Allen & Hamilton, Inc., 4330 East West Highway, Bethesda, MD 20014. You might also want to share your views on a.t. and your "questions for Omi" with people in FAT. They're our friends on Capitol Hill . . . the a.t. counterpart of the Solar Coalition.

DOE ENERGY SUPPLY RESEARCH, TECHNOLOGY DEVELOPMENT, PRODUCTION, DEMONSTRATION AND DISTRIBUTIONS (Budget Authority, \$ Millions)

	'77	'78	'79
Fossil	537	846	924
Solar	282	390	373
Geothermal	53	106	130
Hydro	2	10	8
Biomass	13	21	27
Fusion	316	325	334
Fission	1,099	1,125	1,000
Basic Energy Sciences	155	177	211
Other	7	12	25
	3,381	3,478	3,231
(not included above)			
Uranium Enrichment	919	471	202
Advanced Technology Assessment Projects	1	8	21
Energy Storage Systems	33.5	50.2	58.0
Electric Energy Systems	26.5	39.5	40.0
Improved Conversion Efficiency	23.2	58.2	78.0
End Use Conservation	82.7	143.3	185.8
At Small Grants Programs		3.0	3.0

Lee Johnson

TRUTHS AND CONSEQUENCES, or Don't Believe Anything the Aluminum Industry Tells You!

Ah, the patterns of human curiosity. Lately, as usual, we've gotten a few queries which illuminated a gap in the perspectives we share with you. Almost simultaneously, so we were able to notice the coincidence amid the sometimes speedy and often plain human failing of inattention around the office, we got two calls for information on "alternative energy scenarios." People wanted to know what basic premises they should use as foundations for examining local and regional energy policy, and what exemplary studies and reports existed that they could use as models.

So the publications list below is divided into two sections. "Truths" contain the assumptions to build upon; "Consequences" the constructed examples. Let me know if you think of others to add or any that should be removed, as we plan a 50¢ annotated bibliography on them in the near future.

—Lee Johnson

TRUTHS

"Energy Strategy: The Road Not Taken," by Amory Lovins, in *Foreign Affairs*, Oct. 1975, \$10/yr. from:
Council on Foreign Relations
58 East 68th St.
New York, NY 10021

Soft Energy Paths: Toward a Durable Peace, by Amory Lovins, 1977, from:
Ballinger Press
17 Dunster St.
Cambridge, MA 02138

"Energy, Ecology & Economics" by Howard T. Odum, available from:
Energy Center
Univ. of Florida
Gainesville, FL 32601

Energy Basis for Man & Nature, by Howard T. and Elisabeth Odum, 1976, \$7.95 from:
McGraw-Hill
1221 Avenue of the Americas
New York, NY 10020

"Emerging Energy Policy Principles" by Tom Bender, and "Cosmic Economics" by Joel Schatz and Tom Bender, 1974, \$1.00 for both from:
RAIN
2270 N.W. Irving
Portland, OR 97210

Toward a Steady State Economy, by Herman Daly, 1973, \$3.95 from:
William Freeman & Co.
660 Market St.
San Francisco, CA 94104

CONSEQUENCES

"Energy and Employment," CEP Publication N7-10, Dec. 28, 1977, from:
Council on Economic Priorities
84 Fifth Ave.
New York, NY 10011

"The Impact of Solar and Conservation Technologies on Labor Demand," by Skip Laitner, May 1976, from:
Critical Mass
Box 1538
Washington, DC 29913

"Energy and Labor Demand in the Conserver Society," by Bruce Hannon, July 1976, from:
Center for Advanced Computation
Univ. of Illinois Urbana-Champaign
Urbana, IL 61801

"Wise Wind-Designing for Jobs," April 1977, and "Small Groups, Big Windmills," January 1978, both by Lee Johnson, RAIN, \$1 each from:
RAIN
2270 N.W. Irving
Portland, OR 97210

"Jobs and Energy," by Richard Grossman, 1976, from:
Environmentalists for Full Employment
1101 Vermont Ave., N.W.
Washington, DC 20005

A Study of Existing Energy Usage on Long Island and the Impact of Energy Conservation, Solar Energy, Total Energy and Wind Systems on Future Requirements, October 1976, from:
Dubin-Mindell-Bloome Associates
42 W. 39th St.
New York, NY 10018

Montana Energy Conservation Plan, March 1977, from:
Montana Energy & MHD R&D Institute
P.O. Box 3809
Butte, MT 59701

"Exploring Energy-Efficient Futures for Canada," by Amory Lovins, in *Conserver Society Notes*, May-June, 1976, from:
Science Council of Canada
150 Kent Street, 7th Floor
Ottawa, Canada K1P 5P4

"Assessing the Solar Transition," by R.H. Murray and P. La Violette, in *Goals in a Global Community: Studies in the Conceptual Background*, Lazlo & Bierman (eds.) 1977, from:
Pergamon Press, Inc. Maxwell House
Fairview Park
Elmsford, NY 10523

Odum, H.T., et al, in Part 1: *Middle- and Long-Term Energy Policies and Alternatives*, p. 261, in Hearings before the Subcommittee on Energy and Power of the House Committee on Interstate and Foreign Commerce, 94th Congress, March 25-26, 1976.

SCL Energy 1990 Study, from:
Office of Environmental Affairs
Seattle City Light
1015 3rd Ave.
Seattle, WA 98104

Science: 15 July, Solar R&D on Nuclear Model?
22 July, Solar Thermal Electric
29 July, Photovoltaics
12 August, Solar Thermal
19 August, Biomass Fuels & editorial
from 2 September, Large & Small Wind Systems
1515 Massachusetts Ave., N.W.
Washington, DC 20005

continued →

Silly President Carter!

President Carter has said that the energy crisis is the moral equivalent of war. This is silly. He is confusing unimportant things with important things. We use a great deal of oil. It won't last forever. To think that having or not having the luxuries provided by oil is something that can be equated with war doesn't make good sense. Unfortunately it is true that a spoiled country, misled by short-sighted leaders, could start a war, not over important matters but only the question of a few luxuries.

Should we feel guilty about our consumption of oil? Why feel guilty? If you do the simple solution is to stop using it. Let those who want to use it continue to do so as long as they can pay for it. We drilled for oil, we found it, we burned it, we have had a good time with it. What else can we expect of human beings? And, of course, the oil party won't last forever. Some people at the party are already feeling uncomfortable; most of the world would never even get near this extraordinary party.

If you feel uncomfortable with the oil, you can live a life that doesn't depend on it. Do this and know that others will follow as the oil runs out. But don't try to ruin the party! It will only make bad feelings and unhappiness. Let the Cadillacs rule while they can.

How can we live our lives without consuming huge quantities of oil? There are millions of Americans right now who don't use much oil and many of them are actually happy people. Cutting back on oil consumption is frightening only to people who have no imagination and no confidence.

What should the national policy be about energy? There shouldn't be any national policy. No one has the wisdom to make one. Clearly, the armed forces need to stockpile large quantities of oil as the supply becomes uncertain; but we do not need a Department of Energy. We do not need laws governing everything from the car you drive to the windows in your house. Won't we get in trouble without such laws? Some people certainly will. Foolish people will waste their money on inefficient cars and badly built houses; isn't that their business?

For a number of years I have watched with amazement the U.S. government try to undermine and discredit successful solar heating systems. I have come to have a great distrust of government. When the Department of Energy gathers money from the taxpayers and hires energy experts to solve the energy crisis, it spends money in such a wasteful fashion that it only convinces the observer that there could be no oil shortages. These scientists and bureaucrats don't seem even to be having any fun as they waste our money and oil. I'd rather see Cadillacs driving in circles. A few years ago our company, Zomeworks, tried to get money to perfect a simple solar heating system from the Washington energy experts (then they called themselves NSF). We were turned down.

Later, after we had built our solar-heated house, a Colorado engineer repeatedly tried to get money from the same group to instrument our house. He was told that our house wouldn't work and was turned down.



Now, I tell myself, if I went to the latest energy experts in Washington, they would give our company money. They would almost have to. After all, now—despite the government—we have proved it works. But now I don't want their money. The lesson I learned is that the American public is a lot wiser than the experts hired by its elected officials. If you have something that works and will save people money, your neighbors will notice and will buy one for themselves. Leave people alone with enough wealth after they pay their taxes and they will invent, develop, trade with each other and do a good job of solving their own problems.

For some reason, many Americans have lost faith in this old and very American tradition.

It is a great shame that the so-called energy crisis is being used by politicians to increase taxes and laws—thereby taking away liberties Americans have previously enjoyed.

Here is the beauty of free enterprise—if you don't want to buy something our company sells, you don't have to. If you don't want to buy what EXXON sells, you don't have to. But, try this simple experiment: explain to the Internal Revenue Service that you aren't going to pay the portion of your tax money that goes to the Department of Energy; government agents will come and take away your property. I know; I tried it during the Vietnam war.

Behind every gentleman working on government research, whether it be solar energy or nuclear energy, stand the police. This is a great shame; I don't think the founders of our country had this relationship in mind.

I predict that the Department of Energy will eventually home in on this project—how to water oil. Just as the government can water the money, diluting its value by printing more dollars, it will look for a similar way to grapple with the "Energy Crisis." As with the printing of money, this watering of oil will be carefully regulated. So far the oil and water don't mix. — Steve Baer

Skidmore, Owings & Merrill, *Bonneville Power Electric Energy Conservation Study*, July 1976 (NTIS 256766/SD), from:
National Technical Information Service
U.S. Dept. of Commerce
Springfield, VA 22151

Stanford Research Institute for ERDA, *Solar Energy in America's Future*, Stock No. 060-000-00051-4, \$2 from:
Supt. of Documents
U.S. Gov't. Printing Office
Washington, DC 20402

Wixom, Charles W., *Application of Solar Technology to Today's Needs*, June 1977, from:
Office of Technology Assessment
U.S. Congress
Washington, DC 20510

Choosing an Electrical Energy Future for the Pacific Northwest: An Alternate Scenario, Roger Beers & Terry Lash, January 1977, \$3 from:
Natural Resources Defense Council, Inc.
234 Yale St.
Palo Alto, CA 94306

WATER

Killing the Hidden Waters, Charles Bowden, \$9.95 from:
University of Texas Press
P.O. Box 7819
University Station
Austin, TX 78712

Killing the Hidden Waters and the following book, *The Last Caravan*, both talk of self-sufficient cultures built on mutual aid "... that collapsed into a world where jobs come from alien cities, energy comes from fossil fuels, water comes from holes in the ground that pour forth millennia of rainfall in a man's brief three score and ten."

Clark deals with the collapse of the Tuarag culture as a consequence of extreme drought while Bowden studies the southwestern United States and the impact that "mining groundwater has meant for the people and the land."

"The Papagos, ignorant of hydrology, bereft before the white man of so much as a wheel, know in their hearts and lives a lesson just becoming apparent to Americans. Water is energy, and in arid lands it rearranges humans and human ways and human appetites around its flow. Groundwater is a nonrenewable source of such energy.

These facts are the core of the impact when groundwater is developed in such places. Humans build their societies around consumption of fossil water long buried in the earth, and these societies, being based on a temporary resource, face the problem of being temporary themselves." *Killing the Hidden Waters* traces different technological developments applied to human use of groundwater and human response to that use.

"Groundwater is essentially nonrenewable in the arid west because the economies that exploit it cannot abide a low rate of use. By combusting non-renewable coal and nonrenewable oil and nonrenewable natural gas, they managed to lift nonrenewable water at incredible rates. By using water with abandon they can compete with more humid regions, where it is basically a free good. This extractive process, like the looting of ore deposits, soil, forests and fuels, is the machinery behind the expressions 'conquest of nature' and 'the miracle of the deserts.' Rip away the veneer of western history and this consumption of resources links the centuries." —JM

The Last Caravan, Thurston Clarke, \$10.95 from:
G. P. Putnam's Sons
200 Madison Ave.
New York, NY 10016

A more contemporary version of a similar process is found in *The Last Caravan*. Thurston Clarke tells of the Tuareg, a nomadic people accustomed to the hardship of a demanding land and climate, and the causes, conditions and responses to the drought that ravaged the six countries that make up West Africa's sahelian region between 1968 and 1974. The collapse that occurred was a result of not only the severity of the drought but also the subsequent disasters that were caused by technological "improvements"—wells and pumps, vaccination programs, and cash crops which upset the natural nomadic equilibrium. "An extended drought was the natural phenomenon that triggered the subsequent disasters: expansion of the desert, famine, and the death of many humans and animals due to starvation. During the ten years prior to the drought, the human settle-

ment pattern in the sahel's nomadic regions has been profoundly transformed by certain foreign economic and technological innovations. The innovations were largely responsible for turning five years of substandard rainfall into a total ecological collapse."

The result has been the disintegration of a once distinct and self-sufficient culture and the skills and stamina of previous generations are being lost. Both Bowden and Clarke have done much more than presented facts and conclusions with these books. They have given you a feel for the previous patterns of these people's lives and the tremendous changes that have transformed their physical world and also the unmeasurable cultural and spiritual losses that were a consequence. —JM

Water Conservation Pamphlets, free from:
Policy and Planning Division
Water Resources Department
555 13th Street N.E.
Salem, OR 97310
Toll free phone 1-800-452-2826

These home water conservation bulletins contain some of the best listings of water conserving appliances, toilets, faucets, etc. A bargain at the price. Only I wish energy conservation people would quit making the fraudulent comparisons that say electric shavers use less energy than using a safety razor with the water running or that dishwashers use less water than washing dishes by hand under running water. Both comparisons infer that most people use that much water for shaving or dishwashing—rather than that being an extreme situation. In reality, *most* people use considerably less water and therefore energy. On the other extreme, we've been using about a quart or two of water a day to do dishes for the last few months. You just learn to do it differently when you have to haul water. —TB



SEWAGE

Toilet Victory

A recent precedent-setting court decision in California ruled that health departments cannot deny permits for compost toilets or other alternative sewage systems unless it can actually show that the system presents a health hazard. Until now your potty was assumed guilty until proven innocent. People of the State of California vs. William Duncan McEwen, Case No. 2833-C, Anderson Judicial District, Mendocino County, CA, 21 February 1978. —Sent to us by Sim VanderRyn

WOOD

Heating Your Home with Wood: A Guide to Modern Wood-Burning Appliances, Hal Richman, 12 pp., 1977, 25¢ from:

The Stove Works

Box 2673

Chapel Hill, NC 27514

When someone walked into Hal's woodstove store and complained they had just bought a stove from another dealer who hadn't told them they needed a chimney, he figured some very basic consumer education was necessary. After 6 months and 16 drafts, he came up with this booklet. For the novice with a quarter it asks and answers all the right questions and gets him/her thinking exactly how wood heat can fit into his/her home. The "Wood Heat Checklist" of questions to ask and answer yourself *before* going to the stove store is alone worth two bits. (Courtesy Chuck Holton)

"Masonry Stoves," *Country Journal*, Feb. 1978, \$1.25 from:

P.O. Box 870

Manchester, VT 05255

Masonry Stove Guild Newsletter, quarterly, \$5/year from:

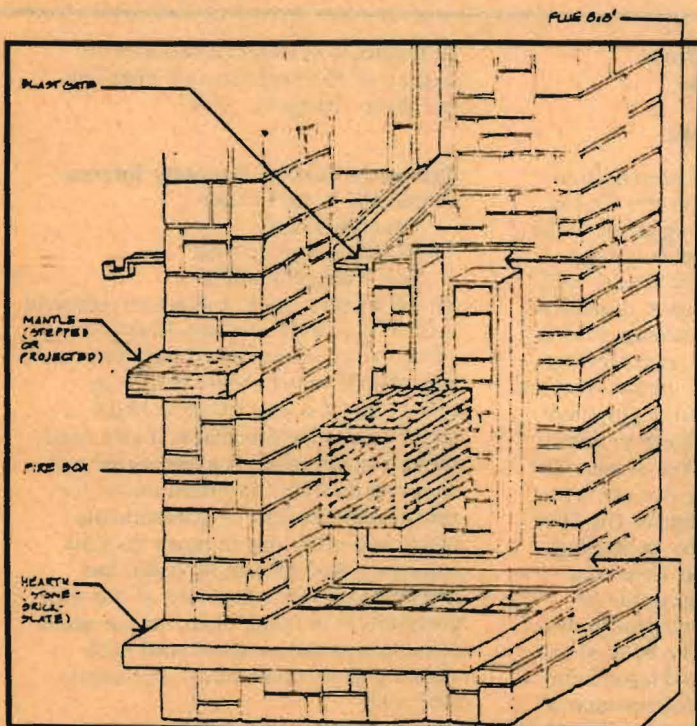
Albie Barden

Maine Wood Heat Co.

RFD 1, Box 38

Norridgewock, ME 04957

The latest woodstove fad on the East Coast seems to be masonry stoves, originating in Finland and Russia. Long circuitous stove flues transfer heat from a fast hot fire to a masonry mass that radiates the heat to the room slowly and evenly. This *Country Journal* article has all the details. Now if only our West Coast wood-heat fanatics can come up with good details on kangas, the Asian heated floor platforms, and our European correspondents can send in plans for the Dutch masonry stoves (which are often built around a cozy-alcove bed), we'll all be sitting warm and cozy. Albie Barden just got back from a research trip to Europe studying all kinds of masonry wood stoves, and is planning a series of workshops on them as well as writing a book for Rodale Press on the subject. His *Masonry Stove Guild Newsletter* has the details of what he's uncovered. —TB



Ten Uses for Wood Ashes

The chief by-product of heating with wood has more uses than a Swiss Army knife. A cord of wood produces about 50 pounds of ashes, and the task of removing them from the stove leaves smudges on faces, dust all over the floor and an inevitable question: what are we going to do with them?

Though ashes from different types of wood vary slightly in their chemical composition, the ideas described below will work for all kinds. The only way to improve quality is to sift them. Some stoves produce ashes which contain chunks of charcoal and other debris. These larger bits can be removed with a simple sifter made of half-inch chicken wire. If you want to get fancy, add a wooden frame to the sifter.

1. **Fertilizer.** Wood ashes are composed of 50 to 75 percent lime, so if you have a large stove and a small garden, you may never need to buy lime again. In addition, ashes contain phosphorous, potash and other trace elements that are good for the garden. Best of all, ashes used for this purpose can be spread in the middle of winter. Just take them to the garden area and sprinkle them as evenly as possible on the snow. Come spring, they'll sink into the soil as the snow melts.

2. **Mulch.** Some controversy: One gardener told me that they were superb around shrubs; another insisted that they had killed her rose bushes. One solution is to cut the ashes with another mulch material so plants benefit from the lime without being overwhelmed by it. Do not put ashes around newly germinated sprouts, nor around acid-loving plants such as blueberries and azaleas.

3. **Compost Helper.** Ashes are a good way to neutralize the acidic conditions in the compost heap. Spread a fine layer on top of the compost whenever you turn the pile.

4. **Insect Repellent.** During bug season, ashes can be used to repel insects in the garden. Encircle the tomato plants or spread them in long low mounds beside the row crops. Slugs and snails are especially reluctant to storm these barricades and other insects are discouraged by them.

5. **Lice Treatment.** The anti-bug component of ashes makes them an effective treatment for lice in the henhouse. Leave a heap of ashes in the corner of the chicken run and the flock will use it for dust baths.

6. **Deodorizer.** Ashes suppress odors, so some people sprinkle them in outhouses. They can also be effective in cat boxes. Just be sure to mix them thoroughly with the litter so that you don't find ashen paw prints all over the house.

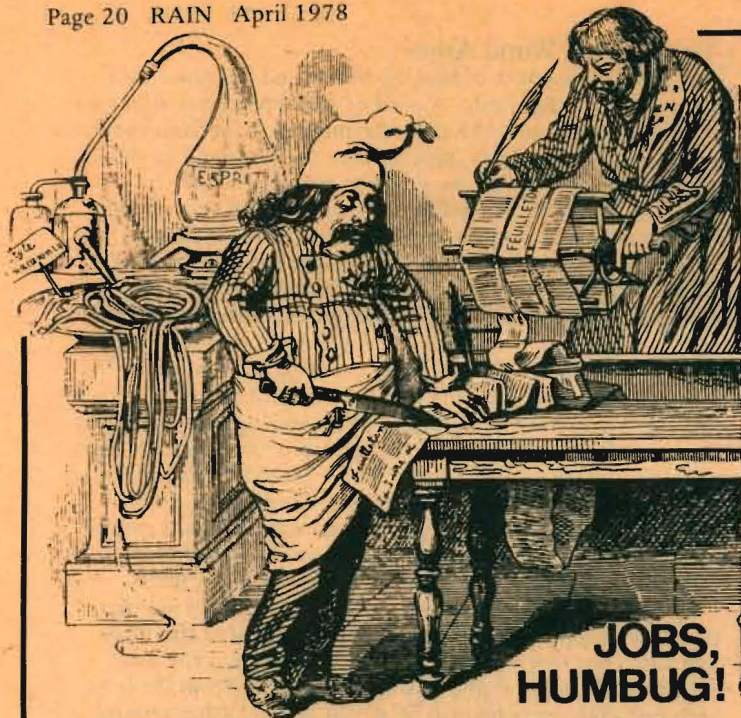
7. **Sidewalk Deicer.** Another happy property of ashes is their ability to melt snow and ice. Use them instead of salt on icy steps and walkways. The runoff is much healthier for the surrounding earth. Remember, however, that the ashes will stick to your feet and make a mess of the house unless you take off your boots at the door.

8. **Traction Maker.** Some people also carry a box of ashes in the trunk of their car during the winter. The weights provides added traction for the back tires, and if you do get stuck, a shovel or two of ashes under the tires often provides just the grip you need to get free. Coal ashes are even better for this purpose since the cinders make them grittier.

9. **Fire Extinguisher.** Ashes, of course, are the residue from a fire and cannot be burned. A large quantity, dumped on a fire that is burning out of control, will smother the fire without damaging the stove. Granted, it's a messy method, but it will work in a pinch.

10. **Stove Cement.** Mix a quart of sifted hardwood ashes with a handful of salt and enough water to make a thick paste. For patching corroded sections of stove liner and sealing between stovepipe and chimney, it works as well as commercial cement and there's no asbestos.

(From Vol. 56, No. 35, *The Weekly Market Bulletin*, Nov. 30, 1977, N.H. Dept. of Ag., Bureau of Markets, 85 Manchester St., Concord, NH 03301, \$5.00/year)



**JOBS,
HUMBUG!**

Having jobs can be as much a basic cause of social and economic problems as a solution to them.

"Having a job" looks at providing for our needs solely through the means of institutionalized work—working for someone else. There are alternatives. Among them, working for oneself (self-employment), providing for our own needs (self-reliance), or not working (self-restraint). All have very different social consequences which are usually ignored when we look at employment in the narrow, institutional way.

Self-employment means that division of interests between worker and management is avoided along with the attendant and real accusations of featherbedding, irresponsibility, profiteering off the workers, etc. Self-reliance means that the producer/consumer split is avoided along with the resulting inability to know how things work, if they're well-made, price-gouging, etc. Self-restraint means that the division of interest between present and future generations and between

us and our surroundings is lessened. Demanding less (and having to work less to satisfy those demands) also means avoiding unnecessary production and consumption of resources that we share with our surroundings and our grandchildren.

The "job" relationship that is so common in industrial society puts us in a real double-bind. We're supposed to be efficient, productive, and work for the interests of our employer for a certain period, then abruptly turn around and be profligate consumers, buying for whim, vanity, luxury and prestige. At the same time we're trapped into an effective divide and conquer strategy by commercial interests. By dividing us into working and consuming modes—neither of which we control or can bargain as equal partners—we get milked coming and going. As consumers we can only judge price, not what costs of production were externalized in forms of pollution, tax avoidance, workers exploitation, etc., that we have to pay the consequences of elsewhere. As workers we can usually only bargain for dollars—a logger or coal miner can't usually act against stripmining our forests, soils and minerals.

Thinking more broadly than jobs, and avoiding jobs both personally and through governmental policies that encourage alternative means of satisfying our needs can be a positive approach to a better quality of life, with substantial social and economic benefit. Self-confidence grows with self-reliance. The more we are responsible for satisfying our own needs, the less we're trapped in the frustrations, anger and distrust that fills the marketplace and workplace. Unnecessary production is avoided when we don't buy. Make-work jobs like CETA no longer can be looked at as "creating employment." Self-reliance minimizes taxes. Real needs are more effectively met by the person having those needs.

A self-reliant economy, by all appearances, is both more effective economically for the people involved and more resistant to exploitation by outside interests than an exchange-based economy.

Small-scale, employment-intensive technologies are valuable in the specific trade-offs against centralized, energy and capital-intensive technologies, but they also allow these basic and important changes in the patterns of work and need to be more thoroughly considered in dealing with employment problems. —TB

BAD GUYS

CIA's Covert Operations vs. Human Rights, 10¢ from:

Center for National Security Studies
122 Maryland Avenue N.E.
Washington, DC 20002

We refer from time to time to the immoral and illegal and generally appalling activities of the FBI, CIA and other U.S. Government agencies, but without detailed reference. These folks have pulled together a concise overview of CIA training of terrorists, their setting up of secret police activities in other countries, their use of the church, labor unions and academic institutions as cover for illegal domestic and foreign activities . . . the list goes on and on. Suggests what you can do, and gives resources and helpful organizations. This should remove any lingering doubts you may have that some big changes are needed. —TB

Nuclear America, 75¢ from:
War Resisters League
339 Lafayette St.
New York, NY 10012

At last there's a graphic presentation of the nuclear industry in the United States that gives full recognition to the immensity and pervasiveness of this menace. *Nuclear America* is a 17"x22" poster detailing the location of nuclear power plants, uranium mining, milling and processing facilities, reprocessing and waste storage sites, nuclear weapons development, testing and deployment sites, as well as areas subject to direct nuclear attack in the event of war. The total effect is staggering—we are fast becoming an armed camp for the 20th century's most oppressive technology. War Resisters League has done us a great service by underlining the inseparable link between nuclear power and nuclear weapons. The back of the poster is a well-researched legend containing the names and descriptions of

all facilities, as well as a succinct discussion of the problem and what you can do to change it. —SA

Report on Torture, Amnesty International, 1975, \$3.45 from:
Noonday Press
19 Union Square West
New York, NY 10003

This is a heavy book. I don't recommend it for recreational reading. What it reveals is so sickening that I have been unable myself to read more than fragments, but it is important to know about and to have available if you need the documentation. It presents the evidence of massive and brutal use of torture against citizens by governments today and every day in more than 60 countries. Bad enough by itself, but worsened by the complicity of our own government in much of it. Action needs to be taken, and needs to start with cleaning up our own house and activities. —TB

Raindrops

This Island Earth

Having read about myself so much in the last couple issues of RAIN, I'd started to wonder if they were talking about the same person. At last, however, I'm here in Portland and have merged with my phantom-self enough to self-consciously push this pen across the page. Now, if I can't figure out where I really am, it's my own damn fault!

The Great Blizzard of '78 was part of the delay in coming west, leaving me socked in at the farmhouse in Maumee, Ohio, while the snow blew sideways out the windows, and the sparrows clutched stoically to tree branches for dear life. In its wake, greater Toledo lay buried in snow, muffled and still; despite the obvious misfortunes, it was beautiful.

The day after the storm, I trudged out into the world and hitched a ride on an overcrowded snowmobile into the suburbs. What I saw would have warmed the heart of any true anarchist. There, emerging from their condos and luxury apartments, trekking toward the supermarket amidst the drifts and abandoned cars, with boots and backpacks, were *hundreds* of people—talking, shoveling, smiling. Never had I seen so many real humans in this normally bleak, auto-ridden neighborhood. It's not just that crisis pulls us together—it also pulls us out, freeing us from all our self-imposed atomism. And don't it just feel *good* to be helping one another! Territorial Imperative? Move over!

After several days and a break in the weather, I managed to escape with a fellow traveler for the West Coast in a two-car convoy. Our relaxing pace made the journey stretch over six days and gave me time to stop and visit with dear friends of long standing. During the long hours on the road, the gradual changes of the North American land form stretched out before me, giving free reign to visions and imaginings . . .

One Iowa afternoon, endless ridges of cirrus clouds backlit by a strong sun cast a magical veil of light over the land, like so much luminescent fish-scale. You know that such far-fetched analogies in nature are more than just matters of coincidence . . . then came the mirages, waiting wet and unapproachable at each crest of the hilly roadway, reflecting the sky and so succinctly framed by the curving hills that they would take on the appearance of holes. You could swear these were gaps in the cosmos through which you were about to pass, and that even if only an

optical illusion, they were reflecting some other order of reality seldom so literally expressed. . . . At one point in southeast Idaho, the high plains lost all perspectives on the mountains, and yet the feeling of elevation was overwhelming, especially for an Ohioan. With the curve of the horizon, and the last tier of clouds sinking beneath it, it was as if you were on an island in the sky. In all, a very accurate sensation!

But then there were the downers too: On I-80 was the constant trafficking in beef, with cattle trucks hauling their cargo from farms to feedlot, one after another. The American meat fixation is visibly astounding; too many millions of these animals go to the slaughterhouse, wasting inordinant amounts of kilocalories in valuable grains that could give us much more energetic value if more directly used. . . . Somewhere in eastern Oregon I confronted the stark road sign: "DUST. NEXT 40 MILES," witness to land-use patterns all over the fragile West, where so much has been transformed in an attempt to extend the land's economic value. But it's not like there is always stability in such large-scale manipulation as massive impoundments of rivers, extensive irrigation projects and the energy-intensive mechanization of agriculture. Just think: before these heavy changes, that sage and scrub grass were the best that natural evolution had to offer.

In all, I thought, industrial people have had different ways of extending their adaptability, some of which have

been technologically extrapolated and riddled with hidden inefficiencies. In the short run, we may enable ourselves to accomplish impressive feats, blooming deserts and steaks at every supper. In the long of it, our flexibility to adapt and survive on a changing planet may be drastically impaired.

As I descended into the great Gorge of the Columbia River, heading toward Portland, I couldn't help but wonder. Our gift for reason and speech, imagination and calculation, will enhance our livelihood only if we learn how to use them within very real constraints—within seasons and cycles. Yet use them we must. This is not a dilemma, but a condition of existence, and one which in no way limits the incredible possibilities before us.

It is such possibilities, I suppose, the things that don't yet exist or that have been lost, the need for ecological consciousness, the simple, elegant and empowering technologies, the tools of democracy, self-reliance and human dignity that bring me to this place called RAIN. I hope I can serve them well. —SA

Fire on the Mountain

Sad news to share. The house Lane and I were building out on the Oregon coast burned down February 9—the morning after we finished it. The cause of the fire is unknown, though it started somewhere in the entrance, woodshed or porch. Most of the money side of the loss was covered by insurance and we will probably begin rebuilding in a few weeks. We don't have the energy yet to share what we've experienced and learned, but will try to when we can. All the love and help people have given us have been wonderful. Thank you all. —TB



UNNATURAL PHENOMENON: the RAIN perpetual motion machine barely paused in late February long enough to be captured by our camera. Left to right: Tom, Steve, Joan, Linda, Lane and Lee.

Organic Agriculture Directory Service
Watertree Environment Health is seeking support/participation in establishing an "Organic Agriculture Directory" for Third World Ministries. Most Third World countries are not protected by environmentally sound farm practices. If you wish to be on call for advice/demonstration or support with a small donation, send information, your specialty, to:

Bill Quealy
Watertree Environment Health
c/o 1004 Ocean St.
Santa Cruz, CA 95060

Anyone know about small-scale technology for the pressing of oil from indigenous plants? We thought of VITA (3706 Rhode Island Ave., Mt. Rainier 20822) and the CECOCO people (P.O. Box 8, Ibarahi, Osaha, Japan), but maybe someone else knows more.

Contact:

Ed Kruse
Box 94
Porters Falls, WV 26162

Dear Lane,

In response to your comments on files, I wanted to share my recent experience with a smile. I just moved and went through files I established approximately 2 years ago. I threw out over an apple box full of paper and now have over 1-1/2" stack of unused (emptied) file folders. With glee, I threw out obscure files, *waiting* for the next person to ask me to share that information with them, when I will be able to say, "I threw it out." After all, when I wanted/needed it, and had a use for it (which I don't now), I was able to go out and find it. And, yes, I resorted and re-filed: files AAF this, that, the other and misc. have become file AAF-4 into one. And misc. piles found subdivisions. I'm no longer afraid either of the absurdity of the files acquired, meaninglessness, or of the misc. piles, containing not-god-knows what. I know what's in there—"appropriately filed" or not—and I could find it one way or the other.

The best to you,
Joyce Schowalter
P.O. Box 172
Ellensburg, WA 98926

Dear Rain,

Folding bikes are the coming thing and the very best is the converted kind. I have been using folding bikes of my own conversion for most of the years since 1944.

Multi speeds are all right if you are willing to fuss with the cables and controls, but I much prefer a plain coaster brake or one of the new two speeds with automatic shifting.

Now I have complete faith that folding bikes will become popular because there are so many details that seem coming together to make them far more practical than the early folders of decades ago.

I am 63 years old and now recovering from an auto accident and looking for someplace to move to where bicycles are more likely to be accepted. My life story is so full of things that most people are not prepared to hear or pass judgment on that I will not attempt to write it—it would be too long anyhow.

But if you are interested in someone who is enthusiastic about telling how to convert bikes to fold, let me know. I visited Grants Pass in 1936 and like that area. Hope to hear from you and be glad to answer any questions.

John L. Coffin
Missouri Hotel
Springfield, OR 65803



Dear Rain,

I was reading Lee Johnson's *Bees v. Greedy Bears* in the February/March 1978 issue. It is a good article and set me to thinking. Especially if one is into a.t. for something other than income (it can be interestingly difficult during personal and cultural transitions), there are three areas that people might focus on for necessary capital and to influence the winds of change. Maybe this has already been said, so please forgive if already working in these

areas.

1. CETA programs, especially Title VI, and the upcoming youth employment programs, are, in most instances, begging for ideas and direction. Everything from commercial forestry through people rather than chemicals and equipment to construction of solar panels for the elderly or poor seem possible under the rather broad mandates of these programs. And more may be initiated soon. Regional MANPOWER or State employment agencies are often the best place to insert ideas. Training projects, equipment fabrication, community assistance . . . all are available.

2. The Department of Agriculture is giving increased emphasis to solar energy and extension activities, especially under authority of PL 95-113 (Food and Agriculture Act of 1977). DOA is now into aquaculture, is evaluating its extension service, is expanding several special information collections, and will establish, under Section 1450 of 95-113, a solar energy research information system. It appears to me to be a time of opportunity, when these systems can be influenced.

3. The National Sea Grant Program, within NOAA (Commerce) is now in the process of evaluating and focusing its direction. Again, at both the local and national level, there is an opportunity for input, assistance, and a chance to nudge the direction of these programs.

Peace,
Peter Ryner
P.O. Box 220
Suttons Bay, MI 49682

CORRECTIONS

Francis Moore Lappé and Joseph Collins are selling their book *Food First* for \$7.95 rather than its \$10.95 commercial price. It's available from Institute for Food Development Policy, 2588 Mission St., San Francisco, CA 94110. See the February/March 1978 and October 1977 RAIN for reviews and excerpts from the book.

It's Don Beattie, not Bob, and he's Acting Ass't. Sec'y for Conservation & Solar Applications, not Administrator, as printed in the Feb./Mar. '78 article, "DOE-AT Grants Program: Good, But Underfunded."

Movement for a New Society (MNS) does indeed have street theater workshops five times a year and more, but they are a part of their overall two-week training programs in social change and non-violence. (RAIN, Feb/Mar, '78, p. 17). More on MNS in an upcoming issue!

RAIN PUBLICATIONS

- RAINBOOK: Resources for Appropriate Technology**, 256 pp., April 1977, \$7.95. Resources for changing our dreams and communities. Compilation of the best of RAIN through Spring 1977, with much new material on economics, communications, health, energy, community building and other areas. Fully indexed. Note: **RAINBOOK** incorporates A.T. Sourcelists and Coming Around.
- Urban Ecotopia Poster**, by Diane Schatz, 22"x33", \$3. A reprint of the "Visions of Ecotopia" line drawing that appeared in the April '76 poster issue. Great for coloring.
- Suburban Ecotopia Poster**, by Diane Schatz, 22"x30", \$3. Available for the first time in full size, this finely executed drawing illustrates Small-Is-Beautiful and self-reliance principles applied in a happy suburb of the very near future. Also great for kids' (and grown-up kids'!) coloring. (See cover of April '76 poster issue)
- Emerging Energy Policy Principles**, by Tom Bender, August 1974, \$1.
- Cosmic Economics**, by Joel Schatz and Tom Bender, revised March 1974, \$1.
- Consumer Guide to Woodstoves**, revised Sept. 1977, \$1. Compiled reprints of Bill Day's article on selection, installation, repair of woodstoves, wood cookstoves and wood furnaces of all kinds.
- Sharing Smaller Pies**, by Tom Bender, January 1975, 38 pp., \$2. Discussion of the need for institutional change tied in with energy and economic realities. Begins to lay out new operating principles, including some criteria for appropriate technology.
- Environmental Design Primer**, by Tom Bender, 206 pp., 1973, \$5.95. Meditations on an ecological consciousness. Essays about moving our heads and spaces into the right places.
- Living Lightly: Energy Conservation in Housing**, by Tom Bender, 38 pp., 1973, \$2. Early ideas on the need for change in building and lifestyle; compost privies, Ouroboros Project (self-sufficient experimental house in Minnesota) and the "problem of bricks in your toilet."
- Employment Impact Statement**, October 1976, 2 pp., 50¢. A simple, step-by-step way to figure the employment impacts of a new industry and consider the benefits of different options.

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

Back Issues Available, \$1 each. List those desired: Vol. I, Nos. 7, 8, 9; Vol. II, all 9 issues (Vol. II, No. 6 was a poster issue; Vol. II, No. 9 was a special issue on Northwest Habitat.) Vol. III, all 10 issues; Vol. IV, Nos. 1, 2, 3, 4, 5 (Vol. IV, No. 2 was a special issue guest edited by the California Office of Appropriate Technology).



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EVENTS

The Syracuse Peace Council, Syracuse, New York, is sponsoring an Energy Fair, April 22-23 at Onondaga Community College. The public is welcome. Exhibitions (commercial and non-commercial) are being solicited. For more information call Chris at 315/472-5478.

On Friday, Saturday and Sunday, May 19, 20 and 21, 1978, the Studio Museum in Harlem will sponsor the *Third Annual Lewis H. Michaux Book Fair*, in honor of the late founder and proprietor of the now defunct National Memorial African Bookstore. Admission is free. Twelve noon to 6 p.m. each day. This year's third book fair will include works by and about U.S. citizens of African, Asian, Central and South American, Caribbean and Native American descent.

The First Annual Positive Energy Convention for Central Illinois will be held Saturday, May 6, and Sunday, May 7, 1978, at the Timberline Recreational Area north of Interstate 74 on Route 117 near Goodfield, IL. Featured will be solar energy, wind power, bio-mass, insulation and energy efficiency. For more information contact: Dennis Longwill (309) 828-7724, Dr. Brian Crissey (309) 829-5195, Mark A. Chaddon (309) 829-0154

The Frankfort Community Public Library and the Frankfort Community Schools are sponsoring an Energy Workshop on Saturday, May 6, 1978, starting at 8:00 a.m. and running all day. The following people will speak: Michael Evans, Malcolm Wells, Dr. John Todd and Alex Wade. For more information and registration forms, contact: Bill Caddell, Frankfort Community Public Library, 308 West Clinton Street, Frankfort, IN 46041, phone (317) 654-8746.

Caribbean Conference on Energy for Development (CCED), April 3-6, San Juan, Puerto Rico, will relate Caribbean development goals to energy needs and supplies in the region and other parts of the world. Conservation and alternative energy development strategies such as use of solar will be highlighted. Over 40 nations to be represented. Contact: Katharine Donovan, CCED Conference Committee, Suite 414, 1055 Thomas Jefferson St., N.W., Washington, DC 20007, phone (202) 337-6580.

Community Organizing Training: The Institute, providing technical assistance and training in the principles of community organizing, will conduct two one-day conferences, *Organizing: An Overview*, in Miami, Florida, on April 11, and in Atlanta Georgia on April 13, providing an introduction and basic principles and models, as well as strategy and research skills. Emphasis is on practical methods which have been field proven. The fee is \$35.00 per person: \$30.00 per person with a group of four or more. Pre-registration required. Contact: Lina Newhouser, Conference Coordinator, The Institute, 523 W. 15th, Little Rock, AK 72202, phone (501) 376-2615.

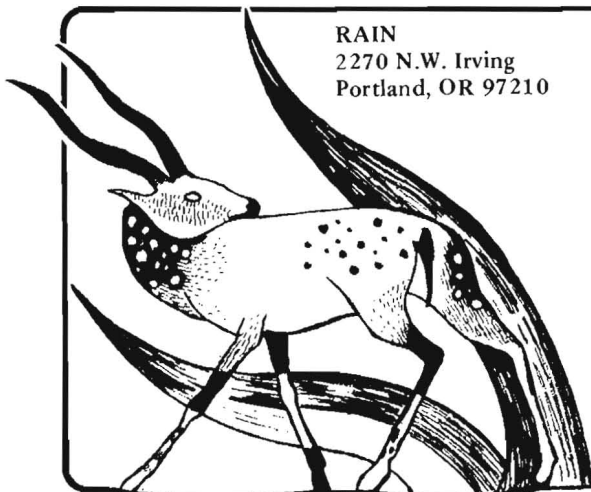
Prairie Project '78: *a Moral & Ethical Responses to Resource Limitations Conference with four concurrent sessions on energy, food, business response to resource limitations, and how to make small towns interesting (i.e. self-reliant) will be held April 25 at Doane College, Crete, Nebraska, and April 26 at University of Nebraska, Lincoln, NE. For further information contact Marie Arnot at U. of Nebraska, (402) 472-3592, or Don Ferrell at Doane College, (402) 826-2161.*

Evergreen State College, in conjunction with International SUN Day, will be presenting *Energy Northwest*, an exposition concerning energy use and appropriate technology. It will be on their Olympia, Washington, campus May 5, 6 and 7. For more info phone (202) 866-6191.

It's time again for the Annual Equinox Gathering sponsored by the Cascadian Regional Library. This year it will be April 27-30 at Silver Falls State Park in Silverton, OR. It's a good time for folks from the Northwest to share dreams, plans and dancing. Contact CAREL, Box 1492, 454 Willamette, Eugene, OR 97401.

JOBS

Doing More With Less, the periodical concerned with practical, home-grown ecology, is looking for an assistant editor. Responsibility: the sky's the limit. Future: yours to mold. Low or no starting pay; increasing as you help the periodical grow. Long hours, etc. Contact: *Doing More With Less*, Common Ground, 1090 S. Adams, Birmingham, MI 48011.



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